



USM's  
Kamla Raheja Vidyanihi Institute for Architecture & Environmental Studies

# KRVIA

**Course Structure Compilation**  
**B. Arch**  
**2021-22**

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# The KRVIA

## Our Vision and Mission

***“The KRVIA vision dwells on the imagination that the institute shall be an important knowledge centre for research in architecture & urbanism. Stemming from this imagination, the architectural inquiry seeks for embedded conditions through a multi-disciplinary platform. As a result, KRVIA, through the years, has witnessed the rise of multi-disciplinary faculties who have gained expertise by enriching their knowledge of the subject. The naïve contextual urbanism of the earlier stage that was seen as a manifestation of architecture with an urban inquiry is now expanding into questions of urban realm where the sphere of architecture constantly finds itself negotiating with newer emerging urban forces”.***

***The most important projects that the institute undertook in this phase were several international consortium and research projects. The formation of the post-graduate program is an outcome of all these endeavours. The discourse on architecture began to create a significant bridge between profession and discipline. The discipline discourse on architecture and urbanism are envisioned around four fundamental domains i.e. knowledge domain, practice domain, critical domain, and regional domain.***

Manoj Parmar  
Director, KRVIA

In order to embark on the future of an Institute, it becomes paramount to scan through the trajectory of an institute and its formative circumstances. The long evolution of KRVIA has witnessed a systematic shift of pedagogy over a period of twenty-eight years. The emerging pedagogy is finely grained in its long-term philosophical foundation laid by the founding director. This is perhaps the time to trace the history of pedagogic trajectories and move with regards to the larger rationale towards an emergence of a new academic paradigm.

KRVIA was the product of a liberal economic policy in education. During its formative years, the founder director set the tone of the institute’s pedagogy. The formative circumstances of KRVIA had to deal with the existing dogmatic structure of evaluation-based academics, undermining the enabling and engaging-based academics. The founding director enabled the process with fresh ideological questions on Indian Aesthetics. The teaching methods revolved around the question of representation and aesthetics. The architecture emerged as an assemblage of various forces that were assumed to be Indian. This phase also founded the various theoretical discourses around global architectural theories and its relevance in the Indian context. The emergence of inter-disciplinary understanding, the Encounter lecture series and the annual journal (Reflections) are important milestones that have formed KRVIA as an important centre for architectural learning.

The second phase witnessed the shift of aesthetic-based pedagogy to context-based inquiry. Architecture was seen as a product of contextual expression and object of naïve urbanism. The architecture was seen as an artifact of the urban place. KRVIA also witnessed the de-centralization of academics with respect to the academic decision-making process. This phase enabled the consolidation of subject expertise and concentration of discipline inquiry.

The third phase took the urban agenda forward where the architectural inquiry constantly sought for embedded conditions through a multi-disciplinary approach. The rise of multi-disciplinary faculty has enriched individuals with subject expertise. The naïve contextual urbanism is now seen as a manifestation of the urban realm where the sphere of Architecture constantly found itself negotiating with urban forces. The most important project that the institute took under in this phase were several international consortium and research projects. The formation of the post-graduate program is an outcome of all these endeavours. The discourse on architecture began to create a significant bridge between profession and discipline.

The discipline discourse on architecture and urbanism were staged around four fundamental domains i.e. knowledge domain, practice domain, critical domain and regional domain. The naïve contextual-ism paved the way for a regionalism discourse.

However, standing at current positions, one may raise fundamental questions which are apparent and necessary, simultaneously because the pedagogic structure must address the unfolding reality and emergence of new paradigms and technology.

These questions are:

**Does the multi-disciplinary approach paralyze the question of design and aesthetics?**

**Is the urban question on architecture, claustrophobic?**

**Is the sphere of architecture reducing? Is it a global phenomenon?**

**How is it relevant to India?**

The KRVIA vision for the coming years is embedded in the above stated questions. Hence it is necessary to imagine the pedagogic structure on this existing foundation and yet be forward and outward looking. The trans-disciplinary narrative perhaps can re-configure the existing edifice and the critical regional question becomes a force to reckon with, that would encompass the conceptual framework drawn with diverse forces. The future of architectural pedagogy is at the hands of individuals with newly cultivated knowledge anticipating manifestation at various scales. It is a stage where pedagogy needs to climb the ladder of epistemological understanding through various disciplines and build a conceptual framework for architectural learning (trans-disciplinary learning). The epistemic understanding through a trans-disciplinary mode allows fresh inquiry into the role of architecture, architectural and urban questions.

Changing times and new learning methods have challenged the existing methods of teaching, learning and time. Perhaps it is time for a change in spatial infrastructure and its physical manifestation. As a result, education methods and modes are changing dramatically, with the distinctive rise of e-learning, wherein teaching is undertaken remotely and on digital platforms. These changes that have come about now are here to stay for a while and we have to see it as an opportunity and also as range of alternatives. However, it is important to upgrade architectural learning with resources in the form of physical and spatial means. The existing infrastructure at KRVIA is equipped to sustain an equitable & inclusive, enabling & sustaining a physical as well as e-learning ecosystem.

# KRVIA Academic Trajectory

Knowledge Domain | Critical Domain | Practice Domain | Region Domain

## Critical

**History + Architectural Theory**  
Architecture discourse of Social and Cultural imperatives

**Architecture Speculation**  
Architecture Speculation on Past, Present & Future

**Liberal Arts**  
Architectural Narration in Art, Literature and Philosophy

## Representation

**Studios + Thesis**  
Narration of Architectural Question and Brief

**Study Tour**  
Place, People, Geography

**Visual Studies + Applied Studies**  
Study of Patterns, Principles, drawings  
Study of systems, Materiality and Situating

## Research

**Epistemology**  
Structure of Knowledge, Context, Meaning and Insight

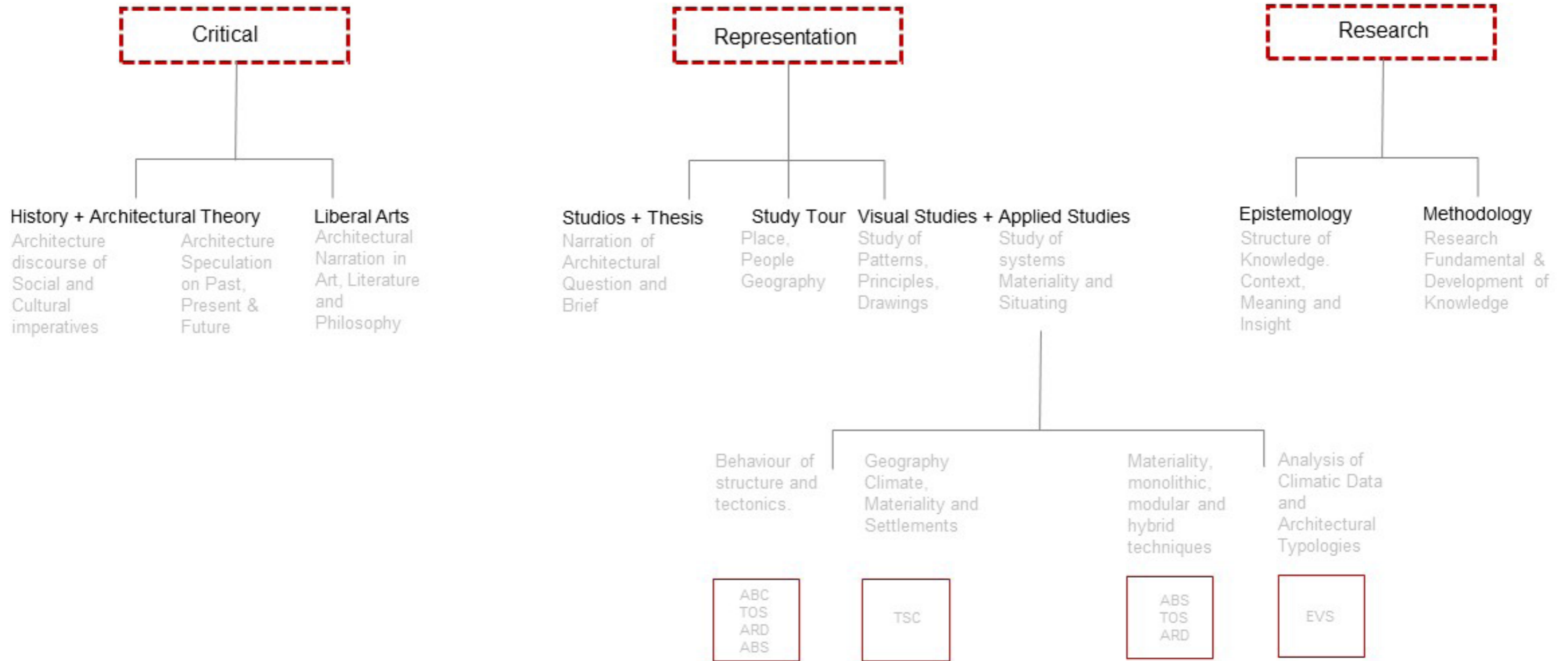
**Methodology**  
Research Fundamental & Development of Knowledge

# B.A. in Architecture

**The Bachelors in Architecture Program**

The B.Arch Program at the KR VIA

Knowledge Domain | Critical Domain | Practice Domain | Region Domain



# B.Arch

## Vision Statement

The intention of the B.Arch course in architecture at the KRVA is to create professionals who are able to participate proactively in the processes of improving our built environment. It places the act of Architecture within the larger domain of the production of space. Architecture therefore is seen not merely a skill that is imbibed by a student to apply in the world outside, but is rather a way of positioning one's role in the world, and the provision of tools and skills to participate in transforming the built environment. Thus, rather than creating individuals that can uncritically engage with the forces of transformation that we see around us, the school helps students through tools of critical thinking to consider the profession and its role it plays in the world, and make choices for their own practice accordingly.

### 1. The Here and the Now

An important factor of the way in which the course is designed is its attempt to place it in the **'here'** and the **'now'**, the spatial context and the time that we inhabit. However, we also realise that the **'here and now'** do not lie as isolated events. The **'here'** itself can be found at different scales from the molecular to the global and is interconnected to other spaces through economic and sociopolitical vectors; while the **'now'** emerges within narratives of history and is always embedded with imaginations of possible futures. Acts of Architecture give shape to these desires.

Attention to the **'here'** and **'now'** also allows us to concentrate on redefining some of the presumptions of mainstream architectural thought. It allows us to rethink given historical narratives, value systems and canonical examples.

### 2. The Myth of the Mind / Body Binary

Another important aspect that has been central to the way that we have tried to evolve the course has been to move beyond the imagined binary between the **mind** and the **body**. The act of design is one where this imagined separation is problematised. One cannot merely work within the abstract space of the imagination,

as acts of design perform their role as concrete facts in the world. The opposite is also not true, as every act of making in the world is embedded and affected by the world of ideas, economies and social systems. Instead of imagining them as separate from one another, the attempt has been to think about them in a dialectical relationship with one another. We have tried to evolve a course where a student is asked to perform the role of an architect. These performances problematise the traditional binary between the mind and body. Our minds and bodies work in collusion with each other. As the act of architecture is a performance in the world, this act is rehearsed in the space of the studio through repetitive meditations and elaborations on the themes that concern the spatial environment and acts of making, as in the *riyaz* of traditional and music and dance forms.

### 3. The Agency of the Learner

At the KRVA we believe that architecture is a vast area of study, and within it we should all be able to find our own place. The course has to be able to allow students to discover that place for themselves. The course is designed to enable a student to find her own trajectory, her own voice. This is done by consciously allowing a student to script her own trajectory of learning within the larger parameters given by the Council of Architecture and the Mumbai University. There is an attempt at different levels to catalyse the agency of the learner and provide her with a scaffolding, a support structure within which she can evolve her own position as a professional within the discipline.

### Proposition concerning knowledge

*The Academic Space is not only a space for the consumption or the dissemination of knowledge but is a space that is also involved in creating it.*

It has been seen that the architecture school when it is framed merely as a space to produce professionals for the market, is not seen as a space capable of creating knowledge, as often the knowledge that is produced might challenge some of the primary tenets upon which

the architectural discipline is built. Research may lead to new value systems and new histories that might allow for radically new ways of thinking about the profession. As a result spaces for research within the Architectural school are limited and even when they exist, are usually framed within primarily utilitarian frameworks. This limits the scope of the questions that architecture can raise, and consequently limits the role that it can play in transforming the built environment. The space of research therefore should be an essential part of any academic institution. This space does not need to be separated from the space of teaching. Students and faculty can evolve means of pedagogy that can embed within the learners too an attitude of exploratory and experimental thinking that can lead to novel ways of intervening within the world.

### Proposition concerning responsibility

*The academic space, to be relevant, has to break the boundary between itself and the world outside.*

The relationship between the space within the academy and the world outside is a hotly debated one. While the world within the walls of the school is often seen as a space for **'thinking out of the box'**, the world outside is framed as the **'real'** world. This is a self-defeating binary, not allowing one to affect the other. While the academic space can indulge itself in fantasy and speculation without a responsibility to the world outside, the world outside can shrug and put aside any kind of idealism as utopian daydreaming, and allow itself an uncritical engagement with forces of transformation. It is important therefore that this binary be destabilised. The boundary between the school and the world must become porous. Ideas must permeate through in both directions, challenging each to reconsider its own position. It is only through this kind of

permeability that we can evolve an architecture course that can stay relevant to the changing times.

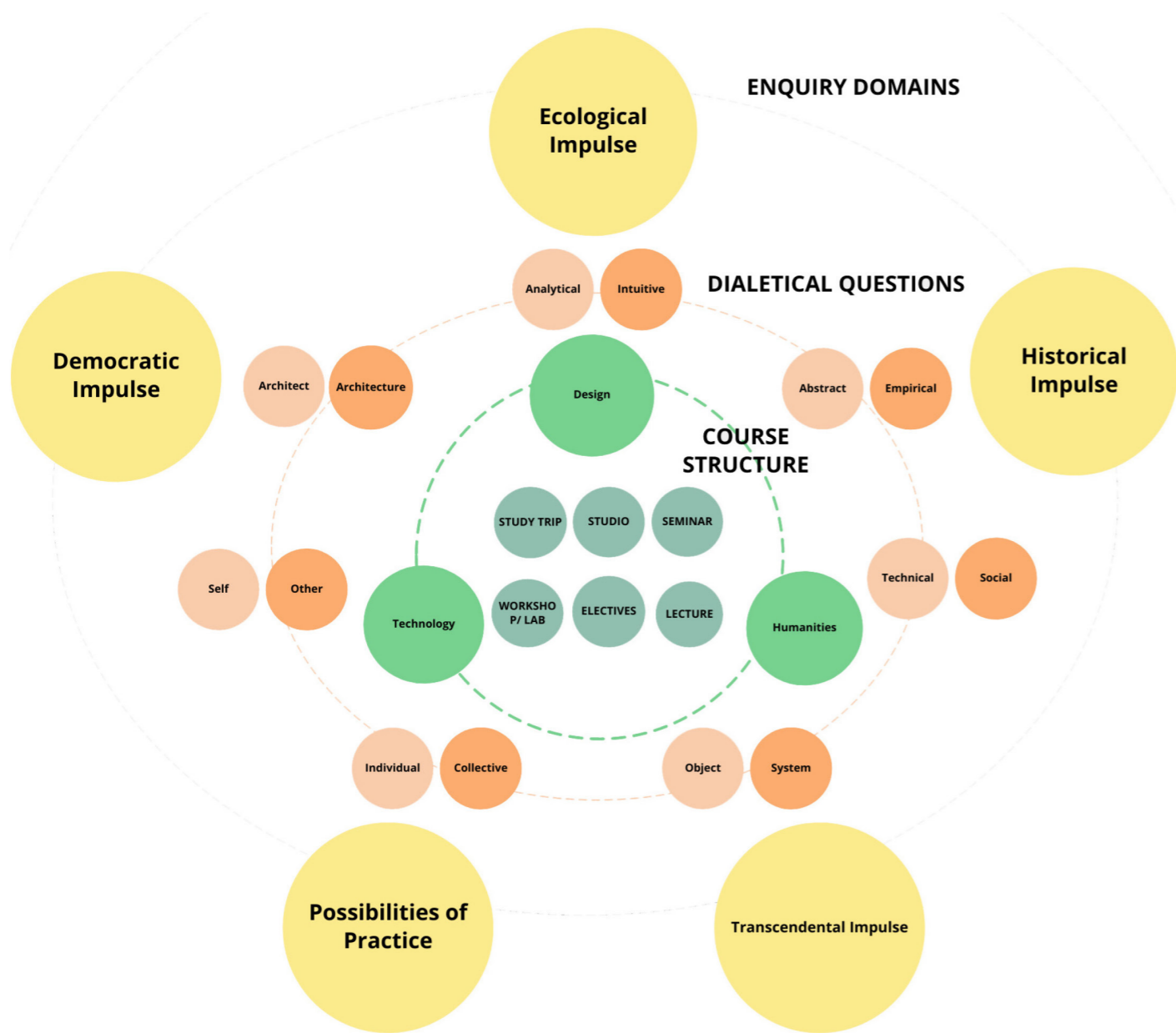
### Proposition concerning the discipline

We live in extraordinary times, where the world is at one level closely interconnected by new technologies, and at the same time made of isolated islands that are increasingly fragmenting our identities. As our cities grow rapidly, we face new challenges everyday, environmentally and socially. As the profession mandated to care for our spatial environment we have to be able to address these transformations. However, too often we find that the disciplinary boundary within which we work, or the expertise we claim are not capable of dealing with these transformations. It is important therefore for us to be open to collaborations with other disciplines. We can learn new ways of seeing and mapping, even new modes of intervening in the world through these collaborations.

What follows in the text below are some of the ways in which we have structured the course of the Bachelors of Architecture at the KRVA. We start off with some of the primary pedagogic concerns that we face today as practitioners. These concerns recur in different ways across different courses through the years. Following that are some of the modes of enquiry in the form of dialectical concerns that serve as a field within which the student makes choices across the arc of learning. This is then followed by the components within the structure of the course and the Arc of Learning across 5 years.

# Program Intent

## Domains of Enquiry



One of the main questions when framing a course on Architecture is to examine the state of the profession as it exists today. This would help us understand what the concerns of contemporary practice are. This would require the courses to constantly find ways of engaging with the transforming landscape around by consciously reflecting on the relevance of the conceptual ideas within the academy to the 'here' and 'now'.

Given here are five broader impulses that seem to be shaping the value systems of the discipline. These impulses become trajectories along which we begin to 'act' through the making of a building, or in any other way that is deemed fit. These are merely frameworks of seeing and do not in any way restrict an action within only one or two of these categories. In fact, many of the greatest architectural interventions will transgress these categories entirely. Different courses find ways of examining these in the way that they structure the course, the case examples chosen as well as in the pedagogic processes involved.

### The Democratic Impulse

This is the urge of architecture to participate in the processes of making a fairer world. With its ability to affect the ways in which relationships between people and resources are structured, architecture can be a powerful tool towards making the world more equal and free. It can distribute resources sensibly and fairly, create opportunities for growth and fulfilment that are just and equitable. This is the impulse through which we care for each other through the ways in which we imagine space and form.

### The Ecological Impulse

Here we are concerned with the relationship that architecture makes as an interface between the 'human' and the 'natural'. Seen as antithetical to each other, this can lead to 'nature' being imagined as something that can be used and/or misused. This is a relationship that seems to be at the heart of much architectural discourse today with 'green', 'sustainability' and 'resilience' as part of almost every single conversation. However, these conversations can sometimes devolve into glib

one-liners. It is imperative to examine this intertwined relationship- to be able to evolve frameworks through which we are able to read and calibrate it, away from given presumptions.

### The Historical Impulse

This concerns our relationship with history, the way we make relationships with the past, and the future through our actions. Thus this is not merely about ancestry, it is also about legacy. If indeed as Reiser and Umemoto suggest in their 'Atlas of Novel Tectonics' that every work of architecture writes its own history, what history do we choose to write, why and how?

### The Transcendental Impulse

Architecture is integral to culture. It is a representation of our knowledge, experience, beliefs, values, attitudes, meanings, hierarchies, notions of time and conceptions of the universe. As culture, it is both our prosaic needs and our urge for transcendence. In beauty we find the possibilities of this transcendence, through our bodies and our minds, in esoteric abstractions, sensual experience and in our dreams. Through architecture we can laugh, speak, cry, wink, love.... The transcendental impulse is interested in the possibilities that lie here.

### The Possibilities of Practice

If we have to indeed reclaim the mandate of architecture, (i.e. to be able to, through spatial interventions, affect change towards 'betterment) perhaps we also need to examine what constitutes practice, what are the presumptions upon which the discipline is built, what is the structure of the profession and how does it shape its training and validate institutions. Are there blind spots within that do not allow it to effectively affect change? Are there possibilities of new kinds of agency that we can claim new ways of seeing and representing, along with new kinds of practice that are necessary.



# Program Objectives

Modes of Enquiry

ARCHITECT

THE SELF

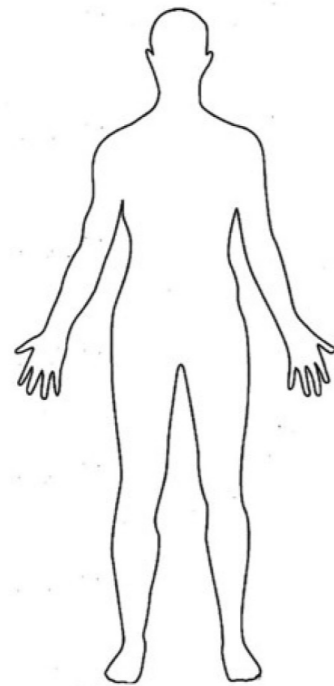
THE INDIVIDUAL

THE OBJECT

THE ABSTRACT

THE TECHNICAL

THE ANALYTICAL



ARCHITECTURE

THE OTHER

THE COLLECTIVE

THE SYSTEM

THE EXPERIENTIAL

THE SOCIO-POLITICAL

THE INTUITIVE

All over the country we are witness to some unprecedented changes in the way that cities, small towns and villages are transforming. These include the redevelopment of historic cores to make way for real estate speculation, the exploitation and destruction of the environmental systems and rapidly expanding limits of the human inhabitation destroying the hinterland.

Architects and architecture are deeply implicated in this process. Many architects choose to participate wholeheartedly in these processes in spite of the ethical and moral issues. They rationalise their roles as merely service providers facilitating the shaping of forces beyond their control. Another tendency is to shun all responsibility for the shaping of the built environment and take refuge in aesthetic pleasures that merely are palliatives softening the impact of the more destructive forces that are actually at hand.

similar situation is mirrored within architecture schools, as they try to cater to the needs of the market. Rather than a space that can provide for critical reflection and thought concerning the built environment they can sometimes become producers of a labour force for the forces that are currently ravaging the environment. If architects have to be able to meaningfully engage with these forces to affect change for public good, it is essential that the education of an architect must equip

them with the methods and tools to be able to do so.

At the KRVA we are attempting to evolve a course that begins with an examination of the 'here' and the 'now'. The attempt is to be able to critique deeply ingrained presumptions about role, value and process from the place that we inhabit, in the city of Mumbai and South Asia with its unique history and particular economic and socio-cultural issues.

We believe that the space of the academy should be a space to question and critique existing systems of spatial production to allow for new and inventive ways of intervening as architects. Through the questions raised within this space, we can allow students to make choices about who and what they want to be as architects through a process of critical thinking. It is important therefore to create a space that can encourage a student to discuss and debate the appropriate response to a situation and then respond to it. Given below are 7 dialectical questions which can be explored. As 'dialectical' questions they propose a binary relationship between terms. Each of these terms is placed at two poles creating a field of tension between, and it is this field that the students are placed, allowing them to explore their positions and possible responses. It is hoped that the design of the course would enable this kind of enquiry.

## Question 1 Discipline/ Profession

The act of making architecture is located within the larger domain of the production of space. As mentioned earlier the KRVA believes that the academic space is not only a space for the consumption or the dissemination of knowledge but is a space that is also involved in creating it. We intend to create professionals who are able to participate proactively in the processes of improving our built environment. Architectural thinking is therefore not merely a skill that is imbibed by a student to apply in the world outside, but is rather a way of positioning ones role in the world, and discovering processes and modes of practice to participate in improving the built environment. These skills allow a student to be agile yet centred. They can approach the rapidly transforming environment and the varying spatial conditions that they are asked to engage with proactively. Thus, rather than creating individuals that can uncritically engage with the forces of transformation that we see around us, the school helps students to develop critical thinking tools to consider the role of the architectural profession with respect to the wider world of the architectural discipline. This will enable to students to find appropriate modes of engaging with the wider world based on their own subjectivities, their value systems and proclivities, and individual skills.

## Question 2 Analytical / Intuitive

Often the studio space is seen as a place to think 'out of the box'. This, privileges the idea of the creative individual free from responsibilities to the world- as if to think creatively one needs to disengage with analytical thought. This classic dichotomy between the rational and the poetic, between the left-brain and the right-brain has to be dismantled. These binaries are rhetorical in nature and are used to dismiss and discard the other point of view in arguments- but are not true as experiences of the world. It serves little purpose when architecture has to deal with both. Such thinking not only relegates the poetic to individual

expressionism- and therefore without inherent logic- or rules and grammar; but also simultaneously says that order or clarity has no beauty- or ability to inspire. Thus creative thought is relegated to being exciting but irresponsible, while analytical thought is seen as necessary but tedious and boring.

A similar separation can be seen in student communities. Students who do well in the 'creative' design subjects are often seen as superior to those who do well in the more technical subjects. As a result often students do not engage with the technologies creatively, or vice versa. As teachers we have to be able to allow students to engage with both. Within the school processes can be designed that allow students to engage with the contexts through frameworks that bridge the perceived gap between the analytical and the intuitive. These will greatly enrich the learning of a student and allow for a deeper understanding of the architectural process.

## Question 3 Abstract / Concrete

One of the most important skills of an architect is the ability to read space through abstract frameworks. These abstract frameworks allow her to perceive space in a unique way and enables her to organise it in different ways. The drawing, for example, is the classic tool of abstraction of reality that an architect works with. This tool allows her to map relationships in space, and create representations that shape the lives of people. Often however, these abstractions overcome the specificities of the context that the architect is engaged with. Entranced by the patterns of these abstractions, their apparent efficiency and beauty, architects foist these upon realities that are substantially different. Examples of this abound. The idea of the 'modern' is merely one example. Unable to read our own history of modernity we have adopted narratives from the western world and have tried to adjust our own history with that one- and have naturally failed. Even when we have tried to evolve our own narrative of an "Indian" identity it has fallen prey to the abstractions inherent in constructing a myth of a national unity, given that we live in so many different geographies, histories,

languages and cultures across the country.

As a result of this, among many architects there has also been a complete dismissal of abstract processes, by claiming to return to a pre-industrial mode of architectural production enmeshed in everyday experience. What are often called 'barefoot' architects repudiate the abstraction inherent in architectural thought and claim to grow architecture from a deep engagement with the context. This immersion in the empirical realities would, it is presumed lead to a more nuanced understanding of the context. The world of desire and of imagination that can emerge only out of a certain abstraction of the real are denied presence. Architecture here is seen as merely the built manifestation of current social and economic forces and is not seen as having the ability to change anything. As a discipline that has the responsibility of working towards a greater common good, retreats into the abstract can be seen as escapist while the complete denial of the importance of abstract thinking can also be self-defeating. Instead, within the studio space a dialectic between the empirical and the abstract could be created. This would allow students to form frameworks to help read the patterns and relationships that exist in space. These patterns would be informed and shaped by the material facts that they encounter and therefore be more relevant and well informed.

## Question 4 Self/ Other

Most architecture students today come from the urban middle classes of the country. Over the past 20 years this class has been the target and the beneficiary of many of the advantages of the liberalised economy. This has also led to a very particular way in which the experience of the world of the students has been shaped that often does not allow them to engage directly with what they see around them. Without any experience of the world, they are instead trapped in received senses of identity, of right and wrong, and tend to accept those value systems as the norm. As a result they are resistant to different ways of seeing that

might challenge these preconceived notions. This could be ascribed due to the false sense of security that the highly mediated and image saturated culture creates; or due to the limited exposure that they have to other ways of living and seeing the world- whether that is in the school education system, the media or their daily experience of the world.

As architects, however, this sense of self-confidence can be rather limiting. It does not allow for a student to learn from the differences that one encounters as a practitioner. It forces a practitioner to superimpose a received set of values systems on communities with different histories and value systems. It is essential that in the education of an architect the smug sense of security within him, her or them be challenged. It is only through exposing the students to different ways of living, and value systems that contradict their own, that they would be able to cast a critical eye at the things they otherwise take for granted. These may often be disturbing at times for students who have been sheltered in a protective shell until then, but it is this very shell that stops the student from growing as an individual. It is thus important that they students be asked through the pedagogic process to engage with empathy with cultures outside their comfort zone- to encounter the 'other'. This can be achieved through cross cultural studies, exchange programmes and study trips- that are more than fleeting traipses through foreign lands- but are engaged more deeply in a context so that meaningful conversations concerning differences and similarities may emerge.

## Question 5 Individual/ Collective

One of the inescapable legacies of high modernism in architecture has been the 'hero myth' or what can be called the 'Howard Roark' syndrome based on the mythical hero-architect of Ayn Rand's novel 'The Fountainhead'. This image of an architect as an independent, expressive individual, whose vision and talent keep him soaring above society has marked and marred architectural practice. This swagger

and machismo have often created an essentially confrontational approach of the 'creative' designer-against people, against history, against nature- all of whom are marked as "effeminate" in some way or another. Not only does this allow for a markedly violent and self-indulgent mode for architectural practice, one can also see the frustration apparent in many students when they step out into the world when faced with the inability to 'make their mark' in a profession so completely based on team work. Not only does the hero architect suffer much frustration when his/her/their "vision" is not realised, but so does the world in general when it is.

The space of the academy as it is currently imagined furthers this myth. Individualism is much vaunted and appreciated, while many of the best students complain about the burden of group work because it hampers their own creativity. This antagonistic relationship between the ego and the collective must be consciously reconfigured in the studio space. Rather than the collective being seen as a burden that needs to be carried, or a hurdle that must be surpassed in the shaping of Architecture, forms of collective creativity can be experimented with. The idea is not to dismantle completely the individual's identity, but to place it in relationship with the collective, so that it can then be problematised and reconfigured. This can change the way that the architect measures her success and the mode of practice entirely.

## **Question 6** **Technical/ Social**

Another legacy of the education system that we have adopted is the highly technocratic nature of the syllabus that results from a faith in the scientific method. Architecture is seen as the science of building, and as a science is seen as subject to universal laws that can be applied regardless of context. The wholehearted adoption of so many of our policies and laws shaping the built environment stand testimony to this. With a dry rationalism that denied anything that could not be quantified and classified, it reduced the idea

of architecture to that of the minimum standard- an architecture whose byword was efficiency. To implement this was a process of highly centralised control and a convoluted bureaucratic system that reduced the variety of particularities into generic codes that could be applied uniformly across the country.

This imagination of architecture continues to haunt the studio space- the rational as beautiful, and the violent dismissal of the idiosyncratic as dangerous. The area statement, the bubble diagram, logical structure and organisation, the faith in the plan as the generator and elevations being dismissed as merely decorative.

As a result the syllabus often relegates subjects such as history and the humanities to the margins and centralises the technical subjects. Even here the technologies are seen as context-less generic solutions that can be applied anywhere. We do not have ways of seeing technology itself as a cultural, social and an economic factor. As a result, our tools of reading and understanding society, who we build for- are insufficient, partial and inadequate.

Yet, there are many frameworks in other disciplines that may allow us insights into these systems. Methods of understanding and representation from sociology, economics, film, etc. can inform and educate us about the relationship between the built and the processes that it is enmeshed in. Interdisciplinary frameworks within the studio space can open out the architectural object to new ways of reading and intervention. If the horizons of architecture have to be opened out- these methods are the key and have to be essential to the way in which we run a studio or make a course.

## **Question 7** **Object/ System**

Another legacy of high modernism has been the fetishisation of the architectural object as a unique marker of the architect's personality. This object then becomes the commodity that represents the architect in the market of practice. This often distances the architectural profession from some of the concerns that it can have- as it ends up becoming merely a 'signature'

style dressing up often fundamentally flawed projects. Even if you leave aside the fact that this object obsession leads to many incredibly irresponsible buildings- socially, economically, environmentally, as they are often reduced to mere images- not addressing the non-visual / spatial aspects of the building.

There is also a classic dichotomy in so many discourses around architecture. One begins from the object and in the process of elaboration forgets the forces through which the object has evolved. The other privileges the cultural and economic processes through which the architecture evolves and claims that form is merely a result of those. While the former discourse is unable to perceive the systems through which form emerges (an 'autonomy' of form); the latter by claiming form to be merely a product of other forces does not acknowledge form-making as also a process capable of making a change.

But these two discourses cannot so easily be separated. One lies embedded within the other. Can there really be the production of architectural form outside the world of economy and culture? The space of the academy should consciously concentrate on unpacking the processes within which the built form exists. However, the relationship between the forces of production and the resultant form is not so easy to decipher. It is far from an easy linear relationship. As architects, we have not been equipped with the tools to read these forces and tend often to make cause-effect assumptions that are often naive and simplistic. It is important to use the studio space to engage with the context and to evolve tools of reading, representation, analysis, craft and intervention that might illuminate these relationships.

## **Question 8** **Architect/ Architecture**

It is seen that the traditional imagination of the role an architect is to play has to be expanded to be able to address the transforming physical landscape. With distances collapsing between places around the world and information flowing freely across borders; along with the simultaneous collapse of the walls between disciplines, ideas concerning design, along with

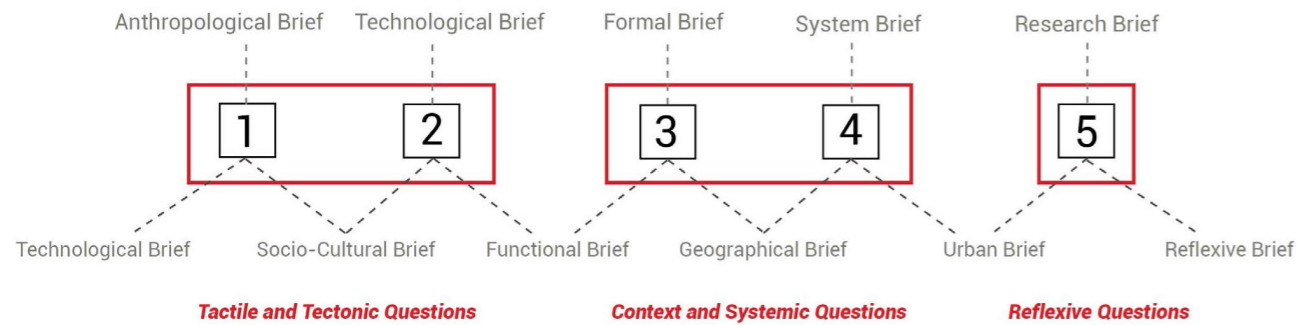
processes of building are changing radically. While on the one hand super-specialisations are emerging, architects are also being asked to rethink their traditional domain and cross-disciplinary work is becoming the way of the future as projects become larger and more complex. Meanwhile smaller firms are also struggling to cope with the rapidly changing landscape multi-tasking and playing many roles to get the project realised. Few of these skills have been seen as traditionally within the scope of an architect's profession and are often not addressed in architectural education.

We have also observed that architects manage to affect a minuscule fraction of the actual building in the country. Within the villages and towns of the country, buildings are being built with no contribution from the profession of architecture; and self-built slums proliferate in the cities. There is no way for the architecture profession as it is currently imagined to engage with these forces. We suggest that if architecture is to be made more effective as a force shaping our cities, there is an urgent need to rethink what we conventionally call architecture. So far it has been imagined as the unique creation of a single individual which can fit in easily into the assembly line of producing buildings within the capitalist mode of production. As has been observed this imagination, although not obsolete, addresses only a minuscule amount of the built production of the country. With the transformation of what we call the domain of architecture, new modes of practice can emerge that allow for a deeper and committed engagement with the shaping of the built environment. In that sense a new role for the 'architect' emerges. The space of the Academy can allow for students to explore this relationship - between the nature of production and the form of practice necessary. Issues concerning the city today need to be studied and the student can don a role best suited to intervene within it- whether that be of an activist, designer, manager or facilitator.

# The PO's

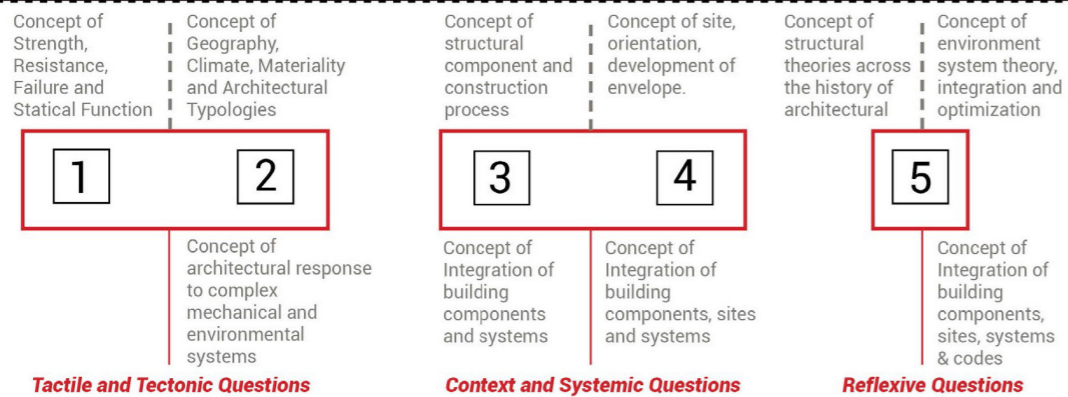
- 1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.**
- 2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)**
- 3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete)**
- 4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. (Self / Other)**
- 5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)**
- 6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)**
- 7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)**
- 8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture).**

## Architectural Design Studio | Allied Design Studio



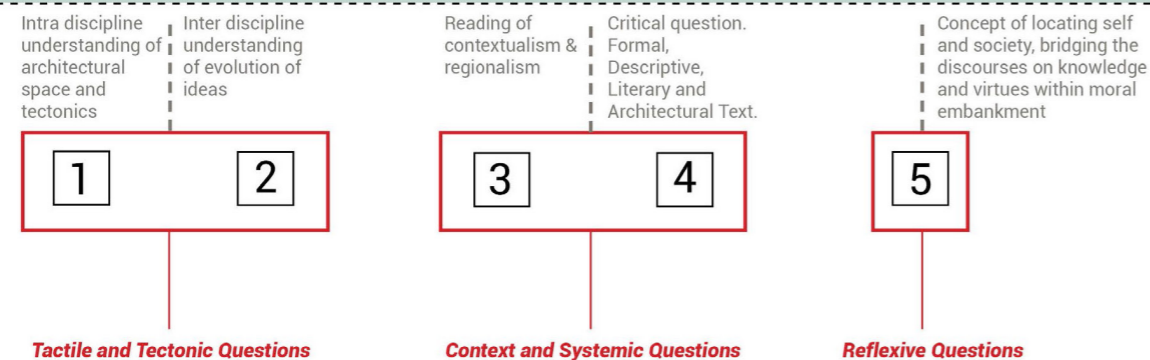
### Narratives of Architectural Questions

## Technology Studio | Building Construction | Structures | Building Services | Environmental Sciences | Architectural Representation and Drawing



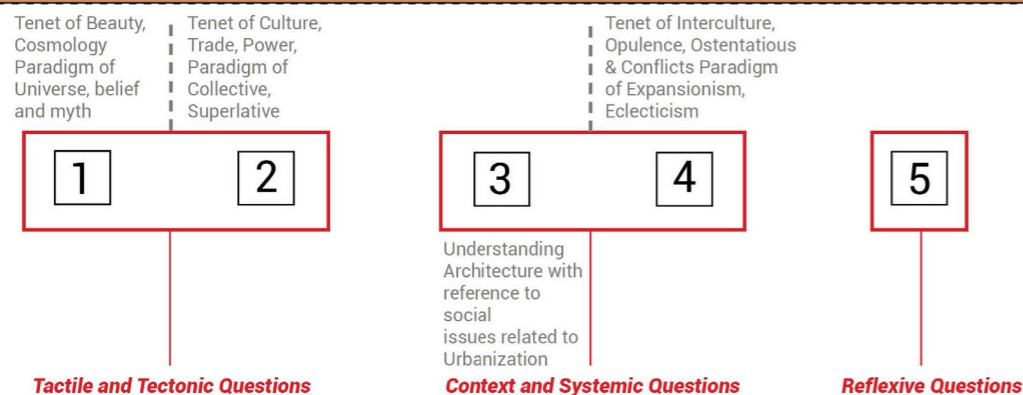
### Study of System, Materiality & Situation

## Architectural Theory Model | Humanities | Situating Practice



### Study of History of ideas & Theory of History

## Architectural History Model



### Discourses on evolution of ideas in conceptual timeline with causes and imperatives

# Courses

## Course Components and Structure

### The Studio - Design

While the course content itself is divided across three interlinked streams- Design Studios, Technology Courses and Humanities Courses, the main components of the structure of the course typically take the form of three kinds of delivery mechanisms - the Studio, Lecture, Seminar Courses and Electives; While the latter three are imagined to be places where specialised knowledge is gained by the student, the former is meant to be the place where the student demonstrates proficiency in the "Act of Design". There is also a Study Trip programme that runs through four years of the school. Given below are short descriptions of the pedagogic role of each component. Studio Spaces

The act of design is an act of performance. The studio can be seen as the space where the performance is rehearsed through the design of specific actions that the learner is asked to engage with. One of the main determinants for the course is to imagine the act of design as one that conjoins analytical and abstract thinking along with an action. As mentioned earlier, too often these are seen in their own individualised compartments. It perhaps is more useful to imagine the two in a dialectical relationship within which the students through performing the act of design explores the space between. It is this perpetual and continuous meditation and exploration of the relationship or riyaz through which the act of design is embedded in the learner. What this implies is that every studio exercise concerns both the act of conceptualisation and the act of resolution. The parameters that are set for each studio can be pitched based on the position of the learner, the levels of expectation can also be understood based on the position within the learning arc that the learner occupies. However, the act of design has to be seen as one that is not a mere determinant of an abstraction devoid of the real.

### The Studio - Technology

In the Technology Studios there is an attempt to create a variety of different modes of engagement of the learner with the subject matter. They include:

- **Conceptual Modes:** where students acquire an understanding of fundamental concepts of building sciences.

- **Analytical Modes:** where students are able to develop analytical processes for the evolution of design either individually or through consultation with specialists depending on the scale of complexity.
- **Intuitive Modes:** Where students develop intuitive understandings of various building systems and proportionate sizes of components and are able to visualise their concepts as material objects subjected to natural forces, usage and constructional possibilities.
- **Tactile (Hands-on) Modes:** which inculcate a practice of doing "hands-on" wherever the opportunity is available and develop empathy towards craft and craftsmanship.
- **Collaborative Modes:** which value collaboration across disciplines and stakeholders and are able to communicate effectively.
- **Representational Modes:** to develop and represent a technically sound and graphically effective proposal.
- **References:** which refer to appropriate resources (historical examples, case studies, standards, technical literature, guidelines, handbooks, codes, etc.) as required while arriving at solutions to the design problems.
- **Innovative Modes:** where students are asked to arrive upon unique solutions for the particular problems that they are faced with through a combination of many of the above processes, or in the absence of suitable standards and case examples, they are able to conceptualise building and site systems and custom design details befitting their core idea.

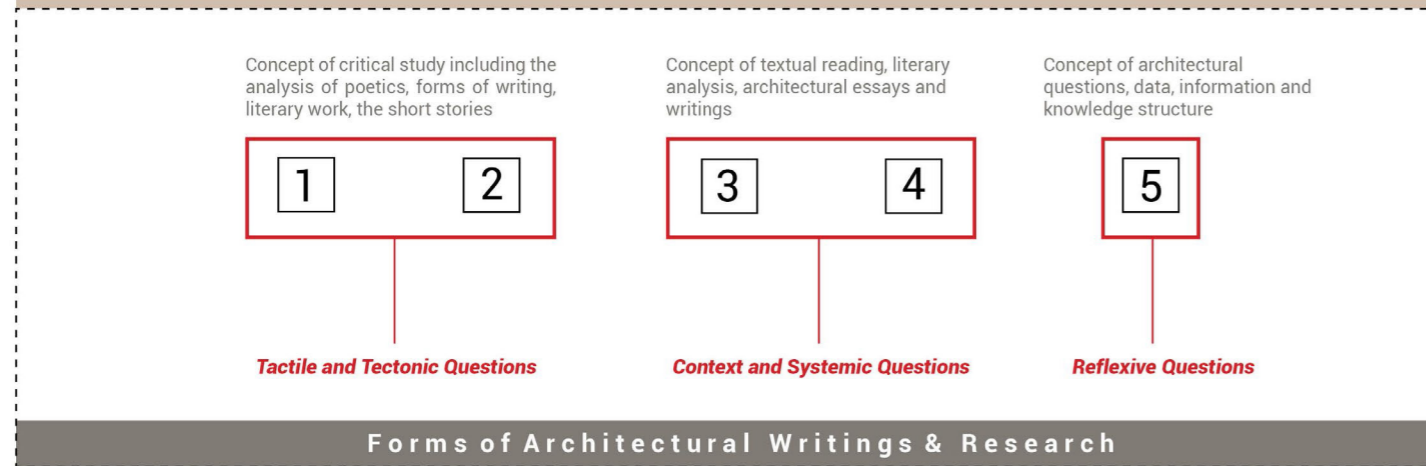
## The History, Humanities and Theory Courses

These courses serve to create a background of knowledge within which the act of design takes place. They expose the students to new concepts, ways of thinking, specialised skills that can contribute to the overall development of the student. They need not dovetail smoothly with the studio space at all times. They can be spaces that support or challenge some of the presumptions of the studio. They largely follow three intersecting trajectories across five years:

### 1. Architectural Theory

The course intends to inculcate a habit of reflexivity, to

## Research Model - College Projects | Thesis I | Thesis II



open out the critical/dialectical relationship between knowing and doing. The theory of design course will frame architecture as an expanded cultural practice, that engages and borrows from ideas across disciplines. It will frame the act of architecture as a reflexive critical practice and theory as critical and propositional endeavour. It is the place for meditation, discussion and debate about language concerning architecture- visual, spatial, verbal as well as written. The attempt is to create a space for conversation about the dialectical relationships between the idea of 'architecture'- a disciplinary question concerned with what the domain of architecture is, what its identity is, and what its responsibilities and ethical role is; and that of the 'self' of the 'architect' - a philosophical / psychological question that is concerned with what the particular skills of this profession are, what it's role is and how does this person place herself in the world.

It aims to engender in students a capacity to think conceptually to enable new ideas and approaches to emerge. The course will expose students to works of art, literature, architecture and ideas through history, to engender an agility of thinking conceptually across and through traditional disciplinary boundaries. Within the course there is an attempt to challenge the idea that practice and thought are separable - that there can be theory that has no concrete relevance; or that there can be practice that exists outside of thought. The attempt is to allow students to explore the relationship between thought and practice in cultural works, but through the particularity of the here and now. Unlike the history course- it will use a comparative and conceptual framework rather than a strictly historical one.

## 2. History Courses

The History of Architecture course at the KRVA primarily attempts to enable the student to ingest notions of one's own cultural identity. The attempt is to understand history not as a sequence of haphazard events but one that is made by people in the satisfaction of their daily needs.

The course goes beyond the taxonomic method of categorising and describing the physical aspects of the historical object to include the purpose of its making. While history is traditionally presented as a collection of facts and events that have transpired across time and place, it is pertinent to equip students on existing information and knowledge around these interpretations of facts. The emphasis therefore is on the understanding, analysis and relevance of this information in contemporary times, which will help them in gauging the society and context in which they live and operate.

The objective of the course is to bridge the distance between history as a construction of cultural identities and history as a material expression of the built object. The course adopts the modes of production as a chronological system to discuss the ideas that lead to a production of architecture. History is thus, seen and discussed as an understanding of processes - an intersection of belief, technology and social structure.

Four stages - the agrarian, the mercantile, the industrial and the service economies are considered, to place the study of the history of architecture across five years at the KRVA. It is imagined that the first three years will place themselves within the agrarian, mercantile and industrial economies. Parallel to the history course the Theory of Design course of the second, third and fourth years explores the history of modernity and architecture up to contemporary times.

The History of Architecture course in the first three years corresponds to the larger pedagogic structure of theory and design learning - the Spatial, Conceptual, and Critical aspects. These aspects are mobilized through various spectrums of thoughts and particularly the simultaneous geographical section. The attempt will be to dissect architectural history through various spectrums of thoughts and responses.

## 3. Humanities Courses

The humanities course aims to establish the criteria

to evaluate architecture for what it does, and to test the profession's claim to validity in public culture. Architecture is understood broadly, as the built landscape - not simply as significant works by significant architects. These courses will encourage students to investigate the built landscape through the social relations of spatial production.

## Elective Courses

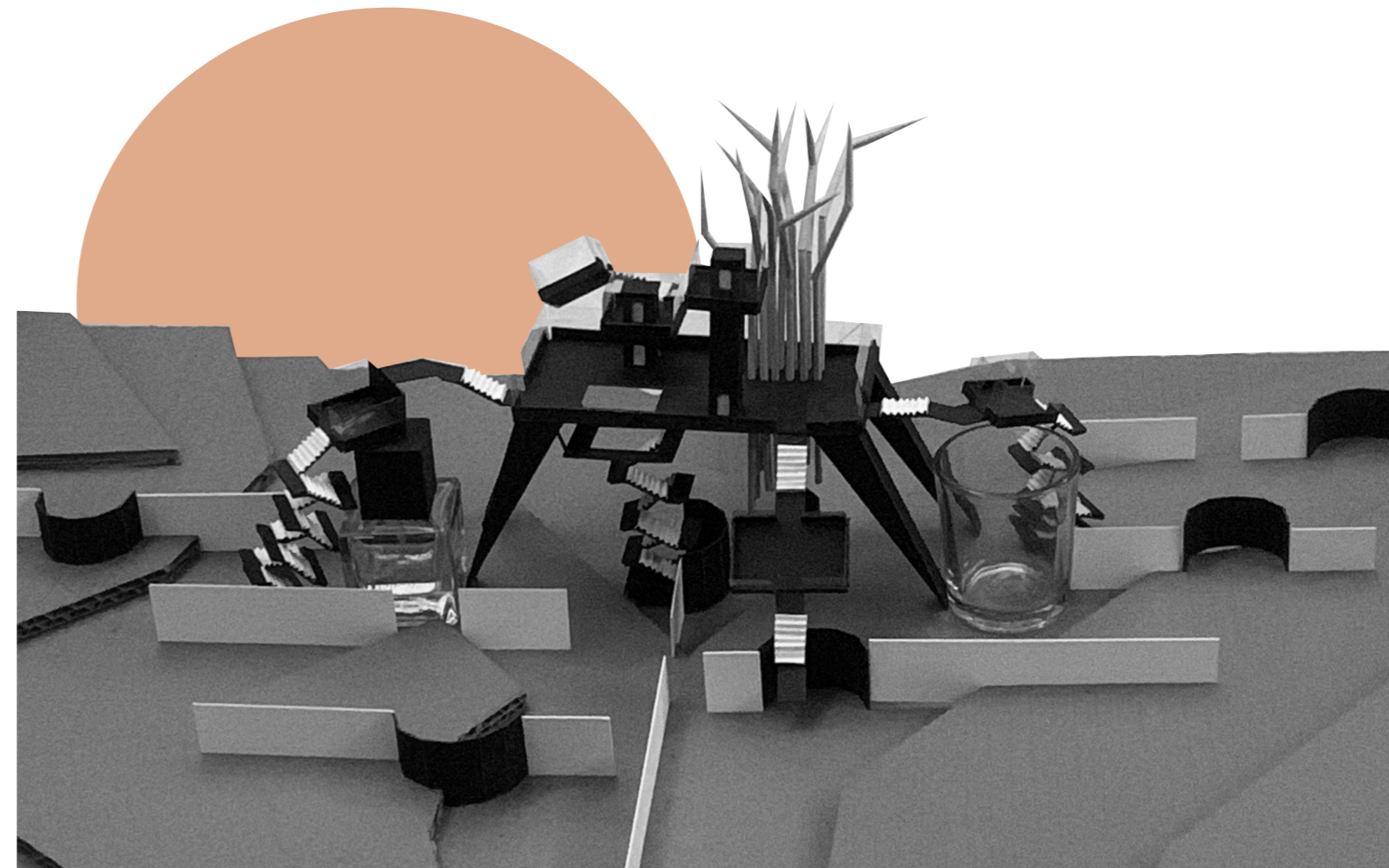
These are spaces for the faculty and the students to explore new areas of interest. These can also allow the students to see the role of architecture within a broader cultural context. They can take the form of trans-disciplinary explorations, specialisations or parallel interests that can enrich the understanding of the student.

## The Study Trips

Parallel to the three streams mentioned above is a Study Trip Programme where students are taken to different contexts and asked to engage with them through the act of observation, analysis and representation. These are essential spaces for students to learn about other realities within the country, and also allow the school to discover and create knowledge about the varying histories and contemporary realities of different places within the country. These study trips provide an essential space for explorations in architectural ideas that take different forms from the first year to the senior years.

## Other co-curricular spaces

Besides the core academic courses mentioned above at the KRVA there is also an attempt to make many co-curricular spaces for blurring the boundary between the city and academy, along with interdisciplinary and trans-disciplinary explorations. They include the Exchange Programmes, The Research Cell, Weekly Encounters. The Kamla Raheja Memorial Lecture Series, the Publication Cell, etc. These are spaces whose concerns feed into the Academic space.



# The Arc of Learning

In this section we shall try and attempt to trace out the overall role of each of the five years of the course in the role that they could play in the overall development of the learner.

CHALLENGING  
FOUNDATIONS

THE BODY  
DOMESTICITIES

1

BUILDING  
THE SELF

NEIGHBOURHOOD  
COMMUNITY

2

CONSOLIDATIONS

IDENTITY  
INSTITUTION

3

PROBLEMATISATION

URBANISM  
INFRASTRUCTURE

4

POSITIONING  
THE SELF

RESEARCH

5

RESEARCH

**5 Years Bachelors of Architecture**

**2 Years Masters  
Urban Design  
Urban Conservation**

# Program Specific Outcome

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to decenter the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.



# Program Specific Objectives

1. To enable the student to extract and comprehend the abstract from the concrete or from what they see and know of the world around them.
2. To explore mediums and methods of communication of both non-conventional as well as technical means of abstract ideas.
3. To centre the body as means of enquiry of the world around that collects, re-looks and re-imagines information.
4. To instill a sense of empathy towards the collective and its multiplicity.
5. Employing hands-on work at both individual and collective levels as means of enquiry, evaluation and expression.
6. To enable the student to script one's own project.
7. To enable the student to break the boundary between abstract thought and material realities
8. To enable students to discover multiple methods and tools to develop their own process of learning to allow them to explore who they are as an architect.

# First Year

# First Year

## Pedagogic Intent

Primary Dialectical Questions: Self - Other / Analytical - Intuitive / Individual - Collective / Abstract - Empirical

The First year is perhaps the most important and delicate of the five-year course. Students come from a variety of different backgrounds to become architects. They bring with them presumptions and value systems that are often accepted by them uncritically. As young adults they are also on the threshold of finding out who they can become as adults. The students also come from a system of education that emphasises rote learning with clear and determinate deliverables. Along with that is the expectation of what architecture is meant to be shaped by what they see around them, or more often nowadays, as told to them by the preparatory classes for entry into architecture school. There is a need at this point to challenge most of these presumptions. For the student to open herself out to the possibility of indeterminacy, scale and scope of architectural education, it becomes extremely important to provoke students to reconsider the making of the Self, allowing students to see their own subjectivity as a result of circumstances, while at the same time enabling them with the ambition and desire to transform themselves to perform as architects.

There are two other important methods that are deployed at the first-year level. The first concerns hands-on work. This allows students to break the boundary between abstract thought and material realities. The second important method in the first years is collective work. Besides getting the students to learn from each other, playing on their strengths, it also displaces the individualistic egocentric imagination of the architect.

## Introductory Workshop

This is the first academic engagement that the student has with the school. It is conducted for the first 7-10

days of the course. It has through the years worked on several levels at once.

1. To break the students of a classroom instructional mode of learning, into thinking through making, and learning and working as play and pleasure.
2. To replace the humiliations of ragging as a way to get to know the student community by a system of Teaching assistants who become friends and advisors through the disorienting newness of architecture school.
3. To make the students into a community of friends and colleagues, through group work, theatre exercises etc. Critical to this process are group-work, working with real materials and processes of making, and the teaching assistants who are able to engage with, befriend, guide and work with the groups.

## Design Studios

### Anthropological Brief

Courses: Architectural and Allied Design Studio

The First Year studio becomes a space for the first introduction to thinking spatially. The Body has to be implicated in this process. This body is how we begin to apprehend the world around us. Its anthropometry, phenomenological experiences, questions of subjectivity are central to this exploration. Parallel to this is the exploration of materiality and their potential affective and tectonic potentials. While the Architectural Design Studio focuses on questions of inhabitation, the Allied Design Studio is a space where the nature of Form is explored its tectonic properties as well as the way that meaning emerges within it. In the projects intuitive modes of design are often placed with more analytical frameworks and vice versa. For both projects the experience of the city becomes an important context., whether that is through the subjective experience of the city, or the study of a character within the city through a

particular lens. These lenses could be more empirical but could also be through the lens of metaphor.

## The Technology and Representation Studios

### Tactile and Tectonic

Courses: Technology Studio, Technology Lecture, Theory of Structures, Drawing Studio, Environmental Studies

With the intent to understand the tactile and the tectonic in the first year is largely intuitive with the emphasis of the technology as well as representation studios derive largely from observation of material realities. Natural materials and concepts of strength, rigidity and failure are best understood under the concepts of stability and equilibrium, including the basic principle of structural components are analyzed and understood. Smaller tasks as compared to large studios are preferred to understand the study of nature, form of everyday objects, material properties, techniques of the modular, monolith and hybrid concepts of construction. Hierarchy of building elements and structural forces through the art of observing as well as expressive and basic scaled drawings is the key to learning in the studio. The idea of hands-on learning is core to the technology studio whereby concepts of building are understood through both intuitive as well as structured analysis. Lastly learning from basics in environment, regional climates and their impact on the design of the vernacular to the understanding of the concept of being sustainable are at the threshold of the first years.

## The Study Trip

The First year study trip allows a learner to see the architectural object within the systems of everyday life. Through a process of careful observation, pacing and representation, students are made to look at not merely the object of architecture but also the patterns of living of a community. Sites are chosen that are usually those that are usually small villages or towns for this exploration.

## Architectural Theory

Courses: Sources of the Self (Visual Studies) , Thinking Through Form ( Architectural Theory)

The two courses of Visual Studies/College projects and Theory of Design will work in tandem. While one looks through acts of engaging students in acts of researching and documenting and representing the visual world, the other is a lecture-based course that allows for comparative, conceptual frameworks to emerge. The First Year will be an introduction to the relationship between concept/idea and form. This will be done through an exposure and discussion on formal experiments, innovations and operations in art, literature, and architecture. The course will allow a loose chronology of ideas and movements in art and architecture.

It would expose students to works and images, through film, music, literature and architecture that resonate with each other. It would also aim to sensitise students to the differences and possibilities of medium and form. It will expose students to ways of seeing, understanding architecture through the frameworks of phenomenology, structuralism, formalism, psychoanalysis and surrealism through looking at parallel works by artists and architects.

The visual studies course would engage the students in a close reading of the world that they inhabit, through acts of documentation and representation. In enabling the act of closely looking and examining and drawing.

## History Course

The first semester begins by questioning existing ideas of "What is History" and "Whose History" is shaping modern societies. Students will be introduced to the concept of social structures and the agrarian economy as the mode of production in this semester. The transition from hunter-gatherer to the agrarian mode of production enabled human control over their environment which facilitated the growth of cities and physical infrastructure thus marking these civilizations as distinct from the rest to follow.

Belief systems have played a crucial role in shaping societies across civilizations. In the second semester,

students are introduced to understand how religion has played a prominent role in defining and determining the culture of a society. Social stratification, theocratic rulership and a gradual shift from an agrarian society to the mercantile mode of production marked a visible impact on the built environment.

Tenet of Cosmology | Paradigm of belief and myth  
History of Egyptian Architecture | History of Buddhist Architecture | History of Mycenaean Architecture | history of Persian Architecture | Latin America

### Humanities Courses

The First Year humanities course will investigate the relationships between social institutions (Kinship, property, gender, religion, caste, class, etc) and space. Through a functional analysis (that explains the persistence of these institutions through latent, unintended or unrecognized functions they fulfill) it will encourage students to read and analyze human settlements and elements of the built environment.

# Semester 1

## Scheme of Teaching and Examinations

### Scheme of Teaching and Examinations Bachelor of Architecture (B. Arch.) Semester I

Sub No.	Semester I Exam conducted by individual colleges SUBJECTS	Teaching Scheme		Credits		
		Lecture	Studio	Theory	Studio	Total
101	Architectural Design Studio		4		4	4
102	Allied Design Studio		4		4	4
103	Architectural Building Construction & Materials	2	3	2	3	5
104	Theory & Design of Structures	3		3		3
105	Humanities	3		3		3
106	Environmental Studies	2		2		2
107	Architectural Representation & Detailing		3 +3		6	6
120	College projects		6		6	6
121	Elective		3		3	3
	<b>Total</b>	<b>10</b>	<b>26</b>	<b>10</b>	<b>26</b>	<b>36</b>

Sub. No.	Semester I Exam Exam conducted by individual colleges SUBJECTS	Examination Scheme			
		Theory (paper)	Internal	External viva	Total
101	Architectural Design Studio		150		150
102	Allied Design Studio		150		150
103	Architectural Building Construction	70	80		150
104	Theory & Design of Structures	50	50		100
105	Humanities	50	50		100
106	Environmental Studies		50		50
107	Architectural Representation & Detailing		100+50		150
120	College projects		100		100
121	Elective		50		50
	<b>Total</b>				<b>1000</b>

Notes: Each period shall be of 50 minutes duration and each semester shall consist of 90 days of teaching programme.

The colleges are required to arrange the time table per semester as per the teaching scheme prescribed.

# Semester 1

## Time-Table

	MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY		SATURDAY	
8.00 - 8.50	Design Studio: Architectural Design / Allied Design / ABC		Architectural Theory		Drawing Studio (ARD)		Humanities		Design Studio: Architectural Design / Allied Design / ABC			
	101+102	2+2 + 3 ABC	120	2 CP	107	6	105	2 of 3	101+102	2+2+3 CP		
8.50 - 9.40			Ankush	Sonal			Hussain	Shweta				
9.40 - 10.30	Ankush Aishwarya	Karan Mamta	Environmental Studies (EVS)		Ankush Aishwarya	Karan Mamta	History Lecture		Ankush Aishwarya	Karan Mamta	Theory and Design of Structures	
	Mansi	Sandeep	106	2	Mansi	Sandeep	105.1	2- 1 HU / 1 CP	Mansi	Sandeep	104	2 of 3
10.30 - 11.20	Shirish	Sonnal	Kimaya	Minal	Shirish	Sonnal	Ginella	Sarah	Shirish	Sonnal	Rajitha	Neeraj
11.20 - 12.00	Lunch Break											
12.00-12.50			Architectural Building Construction and Materials (2 ABC)									
			103	2 ABC+ 1 TOS								
12.50 - 1.20	Lunch Break											
1.20 - 2.10			DHarmesh Mamta									
2.10 - 3.00			Aishwarya									

<b>COURSE CODE</b>	BArch 101 a(Architectural Design)	<b>CREDITS</b>	Monday (2AD + 2 Allied + 3 ABC) Friday (2AD + 2 Allied + 3 CP) = 14
<b>COURSE NAME</b>	Architectural Design Studio	<b>SESSIONAL MARKS</b>	150 (AD) +150(ALD) + 50 (ABC)
<b>FACULTY</b>	Ankush C, Aishwarya P, Shirish J, Sonal S, Mamta P, Karan R, Sandeep M.	<b>EXAM SCHEME</b>	internal viva
<b>CLASS DAY/ TIME</b>	Mondays and Fridays 8-11:20, 12:00-12:50, 1:20- 3	<b>NON-CLASS TIME</b>	400 Minutes

**PEDAGOGIC INTENT**

*They should be equipped with a tools of communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non conventional as well as those that scientific and mathematical).*

*Memory Box 13th to 24th Dec*

While the students were forced back into a lock down early in the first few days of the year, they were asked to collect objects from their home and memories and use a small box to collect and present them back when they came to school.

*A Phantasmagoria - An exhibition of optical effects of drawing on paper 27th December to 13th JanThe impulse of this exercise emerges from an instant need for us to connect/throw the learners into their immediate outside environments and start looking at space as a three dimensional container of experiences They will further attempt at drawing out these spaces as an immersive large drawing within a space in the school. 27th Dec to 14th Jan The Grid - Shapeshifting Fruits*

*Shape Shifting Fruit 14th Jan-18Th feb*

This exercise attempts to reveal the Cartesian grid as a system that does not benignly measure the world but also one that constructs it and determines the way we see it. The exercise works towards revealing the grid as an abstract system that can transform the real. In the exercise formal operations on the grid result in transformations in form.

*Production of Space - Body, Space and Experience - Fabulations 27th Feb to 17th March*

This short introductory exercise hopes to terminate in a small theatrical production where groups of students will curate a space within the college premises using available props and materials. Generating space for a performance will allow them to use their bodies as fundamental components in the creation of a spatial experience.

**COURSE METHOD**

Each session introduces students to different methods of exploring and representing space. The course focuses on embodied and performative learning through acts of observation, drawing, making and performance.

LECT	DATE	TEACHING CONTENT	MARKS
1	13.12.21	Memory Box- Choices of objects, collection of objects.	
3	17.12.21	Memory Box- Making the box ( first draft). Lecture Presentation.	
4	20.12.21	Memory Box- Making the box (Second Draft)	
6	24.12.21	Memory Box- Final review	
7	27.12.21	Phantasmagoria- Introduction and site work.	
9	3.01.22	Phantasmagoria- Sketches Presentation and Discussion	
11	7.01.22	Phantasmagoria- Plan of Work , presentations	
12	10.01.22	Phantasmagoria- Final Work	150 (Allied Design)
14	14.01.22	Shape Shifting Fruit -making the Grid Box	
15	17.01.22	Shape Shifting Fruit - Measurement and Drawing	
17	21.01.22	Shape Shifting Fruit - Measurement and Drawing	
18	24.01.22	Shape Shifting Fruit - Making the model	
20	28.01.22	Shape Shifting Fruit Making the model	
21	31.01.22	Shape Shifting Fruit - Distorting the Grid	
23	4.02.22	Shape Shifting Fruit Distorting the Grid	
24	07.02.22	Shape Shifting Fruit - Distorting the Grid	
26	11.02.22	Shape Shifting Fruit - Making the model	

27	14.02.22	Shape Shifting Fruit - Making the Model	
29	18.02.22	Shape Shifting Fruit - Final exhibition	50 (ABC)
30	21.02.22	<i>Production of Space - Body, Space and Experience - Fabulations Introduction to the project and theatre exercises</i>	
32	25.02.22	<i>Production of Space - Body, Space and Experience - Fabulations Theatre exercises and excerpts from JG Ballard's Voices of Time given out and read aloud.</i>	
33	28.02.22	<i>Production of Space - Body, Space and Experience - Fabulations Texts . Theatre exercises with the texts. Drawing the stories.</i>	
34	02.03.22	<i>Production of Space - Body, Space and Experience - Fabulations - Collective Drawing in group of the stories</i>	
35	04.03.22	<i>Production of Space - Body, Space and Experience - Fabulations Ideas of the work</i>	
36	07.03.22	<i>Production of Space - Body, Space and Experience - Fabulations Ideas of the work and performance</i>	
37	09.03.22	<i>Production of Space - Body, Space and Experience - Fabulations - Making the work and performance</i>	
38	11.03.22	<i>Production of Space - Body, Space and Experience - Fabulations Making the work and performance</i>	
39	14.03.22	<i>Production of Space - Body, Space and Experience - Fabulations Making the work and performance</i>	
40	17.03.22	<i>Production of Space - Body, Space and Experience - Fabulations Final Performance</i>	150 (Architectural Design) + 30 (ABC)

#### LEARNING OUTCOMES

Working with abstract concepts, text, developing skills of observation, an understanding of material, of measurement, experience, scale, expressive, narrative and technical drawings.

#### READING LIST/REFERENCES

[Voices of Time, JG Ballard](#)

### CO-PO mapped syllabi of B.Arch Course 2021-2022 – Architectural Design Semester 1

#### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

#### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

#### for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the

concrete. (Abstract / Concrete.

4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Design**

**Course Code: BARC 101**

**Sem 1**

**Name Year 2021-22**

**Course Objectives:** Introduction to design as a conceptual discipline directed at the analysis, interpretation, synthesis, and transformation of the physical environment. Exercises are aimed wherein the learner will develop an understanding of the contextual issues, elements, and processes and manifestation of architectural design. The students learn to interpret, visualize, abstract, imagine 3 dimensional scenarios from a text. the abstract nature that can be captured in three dimensional model. Engaging with Light and its impact on space. Understanding mass, void and form.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To read and analyze the text as a spatial narrative.
CO2	To conceptualize and develop a design process through drawings as a response to the text-work.
CO3	To create/author an original performance work with a basic understanding of scale, movement and spatial organization and siting.
CO4	To apply techniques of construction with an appropriate material choice and construction technique.

**Rubrics: Exercise: Fabulations**

Year of Assessment: 2020-2021	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 150	Exercise 01 Marks out of	Credits	Date of submission		
FIRST YEAR - SEM 1	Architectural Design		BARC 101	150	150	4 (Arch Design)+ 1CP			
<b>Exercise: Title</b>	Phantasmagoria								
<b>Exercise Note / Task</b>	<p><i>Production of Space - Body, Space and Experience - Fabulations 27th Feb to 17th March</i></p> <p>This short introductory exercise hopes to terminate in a small theatrical production where groups of students will curate a space within the college premises using available props and materials. Generating space for a performance will allow them to use their bodies as fundamental components in the creation of a spatial experience.</p>								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% - 55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Readings and Interpretation of the text.</b>	Unique and original choice that reflects a clear understanding of the text	Unique and original choice that reflects a clear understanding of the text	Outstanding choice that reflects a clear understanding of the context.	Excellent choice that reflects a clear understanding of the text	Choice reflects a very good understanding of the text	Choice reflects a good understanding of the text	Choice reflects a fair understanding of the text	Choice reflects satisfactory understanding of the text.	Choice reflects an complete lack of effort at understanding.



<b>Explorations of the expressive possibilities of drawing</b>	Unique and original explorations of drawings Independent and fearless experimentation.	Unique and original explorations in drawing. Outstanding effort and experiments.	Outstanding explorations in drawing. Work reflects great rigour and clarity of thought	Excellent explorations through drawings. Work reflects an excellent rigour and clarity of thought	Very Good explorations through drawings. Work reflects a rigour and clarity of thought	Good explorations in drawing. Work reflects a rigour a	Fair explorations in drawing. Work reflects a fair amount of rigour	Satisfactory explorations in drawing. Work reflects a fair amount of rigour	No attempt made at explorations.
<b>Explorations of body in space, aspects of performance and spatial manipulation</b>	The process and work reflect an outstanding sensitivity to the relationship of body, performance and space, the use of site and props. The performance makes innovative and exceptional use of space/site. The work shows originality and innovation, breaking new ground.	The process and work reflect sensitivity to the relationship of body, performance and space, the use of site and props. The performance makes innovative and exceptional use of space/site.	The process and work reflect a sensitivity to the relationship of body, performance and space, the use of site and props. The performance makes a good use of space/site.	The process and work reflect a clear understanding of the relationship of body, performance and space, the use of site and props. The performance makes an appropriate use of space/site.	The process and work reflect a understanding of the relationship of body, performance and space, the use of site and props. The performance makes a satisfactory use of space/site..	The process and work reflect a fair understanding of the relationship of body, performance and space, the use of site and props. The performance makes a satisfactory use of space/site..	The process and work reflect a satisfactory understanding of the relationship of body, performance and space, the use of site and props. The performance makes a satisfactory use of space/site..	The process and work reflect a poor understanding of the relationship of body, performance and space, the use of site and props. The performance makes a satisfactory use of space/site..	The work shows a lack of engagement with site or an understanding of the performance of bodies with respect to space.

<b>Participation in group work. Rigour and effort in the collective building and performance.</b>	Takes a lead in creating an atmosphere and structure for collective work, Takes on the responsibility for the collective building and performance, teamwork and team building. Shows an outstanding sensitivity to the inclusion of ideas resulting in a complex and layered final work.	Participates in creating an atmosphere and structure for collective work, Takes on the responsibility for the collective building and performance. Shows a sensitivity to the inclusion of ideas.	Helps in creating an atmosphere and structure for collective work, Takes on the responsibility for the collective building and performance.	Participates enthusiastically in collective work, Takes on a good amount responsibility for the collective building and performance.	Participates fairly enthusiastically in collective work, Takes on a good amount responsibility for the collective building and performance.	Takes on a good amount of responsibility for the collective building and performance.	Takes on a fair amount of responsibility for the collective building and performance.	Takes on a satisfactory amount of responsibility for the collective building and performance.	A complete lack of engagement with collective work.
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CO-PO mapping for a course of “PG program”									
Sr. No.	CO description	PO 1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8
CO1	To read and analyze the text as a spatial narrative.	2	1	2	2	3	1	1	2
CO2	To conceptualize and develop a design process through drawings as a response to the text-work.	3	2	2	1	3	0	1	2
CO3	To create/author an original performance work with a basic understanding of scale, movement and spatial organization and siting.	3	3	3	3	3	0	1	2
CO4	To apply techniques of construction with an appropriate material choice and construction technique.	3	3	3	3	3	0	1	2

1 – Slight (Low) Correlation  
0 – No Correlation

2- Moderate (Medium) Correlation

3- Substantial (high) Correlation

<b>COURSE CODE</b>	BARC 102	<b>CREDITS</b>	Monday ( 4 AD+ 3 CP) = 7
<b>COURSE NAME</b>	Allied Design Studio 1	<b>SESSIONAL MARKS</b>	150 (Allied Design) + 30 ( College Projects)
<b>FACULTY</b>	Ankush C, Aishwarya P, Shirish J, Sonal S, Mamta P, Karan R, Sandeep M.	<b>EXAM SCHEME</b>	internal viva
<b>CLASS DAY/ TIME</b>	Mondays and Fridays 8-11:20, 12:00-12:50, 1:20- 3	<b>NON-CLASS TIME</b>	400 Minutes

**PEDAGOGIC INTENT**

*They should be equipped with a tools of communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non conventional as well as those that scientific and mathematical).*

*Production of Space - Body, Space and Experience - Fabulations 27th Feb to 17th March*

This short introductory exercise hopes to terminate in a small theatrical production where groups of students will curate a space within the college premises using available props and materials. Generating space for a performance will allow them to use their bodies as fundamental components in the creation of a spatial experience.

**COURSE METHOD**

Each session introduces students to different methods of exploring and representing space. The course focuses on embodied and performative learning through acts of observation, drawing, making and performance.

LECT	DATE	TEACHING CONTENT	MARKS
30	21.02.22	<i>Production of Space - Body, Space and Experience - Fabulations Introduction to the project and theatre exercises</i>	
32	25.02.22	<i>Production of Space - Body, Space and Experience - Fabulations Theatre exercises and excerpts from JG Ballard's Voices of Time given out an read aloud.</i>	
33	28.02.22	<i>Production of Space - Body, Space and Experience - Fabulations Texts . Theatre exercises with the texts. Drawing the stories.</i>	
34	02.03.22	<i>Production of Space - Body, Space and Experience - Fabulations - Collective Drawing in group of the stories</i>	
35	04.03.22	<i>Production of Space - Body, Space and Experience - Fabulations Ideas of the work</i>	
36	07.03.33	<i>Production of Space - Body, Space and Experience - Fabulations Ideas of the work and performance</i>	
37	09.03.22	<i>Production of Space - Body, Space and Experience - Fabulations - Making the work and performance</i>	
38	11.03.22	<i>Production of Space - Body, Space and Experience - Fabulations Making the work and performance</i>	
39	14.03.22	<i>Production of Space - Body, Space and Experience - Fabulations Making the work and performance</i>	
40	17.03.22	<i>Production of Space - Body, Space and Experience - Fabulations Final Performance</i>	1 5 0 (Architectural Design)+ 30 CP

**LEARNING OUTCOMES**

Working with abstract concepts, text, developing skills of observation, an understanding of material, of measurement, experience, scale, expressive, narrative and technical drawings.

**READING LIST/REFERENCES**

[Voices of Time, JG Ballard](#)

**CO-PO mapped syllabi of B.Arch Course 2021-2022 – Allied Design Semester 1**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**Outcomes for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).

4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Design**

**Course Code: BARC 102**

**Sem 1**

**Name Year**

**2021-2022**

**Course Objectives:** Introduction to design as a conceptual discipline directed at the analysis, interpretation, synthesis, and transformation of the physical environment. Exercises are aimed wherein the learner will develop an understanding of the contextual issues, elements, and processes and manifestation of architectural design. The students learn to interpret, visualize, abstract, imagine 3 dimensional scenarios from a text. the abstract nature that can be captured in three dimensional model. Engaging with Light and its impact on space. Understanding mass, void and form.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To read and analyze their own notions and experience of space
CO2	To conceptualize and develop a design process through drawings and models as a response to the text-work.
CO4	To apply techniques of spatial representation in the form of final drawings and models.

**Rubrics: Exercise 1 Phantasmagoria**

USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture									
Year of Assessment: 2021-2022									
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 150	Exercise 01 Marks out of	Credits	Date of submission		
FIRST YEAR - SEM 1	Allied Design		BARC102	150	150	4+1CP			
<b>Exercise: Title</b>	A Phantasmagoria								
<b>Exercise Note / Task</b>	<i>An exhibition of optical effects of drawing on paper 27th December to 13th Jan The impulse of this exercise emerges from an instant need for us to connect/throw the learners into their immediate outside environments and start looking at space as a three dimensional container of experiences They will further attempt at drawing out these spaces as an immersive large drawing within a space in the school.</i>								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% - 55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Readings and Interpretation of the context.</b>	Unique and original choice that reflects a deep and profound understanding of the context	Unique and original choice that reflects a clear understanding of the context	Outstanding choice that reflects a clear understanding of the context.	Excellent choice that reflects a clear understanding of the context	Choice reflects a very good understanding of the text	Choice reflects a good understanding of the context	Choice reflects a fair understanding of the text	Choice reflects satisfactory understanding of the context.	Choice reflects an complete lack of effort at understanding.

<b>Explorations of the expressive possibilities of drawing</b>	Unique and original explorations of drawings Independent and fearless experimentation.	Unique and original explorations in drawing. Outstanding effort and experiments.	Outstanding explorations in drawing. Work reflects great rigour and clarity of thought	Excellent explorations through drawings. Work reflects an excellent rigour and clarity of thought	Very Good explorations through drawings. Work reflects a rigour and clarity of thought	Good explorations in drawing. Work reflects a rigour a	Fair explorations in drawing. Work reflects a fair amount of rigour	Satisfactory explorations in drawing. Work reflects a fair amount of rigour	No attempt made at explorations.
<b>Rigour and regularity and consistency of work</b>	Shows great sensitivity and immersion in the subject. Extraordinary amount of rigour and process work. Self-relexive and iterative process work.	Outstanding rigour, effort and consistency of work. Self-relexive and immersion in iterative processes. Self-relexive and iterative process work.	Outstanding rigour, effort and consistency of work. Self-relexive and iterative process work.	Excellent rigour, effort and consistency of work.	Very good engagement with iterative processes.	Good engagement with iterative processes.	Fair amount of rigour and engagement through the process.	Satisfactory amount of rigour and engagement through the process.	Work reflect a failure to engage in the process.

CO-PO mapping									
Sr. No.	CO description	PO 1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8
CO1	To read and analyze context.	0	3	2	3	2	1	2	2
CO2	To create author an original individual work, rigorous iterative process, that responds to the site.	0	3	3	3	0	0	0	0
CO3	To apply techniques of spatial representation in the form of final drawings.	2	3	3	3	0	0	0	0

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 103	<b>CREDITS</b>	5 (Split between Architectural Design and Architectural Building construction & Materials Lecture) Credits assigned for Architectural Building Construction and Material - 2ABC + 1TOS AD includes 3ABC credits
<b>COURSE NAME</b>	Architectural Building Construction and Materials	<b>SESSIONAL MARKS</b>	(50 (AD) + 30) + 20 (TOS)
<b>FACULTY</b>	Mamta Patwardhan, Aishwarya Padmanabhan, Dharmesh Mewada	<b>EXAM SCHEME</b>	Internal (70)
<b>CLASS DAY/TIME</b>	TUESDAY, 12:00pm to 3:00 pm	<b>NON-CLASS TIME</b>	3

<b>PEDAGOGIC INTENT</b>	This course intends to look at the subject of Building Construction as a story of how individual elements and components in architecture are articulated together to create assemblies that in relation to the form of the architectural object ultimately informs the tectonic expression. The tectonic expression being an externalized projection of meaning of the building, lends itself to be experienced by the body/ bodies that inhabit it, thereby imprinting itself in the consciousness of the user, who in turn affect it by their sheer presence. In the first year, the tectonic is observed and understood through materials and their materiality or even their material-realities. The course recognizes how factors such as the context, cost, inherent properties of materials, skills available and the market dynamics affect how we as architects come to choose materials which we use to write stories of/ for those we design for.
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<b>OBJECTIVES</b>	Understanding of how tectonic and stereotomic expressions can enrich and define the spatial qualities in architecture.
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<b>COURSE METHOD</b>	Material characteristics of enclosure and structural systems, Case studies in traditional assemblies/ the vernacular and modern building construction. Introduction to properties of building materials: wood, masonry concrete, steel and glass construction techniques; on-site and off-site processes; exterior finishes; assemblies, detailing. The course includes a studio component where in, construction is seen in relationship with the mechanical behaviour of materials and individual elements as well as the structural flow of load transfer from one element to the other. The Architectural Building construction and materials course of
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the First Year therefore makes references to the course of Theory and Design of Structures as a way of understanding the dynamics of load transfer.

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
Week 1	28/01/2021	Introduction to Building Material and Construction. Understanding the term 'Tectonics' and its relationship to materials in building construction. Presentation of Fundamental segments of the building – Sub-structure and superstructure.		
Week 2	04/02/2021	Introduction to the various Systems and principles of buildings along with the understanding of load transfer. The intent is to introduce the overall before dividing the systems into its parts and components that play individual roles. Explanation of load bearing and trabeated systems.		
Week 3	11/02/2021	Introduction to the various Systems and principles of buildings along with the understanding of load transfer. The intent is to introduce the overall before dividing the systems into its parts and components that play individual roles. Introduction of timber framework, steel framework, RCC framed structures, pneumatic, tensile and pre-fab. The intent of this segment is to let the students to intuitively identify the systems should they observe one.		
Week 4	18/02/2021	Introduction to the parts and components of the buildings that are articulated to formulate the building system – walling, spanning, fenestration,		

		architectural elements, openings, etc.	
Week 5	25/02/2021	Introduction to the parts and components of the buildings that are articulated to formulate the building system – walling, spanning, fenestration, architectural elements, openings, etc.	
Week 6	04/03/2021	Introduction to the parts and components of the buildings that are articulated to formulate the building system – walling, spanning, fenestration, architectural elements, openings, etc.	
Week 7	11/03/2021	Case studies of indigenous assemblies that are a combination of load bearing/trabeated and timber framed structures.	Exercise – Piling, stacking, Locking – Experiments with masonry units, (i) Stacking of stretchers vertically without bonding, (ii) stacking of headers vertically without bonding (iii) stacking of stretchers + addition of patli beam, (iv) stacking of stretchers + addition of patli beam + changing ground surface
Week 8	18/03/2021	Detailed understanding of masonry units, inherent properties, defects, costing, structural capacity and the articulation of the units into walling systems	
Week 9	25/03/2021	Detailed understanding of masonry walling systems,	Exercise – Corbels and cantilevers

	introduction to partition walls, transparent walls, etc.
<b>LEARNING OUTCOMES</b>	Establish a foundation to the technology sequence through a fundamental understanding of the reciprocal relationships between space, material and structure under a holistic approach.
<b>READING LIST/ REFERENCES</b>	<ul style="list-style-type: none"> <li>1] Building Construction : METRIC VOLUME 1&amp;2 BY W.R.McKAY;</li> <li>2] Building Construction by S.C. Rangwala;</li> <li>3] Building Construction Illustrated Book by Frank Ching Download link : <a href="https://archive.org/details/FrancisD.K.ChingBuildingConstructionIllustratedWiley2014">https://archive.org/details/FrancisD.K.ChingBuildingConstructionIllustratedWiley2014</a></li> <li>4] Building Construction Handbook Seventh edition R. Chudley</li> <li>5] Brick Work by Laurie Baker Download Link : <a href="http://costford.com/Brick%20work.pdf">http://costford.com/Brick%20work.pdf</a> ,</li> <li>6] Rural House plans by Laurie Baker . Download link : <a href="http://www.costford.com/Rural%20House%20Plans.pdf">http://www.costford.com/Rural%20House%20Plans.pdf</a></li> <li>7] Shigeru Ban Projects 8] The Modulor by Le Corbusier</li> <li>8] Structure and Architecture by Angus MacDonald</li> <li>9] The making of the modern architect and Engineer by Ulrich Pfammatter</li> <li>10] Form and Structure in Architecture by Alexander Zannos</li> </ul>



**CO-PO mapped syllabi of B.Arch Course 2021-2022 – Architectural Building Construction and Materials**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**Os for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Building Construction and Materials**

**Course Code: BARC 103**

**Sem 1**

**First Year**

**Course Objectives:**

This course intends to look at the subject of Building Construction as a story of how individual elements and components in architecture are articulated together to create assemblies that in relation to the form of the architectural object ultimately informs the tectonic expression. The tectonic expression being an externalized projection of meaning of the building, lends itself to be experienced by the body/ bodies that inhabit it, thereby imprinting itself in the consciousness of the user, who in turn affect it by their sheer presence. In the first year, the tectonic is observed and understood through materials and their materiality or even their material-realities. The course recognizes how factors such as the context, cost, inherent properties of materials, skills available and the market dynamics affect how we as architects come to choose materials which we use to write stories of/ for those we design for.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Understanding the role of Building elements in a system of construction that follow the mechanical behaviour of individual elements as well as the structural transfer of loads from one element to the other
CO2	Understanding the properties of materials such as brick and wood, their relevance, and their application to the load-bearing and timber framework tectonic systems, respectively.
CO3	Analytical understanding of load-bearing systems
CO4	Context-specific learnings of a Tectonic systems and principles through the articulation of materials
CO5	Evaluation of structural articulation of representational materials such as erasers, wooden blocks and watchmaker sticks towards attaining equilibrium.

Rubrics:

USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture									
Year of Assessment : 2021-2022	Subject: Architectural Building Construction and Materials	University Subject Code	Sessional Marks:	Exercise 01: Marks out of	Credits	Date of submission	Upgrade 01	Upgrade 02	
FIRST YEAR - SEM 1		103	80 (Internal)		Studio (3) + Lecture (2) = 5	Multiple			
Exercise: Title	Tectonic Experiments through Building construction and systems								
Exercise Note / Task	A comprehensive understanding of building systems and principles of construction based on locally available materials, skills and climatic conditions. The students are also expected to draft detailed construction plates, highlighting the materials and the details they choose use. The course also includes presentation of a student's understanding of materials and construction techniques through reports.								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Data Gathering/ monitoring and collating	All data to be collected from reliable sources with references included in the reports. Exceptional in showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected.	All data to be collected from reliable sources with references included in the reports. Showcasing well outstanding insights adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing Outstanding insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Data collected is from adequate sources with most references included in the reports. Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Data collected is from adequate sources with most references included in the reports. Showcasing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Generic methods of analysis	Not informed process of adaptation of tools and frameworks

Depth of Inquiry and ability to generate analytical drawings	Exceptional analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Well curated outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Very well curated outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Excellent curation using outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation.	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent.	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent.	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
Representation Technique and final submission	Final presentation is complete with all process, concept, process and logic represented in original and innovative ways. The presentation is self-explanatory and shows an outstanding level of skill in arranging and organisation. The drawings and models are consistently of outstanding quality.	Final presentation is complete with all process, concept, process and logic represented in innovative ways. The presentation is self-explanatory and shows an outstanding level of skill in arranging and organisation. The drawings and models are fairly consistently of excellent quality.	Final presentation is complete with all process, concept, process and logic represented. The presentation is self-explanatory and shows an outstanding level of skill in arranging and organisation. The drawings and models are fairly consistently of excellent quality.	Final presentation is complete with all process, concept, process and logic represented. The presentation is self-explanatory and shows an excellent level of skill in arranging and organisation. The drawings and models are fairly consistently of excellent quality.	Final presentation is complete with all process, concept, process and logic represented. The presentation is self-explanatory and shows very good levels of skill in arranging and organisation. The drawings and models are fairly consistently of good quality.	Final presentation is complete with all process, concept, process and logic well represented. The presentation is self-explanatory and shows good levels of skill in arranging and organisation. The drawings and models are fairly consistently of good quality.	Final presentation is complete with a fair amount of process, concept, process and logic represented. The presentation is self-explanatory and shows good levels of skill in arranging and organisation. The drawings and models show a fair amount of clarity and skill.	Final presentation is complete with a satisfactory amount of process, concept, process and logic represented. The presentation is self-explanatory and shows satisfactory levels of skill in arranging and organisation. The drawings and models are of a satisfactory quality.	Final presentation is incomplete with the process, concept, process and logic not represented clearly. The presentation is unclear and illogical and shows poor levels of skill in arranging and organisation. The drawings and models are of poor quality.
Model Making and Analysis	The models display an enthusiasm and effort to take on challenging and difficult levels of resolution. They break new ground in terms of their innovation and inventiveness and effort. They are exquisitely constructed, with a innovative and sophisticated understanding of material, structure, technique.	The models display an enthusiasm and effort to take on challenging levels of resolution. They are innovative and inventive and display outstanding effort. They are excellently constructed, with a clear understanding of material, structure, technique.	The models display excellent effort and rigour. They are well constructed, with a clear understanding of material, structure, technique.	The models display a very good effort and rigour. They are well constructed, with a clear understanding of material, structure, technique.	The models display a good effort and rigour. They are well constructed, with a clear understanding of material, structure, technique.	The models display a fair amount effort and rigour. They are constructed, with a fair understanding of material, structure, technique.	The models display a satisfactory amount effort and rigour. They are constructed, with a satisfactory understanding of material, structure, technique.	The models display a lack of effort or rigour. They are poorly constructed, with no understanding of material, structure, technique.	

	structure, technique.									
<b>Ability to demonstrate the Learnings from the discussions conducted in class</b>	Showcasing 100% ability to translate theoretical knowledge into practice	Showcasing 90% ability to translate theoretical knowledge into practice	Showcasing 80% ability to translate theoretical knowledge into practice	Showcasing 70% ability to translate theoretical knowledge into practice	Showcasing 65% ability to translate theoretical knowledge into practice	Showcasing 60% ability to translate theoretical knowledge into practice	Showcasing 55% ability to translate theoretical knowledge into practice	Showcasing 50% ability to translate theoretical knowledge into practice	Zero understanding and application of theoretical knowledge	
<b>Attendance and participation in the discussions</b>	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence	

COPO Mapping Setup for Sem 1, 2021-2022

CO-PO mapping for a course of B. Arch First Year Architectural Building Construction and Materials									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Understanding the role of Building elements in a system of construction that follow the mechanical behaviour of individual elements as well as the structural transfer of loads from one element to the other	2	3	3	0	2	3	3	2
CO2	Understanding the properties of materials such as brick and wood, their relevance, and their application to the load-bearing and timber framework tectonic systems, respectively.	3	3	3	0	0	3	3	2

CO3	Analytical understanding of load-bearing systems	2	3	3	0	0	1	3	0
CO4	Context-specific learnings of a Tectonic systems and principles through the articulation of materials	3	3	3	3	3	3	3	3
CO5	Evaluation of structural articulation of representational materials such as erasers, wooden blocks and watchmaker sticks towards attaining equilibrium.	3	3	3	1	3	1	3	0

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC104	<b>CREDITS</b>	3
<b>COURSE NAME</b>	Theory and Design of structures - 1	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Rajitha Gopinath, Neeraj Vakharia	<b>EXAM SCHEME</b>	Theory exam - 50 marks
<b>CLASS DAY/TIME</b>	9:40 – 11:20	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	To think in architecture, to feel in structure-by encouraging analytical thinking, understanding of structural principles and, finally, attempting to try something new and unconventional (an experiment) in the studio
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<b>COURSE METHOD</b>	Experimental Learning with discussions and problem solving to understand the basics of structural systems. Confucius exemplified this wisely: "I hear, and I forget. I see and I remember. I do and I understand"
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
week 1	08/01/2022	Theory of structures: Introduction		
week 2	15/01/2022	Analysing existing buildings through the reference of "Form follows function" or "Form follows structure".		
week 3	22/01/2022	Introduction to nature and types of forces	Exercise	
week 4	29/01/2022	<i>External Loading and Internal stresses</i>		
week 5	05/02/2022	Types of Support & Loading Conditions		
week 6	12/02/2022	<i>Previous topic and numerical</i>		
week 7	26/02/2022	Center of Gravity		
week 8	05/03/2022	Moment of Inertia	Exercise	
week 9	12/03/2022	Exercise Review		

<b>LEARNING OUTCOMES</b>	Structuring should offer the student of architecture information about the beauty of construction, how the construction lives and how it resists the pressure of gravity. In the end, a student must have a rational answer to all the why? questions. An architect should feel what is going on in a structure without needing to count it exactly.
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<b>READING LIST/ REFERENCES</b>	1) Why Buildings Stand Up by Mario Salvadori 2) Eccentric Structures in Architecture by Joseph Lim 3) Theory of Structures by R.S. Khurmi
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – *Theory and Design of Structures 1*

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project.
6. To enable the student to observe, experience, analyze space, its physicality, and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design.
8. To enable the student to break the boundary between abstract thought and material realities.
9. To enable students to discover multiple methods and tools to develop their own process of learning.
10. To engage the student in collective work to build a sense of shared responsibility.

### Os for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Theory and Design of Structures 1**

**Course Code: BARC 104**

**Sem 1**

**First Year**

**Course Objectives:**

- Develop analytical thinking skills and a deep understanding of the principles and fundamentals of structural design in architecture.
- Explore the relationship between architecture and structure, encouraging students to think critically and creatively to achieve unconventional and experimental design solutions with identifying and examining structural systems in nature, exploring their forms, functions, and lessons that can be applied to architectural design.
- Understand the mechanics of structures, including the reasons why things don't fall down and the ways in which structural systems create inner space and analyze and comprehend different types of loads acting on structures, including their effects, units, and conditions of equilibrium.
- Gain knowledge of the forces and moments that occur in structures, including their definitions, causes, effects, and units.
- Develop an understanding of the concept of center of gravity and its significance in the stability and balance of structures.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To develop a deep appreciation for the beauty and aesthetics of construction, recognizing the harmony between structural design and architectural expression.
CO2	To gain a thorough understanding of how construction techniques and materials interact to resist the forces of gravity, enabling students to explain the underlying principles and mechanisms.
CO3	To cultivate a rational approach to structural design by providing logical answers to questions, demonstrating an understanding of the structural behavior and performance of building elements and systems on an intuitive and experiential level.
CO4	To foster the ability to intuitively perceive and feel the behavior of structures, enabling architects to develop an innate sense of how forces flow and interact within a building.

**Rubrics:**

USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture									
Year of Assessment : 2021-2022	Subject:	Subject Code	University Subject Code	Sessional Marks	Exercise 01: Marks out of	Credits	Date of submission	Upgrade 01	Upgrade 02
FIRST YEAR - SEM 1	TDOS1	BARC 104	104	50	50	3	Multiple		
Exercise: Title	Experiments to understand various forces, loads, geometry and types of structural systems								
Exercise Note / Task	Report of the exercise and readings from experiments								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
Depth of Inquiry and ability to think intuitively	Exceptional analytical drawings and clarity in explaining the concept and architectural design intent	Well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Excellent curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
Exploring & designing	Showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing well outstanding insights adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing Outstanding insights using tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Generic methods of analysis	Not informed process of adaptation of tools and frameworks

<b>Compilation for Report and readings</b>	Very well formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Well formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Clear formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Very good formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Good formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Fairly formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Barely managed to get clarity of intent and study using poor diagrams and sketches	Less clarity in terms of ideas and processes to be followed	Absolute no clarity of thought and understanding of the subject
<b>Ability to demonstrate the Learnings from the discussions conducted in class</b>	Showcasing 100% ability to translate theoretical knowledge into practice	Showcasing 90% ability to translate theoretical knowledge into practice	Showcasing 80% ability to translate theoretical knowledge into practice	Showcasing 70% ability to translate theoretical knowledge into practice	Showcasing 65% ability to translate theoretical knowledge into practice	Showcasing 60% ability to translate theoretical knowledge into practice	Showcasing 55% ability to translate theoretical knowledge into practice	Showcasing 50% ability to translate theoretical knowledge into practice	Zero understanding and application of theoretical knowledge
<b>Attendance and participation in the discussions</b>	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence

COPO Mapping Setup for Sem .....1

Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Developing an intuitive understanding of the relevant rules of physics in the context of structural behavior.	2	3	0	0	0	0	2	2
CO2	To gain a thorough understanding of how construction techniques and materials interact to resist the forces of gravity, enabling students to explain the underlying principles and mechanisms.	0	1	1	2	0	0	2	0
CO3	Gaining a basic understanding of the process of structural design for simple and complex structural systems.	2	2	1	1	0	1	3	0
CO4	Understanding the unique roles of architects and structural designers in the process of architectural design and construction and the interaction between the two	0	0	0	0	1	2	0	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 105 (2 CP Humanities, 1 CP history)	<b>CREDITS</b>	3
<b>COURSE NAME</b>	HUMANITIES (2021-22)	<b>SESSIONAL MARKS</b>	50 MARKS
<b>FACULTY</b>	Hussain, Shweta, Ginella, Sarah	<b>EXAM SCHEME</b>	THEORY PAPER 50 MARKS
<b>CLASS DAY / TIME</b>	Thursday 8 am	<b>NON-CLASS TIME</b>	2 hours

**COURSE 1: Humanities**

<b>COURSE CODE</b>	BARC 105	<b>CREDITS</b>	2
<b>COURSE NAME</b>	HUMANITIES (2021-22)	<b>SESSIONAL MARKS</b>	50 MARKS
<b>FACULTY</b>	Hussain, Shweta	<b>EXAM SCHEME</b>	
<b>CLASS DAY / TIME</b>	Thursday 8 am	<b>NON-CLASS TIME</b>	

<b>COURSE DESCRIPTION</b>	This course will enable students to think about some commonly used terms as 'concepts', and to examine them through binary constructions. Through this 'dialectical' method, students will learn how to develop concepts theoretically. Through the course students will also learn to seek understanding of particular phenomena through the use of general concepts.
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<b>PEDAGOGIC INTENT / LEARNING OBJECTIVES</b>	1) Thinking about particular phenomena through general concepts 2) Using the dialectical method to investigate ideas 3) Exploring ideas through debate and to articulate them in written form
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<b>COURSE METHODOLOGY</b>	The course will be a weekly lecture and discussion seminar - 2 hours per session. Each binary construction will take up two sessions. Each class will consist of different types of reading, writing and debating exercises.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS
1	23 <sup>rd</sup> Dec	Introduction: the dialectic as a method	
2	30 <sup>th</sup> Dec	Self and society	
3	6 <sup>th</sup> Jan		
4	13 <sup>th</sup> Jan	Past and present	
5	20 <sup>th</sup> Jan		
6	27 <sup>th</sup> Jan	Nature and Culture	
7	3 <sup>rd</sup> Feb		
8	10 <sup>th</sup> Feb	Scared and profane	
9	17 <sup>th</sup> Feb		
10	24 <sup>th</sup> Feb	Purity and pollution	
11	3 <sup>rd</sup> Mar		
12	10 <sup>th</sup> Mar	Concluding seminar	

<b>EVALUATION CRITERIA</b>	The assignment (case study) will be given 75% of the weight. Class participation will be given 25% of the grade.
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**COURSE 2: History**

<b>COURSE CODE</b>		<b>CREDITS</b>	
<b>COURSE NAME</b>	History	<b>SESSIONAL MARKS</b>	
<b>FACULTY</b>	Ginella George, Sarah George	<b>EXAM SCHEME</b>	None
<b>CLASS DAY/TIME</b>	Thursday/ 9.40 – 11.20am	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	TENET OF COSMOLOGY   PARADIGM OF BELIEF AND MYTH History of Egyptian Architecture   History of Buddhist Architecture   History of Mycenaean Architecture   History of Persian Architecture   Indian Temples The history of architecture for first three years needs to correspond to the larger pedagogic structure of theory and design learning i:e Spatial, Conceptual, Critical aspects of history of architecture. These aspects required to be mobilized through various spectrums of thoughts. Instead of learning history of architecture through time line, it is proposed to establish learning through simultaneous geographical section.
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<b>COURSE METHODOLOGY</b>	The objective of the course is to bridge the distance between history as a construction of cultural identities and history as a material expression of the built object. The course attempts to discuss the ideas that lead to a production of architecture. History is thus, seen and discussed as an understanding of processes - an intersection of belief, technology and social structure.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	23/12/2021	Introduction		
2	06/01/2022	"What is History ?- Introduction to the study of History - Why do we study history of architecture , History as progress, Hyperreality "		
3	13/01/2022	Introduction to the Agrarian Economy		
4	20/01/2022	Nature Worshippers - Layout of Indus city - Great granary		
5	27/01/2022	God spoke to the priests – Male order - Indian Caste System - Vedas - Progeny - Divine Rights Theory		
6	03/02/2022	Assignment Introduction – Writing a Personal History through an heirloom		
7	10/02/2022	Working class & Discussion – Writing a Personal History through an heirloom		
8	17/02/2022	Working class & Discussion – Writing a Personal History through an heirloom		
9	24/02/2022	Working class & Discussion – Writing a Personal History through an heirloom		
10	03/03/2022	Final Submission – Writing a Personal History through an heirloom		
11	10/03/2022	Buddhist Architecture Body-Movement-Space, Monastery		
12	17/03/2022	Buddhist Architecture Rock cut architecture – caves, viharas, stupas		

<b>LEARNING OUTCOMES</b>	1. Understanding Architecture as an outcome of socio cultural processes 2. Writing Architectural History 3. Unpacking history as interpretations rather than a sacred record
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<b>READING LIST/ REFERENCES</b>	1. Brown, Percy. Indian Architecture (Buddhist And Hindu Period). Read books (2 <sup>nd</sup> ed. Edition 2010) 2. Flectcher, Bannister, Sir. History of Architecture, Oxford: Architectural Press, (1996)
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**CO-PO mapped syllabi of B.Arch Course 2021-22 – HUMANITIES 1**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. (Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Humanities**  
**Course Code: BARC105**  
**Sem 1**

**Course Objectives:**

- 1) Thinking about particular phenomena through general concepts
- 2) Using the dialectical method to investigate ideas
- 3) Exploring ideas through debate and to articulate them in written form

**Course: History** **Sem: 1** **First Year**

**Course Objectives:**

- To understand architecture as an outcome of socio cultural processes.
- To unpack histories as interpretations rather than as a text.
- To write an architectural history.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To analyze particular phenomena through general concepts
CO2	Using the dialectical method or relational ideas to investigate phenomena
CO3	Exploring ideas of social theory through debate and to articulate them in written form
CO4	Enabling the student to question the role and purpose of history in architecture
CO5	Understanding the agrarian mode of production and social structures



Rubrics 1 :

Year of Assessment: 2021-22	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks:	Exercise 01 : Marks out of	Credits	Date of submission		
FIRST YEAR - SEM 1	Hum		BARC105	50	50	2			
<b>Exercise: Title</b>	Class case study presentations								
<b>Exercise Note / Task</b>	Present a case-study in groups in an audio-visual format								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>(A) Interpretation of Case Study</b>	Excellent understanding of the case, ability to identify the determinants and explain them lucidly, is able to connect the case to contemporary examples	Very good understanding of the case, ability to identify the determinants and explain them well, is able to connect the case to contemporary examples	good understanding of the case, ability to identify the determinants and explain them competently	good understanding of the case, ability to identify the determinants and explain them adequately	A fair understanding of the case, ability to identify the determinants and explain them adequately	A fair understanding of the case, ability to identify the determinants	An minimal understanding of the case, somewhat able to identify determinants	An minimal understanding of the case,	Little or no understanding of the case
<b>(B) Presentation Quality as a whole</b>	Outstanding organization of the presentation, exceptionally clear presentation combined with creative use of visual aids	Exceptionally well structured, exceptionally clear presentation combined with creative use of visual aids	Well structured, exceptionally clear presentation combined with good use of visual aids	Very Clear presentation, combined with good use of visual aids	Well organized presentation, combined with competent use of visual aids	Manage to convey the ideas adequately	Some difficulty in expressing ideas, acceptable	Difficulty in explaining	poorly constructed and unable to convey ideas
<b>(C) Participation and conduct in class</b>	90% attendance or more, active participation in class and excellent conduct overall	90% attendance or more, good participation in class and very good conduct overall	80% - 90% attendance, active participation in class and excellent conduct overall	80% - 90% attendance, good participation in class and very good conduct overall	70% -80% attendance, active participation in class and excellent conduct overall	70% -80% attendance, good participation in class and very good conduct overall	50% - 70% attendance	50% - 70% attendance	50% attendance or less

Rubrics :

Year of Assessment: 2017-2018	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture									
Year & Sem	Subject:	University Subject Code	Sessional Marks:	Exercise 01: Marks out of	Credits	Date of submission				
FIRST YEAR – Sem 1	History	BARC 105	50	50	1HU + ICP					
<b>Exercise: Title</b>	Writing Family Histories									
<b>Exercise Note / Task</b>	Using an heirloom the student has to write their family history									
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>	
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>	
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0	
<b>Area of Evaluation</b>										
<b>Description of the object under consideration through drawing, text etc.</b>	1) Extremely articulate in framing parameters. 2) Very clear structure for presentation. 3) Well researched	1) Very articulate in framing parameters . 2) Clear structure for presentation. 3) Well researched	1)Clear and Articulate in framing parameters. 2) Well researched structure for presentation.	1) There is clarity in the parameters.2 ) Research and structure for presentation is fairly good.	1) The parameter are fairly good 2) Research and structure for presentation can be better.	1) The parameters are good 2) Research and structure for presentation is fair.	1) There is clarity in the parameters. 2) Research and structure for presentation is found lacking	1)There is potential for the parameters but needs more clarity. 2) No research and structure for presentation	Non submission	
<b>Participation in class</b>	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes	

CO-PO mapping										
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	
CO1	To analyze particular phenomena through general concepts	3	3	2	1	2	2	1	1	
CO2	Using the dialectical method or relational ideas to investigate phenomena	2	3	1	2	2	2	1	1	
CO3	Exploring ideas of social theory through debate and to articulate them in written form	3	3	2	2	2	3	1	1	
CO4	Enabling the student to question the role and purpose of history in architecture	3	3	3	1	0	3	1	3	
CO5	Understanding the agrarian mode of production and social structures	0	0	1	2	0	3	2	2	

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	EVS1	<b>CREDITS</b>	2
<b>COURSE NAME</b>	ENVIRONMENTAL STUDIES I	<b>SESSIONAL MARKS</b>	50 marks per semester
<b>FACULTY</b>	KIMAYA K, MINAL Y	<b>EXAM SCHEME</b>	Internal
<b>CLASS DAY/TIME</b>	TUESDAY   09.40-11.20 IST	<b>NON-CLASS TIME</b>	2 hours per week

<b>PEDAGOGIC INTENT</b>	<p>To explore concepts such as natural resources, the relationship between built environments and their natural setting, agro-ecological systems, traditional farming practices, self-sustaining landscapes, urban biodiversity, habitats, forest foods, urban foodscapes and the role these could play in building resilient systems.</p> <p>To critically inquire the perceptions, ideologies, philosophies and movements concerning the natural environment; including the politics of the environment and the environmental movements, from carbon trading to conservation, sustainability and green consumerism.</p> <p>To look at architecture as a response to the bio-geo-climatic conditions is dealt with in detail through the lectures through the use of appropriate case examples.</p>
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<b>COURSE METHODOLOGY</b>	<p>The course will primarily be conducted through a series of Case Study based Lectures each with a theme of understanding the larger environment and looking at Architecture as a response to the environment.</p> <p>The interactions are intended to be conducted like a 'virtual studio' with a series of hands-on practical exercises and projects where students will be asked to rethink and suggest alternatives to conventional systems.</p> <p>Through these projects combined with virtual neighbourhood walks, case study lectures, screenings and discussions, the course will include a demonstration of ecological farming practices with a series of hands-on practical exercises (which can be conducted at home) and projects where students will be asked to rethink and suggest alternatives to conventional systems. It will also evaluate the immense potential of these systems if scaled up to occupy urban green space at the neighbourhood, community or city level.</p>
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	21/12/2021	Introduction to the Environmental Studies Documentary Screening: ' Home' by Yann Arthus		
2	28/12/2021	The Story of Humans- Prehistory to the Present Climate Crisis	Assignment of writing- Thoughts on Environment	100%
3	04/01/2022	Biodiversity and Food Chains		
4	11/01/2022	Permaculture and Urban Food Movements		
5	18/01/2022	Bio-climatic Zones of the World and India		
6	25/01/2022	Architecture and Climate: responses to Bio- climatic Zones-part 1 Introduction to Climate composition and its relevance in Architecture		
7	01/02/2022	Architectural Responses to Bio-climatic Zones-part 2 Specific Strategies with case examples		
8	08/02/2022	Climate and Materials		
9	15/02/2022	Introduction to Passive Design Techniques		
10	22/02/2022	Introduction to Passive Design Techniques		
11	01/03/2022	Introduction to Micro climate, Urban Heat island Effect and site strategies		
12	08/03/2022	Condonation + Discussion		

<b>LEARNING OUTCOMES</b>	<p>The course will equip the students to:</p> <p>I) create a better understanding of environmental issues around them</p> <p>II) critically analyse contemporary environmental approaches and practices</p> <p>III) illustrate the human-environmental interdependency and be able to analyse the shifting responses over time</p>
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<b>READING LIST/ REFERENCES</b>	Environment & Urbanization Copyright © 2008 International Institute for Environment and Development (IIED). Landscape of Man by Geoffery Jellicoe
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – Environmental Studies

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course:** Environmental Studies 1  
**Course Code:** BARC 106  
**Sem 2**  
**Year 21-22**

**Course Objectives:**

The Environmental Studies Course will explore the concepts such as biodiversity, ecological footprint and ecosystem services and how habitat acts as an integral part of these. This course will provide a space for the student to explore the interrelationship between habitat, community, environment, and topography with a focus on principles of sustainable and environment-sensitive design along with biodiversity creation and restoration.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To explore concepts such as natural resources, the relationship between built environments and their natural setting, agro-ecological systems, traditional farming practices, self-sustaining landscapes, urban biodiversity, habitats, forest foods, urban foodscapes and the role these could play in building resilient systems.
CO2	To critically inquire the perceptions, ideologies, philosophies concerning the natural environment; from carbon trading to conservation, sustainability and green practices.
CO3	To understand nature and built, and look at architecture as a response to the bio-geo-climatic conditions.
CO4	To engage with and apply the ideas and concepts that have shaped environment-sensitive architectural thinking.

**Rubrics:**

Year of Assessment : 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	University Subject Code	Sessional Marks :	Exercise 01: Marks out of	Credits:	Date of submission	Upgrade 01	Upgrade 02	
FIRST YEAR SEM 1	EVS	BARC 106	50	50	2	04.01.2022			
Exercise: Title	Tectonic and climate in architecture: Case Study								
Exercise Note / Task	Prepare composed panel (A1/A3 size) on case studies representing environment responsive architecture								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
<b>Understanding of environment and their integration with other systems as well as with space</b>	1)Complete understanding of systems 2)its integration with other system 3) its hierarchy in planned space	1)Very good understanding of systems 2)its integration with other and its position in planned space.	Good understanding of systems and its integration and its position in planned space.	Fairly good understanding of systems and its integration and its position in planned space.	1)Understanding of system is seen along with other systems 2) lacking spatial integration.	1)Lesser understanding of system is seen along with other systems 2) lacking spatial integration.	1)Poor understanding of system. 2)No understanding of integration with other systems.	Extremely poor understanding of system.	Non-Submission
<b>Representation Technique and final submission</b>	Logical and semantic representation	Logical representation	Good representation in all aspect	Good representation in all aspect	Fairly represented in all aspect	The drawings could be understood	Representation needed clarification	Drawings not clear enough	Non-Submission

<b>Attendance, time management and participation in Studio</b>	Attends 95% of total classes	Attends 90% of total classes	Attends 85% of total classes	Attends 80% of total classes	Attends 75% of total classes	Attends 70% of total classes	Attends 60% of total classes	Attends 55% of total classes	Attends less than 50% of total classes
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COPO Mapping Setup for Sem 1

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To explore concepts such as natural resources, the relationship between built environments and their natural setting, agro-ecological systems, traditional farming practices, self-sustaining landscapes, urban biodiversity, habitats, forest foods, urban foodscapes and the role these could play in building resilient systems.	3	2	2	1	1	1	1	1
CO2	To critically inquire the perceptions, ideologies, philosophies concerning the natural environment; from carbon trading to conservation, sustainability and green practices.	3	2	2	1	1	1	1	1
CO3	To understand nature and built, and look at architecture as a response to the bio-geo-climatic conditions.	1	2	2	2	1	1	3	2
CO4	To engage with and apply the ideas and concepts that have shaped environment-sensitive architectural thinking.	1	1	3	1	2	2	3	2

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 107	<b>CREDITS</b>	6
<b>COURSE NAME</b>	Architectural Representation and Detailing-I	<b>SESSIONAL MARKS</b>	150
<b>FACULTY</b>	ANKUSH, KARAN, AISHWARYA, MAMTA, MANSI, SANDEEP, SHIRISH, SONAL	<b>EXAM SCHEME</b>	INTERNAL
<b>CLASS DAY/TIME</b>	8:00 to 11:20 am, 46 hours	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	Developing the ability to visualize and learn hand-drafting skills
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<b>COURSE METHODOLOGY</b>	The course is an introduction to the technical tools for representation. It is a working studio and all course work will be completed in the studio hours. The course will cover orthographic projections, axonometric, isometric and perspective projections as a method to draw and represent spaces. The mode of teaching will be through combination of lectures and studio. The assignments will introduce variations into drawing the objects/ space so that each student generates solutions unique to their designs.
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LECT	DATE	TEACHING CONTENT
1	15-12-2021 WEDNESDAY	Introduction to Drafting- Line-weight
2	22-12-2021 WEDNESDAY	Lettering exercise
3	29-12-2021 WEDNESDAY	Tilted cube -Orthographic Projection
4	05-01-2022 WEDNESDAY	Tilted cube -Orthographic Projection
5	12-01-2022 WEDNESDAY	Truncated Pyramid -Orthographic Projection
6	19-01-2022 WEDNESDAY	Truncated Pyramid-Orthographic Projection
7	26-01-2022 WEDNESDAY	Truncated Pyramid-Model
8	02-02-2022 WEDNESDAY	Surface Development- Roof- Plan + Section
9	09-02-2022 WEDNESDAY	Surface Development- Roof- Plan + Section
10	16-02-2022 WEDNESDAY	Surface Development- Roof- Axonometric
11	23-02-2022 WEDNESDAY	Surface Development- Roof- Model
12	02-03-2022 WEDNESDAY	Surface Development- Roof- Model Working Studio

13	09-03-2022 WEDNESDAY	Revision + Submission Week
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<b>LEARNING OUTCOMES</b>	The students should be able to learn how to use the instruments and tools for drafting and model making, to be able to imagine and represent a 3 dimensional object/ space on paper through the taught methods.
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**CO-PO mapped syllabi of B.Arch Course 2021-2022 – Architectural Representation and Detailing I**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive ways of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete)
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. (Self / Other)

5. To instill in students, the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Representation and Detailing 1**

**Course Code: BARC 107**

**Sem I**

**First Year**

**Course Objectives:**

This term the course moves beyond the problems of representing space and form through conventional architectural drawing techniques into drawing as an operative or constructive act. It exposes students to techniques of constructing and representing complex curved forms using techniques of orthographic projections, and the making of physical models.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Understand the techniques and methods for a comprehensive architectural representation.
CO2	Enable students to learn how to use tools for representing spatial ideas, like drafting and model making.
CO3	Enable students to create, and manipulate three dimensional form and space by use the tools of representation.
CO4	Facilitate students to create orthographic projections, axonometric and isometric tools of representation of architecture.
CO5	

Rubrics:

USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture										
Year of Assessment: 2020-2021	Subject: Architectural Representation and Detailing I	University Subject Code	Sessional Marks:	Exercise 01: Marks out of	Credits	Date of submission	Upgrade 01	Upgrade 02		
FIRST YEAR - SEM 1		107	150 (Internal)		6	Multiple				
Exercise: Title	TBD									
Exercise Note / Task	-									
Assessment	Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail			
Grade	O++	O+	O	A	B	C	D	E	F	
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%	
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0	
Area of Evaluation										
Ability to understand, follow and apply an appropriate/correct method of drawing	Exceptional understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been employed correctly. Adequate no. of views/details have been drafted to understand the object holistically. No duplicate methods have been used to achieve the final result.	Outstanding understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been employed correctly. Adequate no. of views/details have been drafted to understand the object holistically. No duplicate	Sophisticated understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been attempted well. Adequate no. of views/details have been drafted to understand the object holistically.	Excellent understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been attempted well. No. of views/details employed are good enough to understand the object holistically. No duplicate methods have been used to achieve the final result. Most of the steps of the method has been employed in a sequential manner	Very good understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been attempted well. No. of views/details employed are good enough to understand the object holistically. No duplicate methods have been used to achieve the final result. Most of the steps of the method has been employed in a sequential manner	Good understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been attempted satisfactorily. No. of views/details employed are satisfactory to	Fair understanding of method is displayed through the drawing. The technique of parallel projection has not been fully understood. No. of views/details employed are inadequate. No duplicate methods have been used to achieve the final result. Not all steps of	Satisfactory understanding of method is displayed through the drawing. The technique of parallel projection has not been employed. No. of views/details employed are inadequate. Duplicate methods have been used to achieve the final result. Lack of sequential methodical	Poor understanding of method is displayed through the drawing. The technique of parallel projection used is incorrect. Lack of no. of views/details employed are good enough to understand the object holistically. Duplicate methods have been used to achieve the final	

	Every step of the method employed has followed a sequential process of arrival and is contingent to the next step.	methods have been used to achieve the final result. Every step of the method employed has followed a sequential process of arrival and is contingent to the next step.	No duplicate methods have been used to achieve the final result. Most of the steps of the method has been employed in a sequential manner			understand the object holistically. No duplicate methods have been used to achieve the final result. Not all steps of the method have been employed in a sequential manner.	the method have been employed in a sequential manner.	understandi ng	result. Lack of sequential methodical understanding. Lack of effort in rigour of the drawing.
Representation Technique and final submission	All the criteria below have been exceptionally employed with great rigour, precision and neatness. The presentation is self-explanatory and shows an exceptional level of skill in arranging and organisation.	Most of the criteria below have been exceptionally employed with great rigour, precision and neatness. The presentation is self-explanatory and shows an outstanding level of skill in arranging and organisation.	Most of the criteria below have been employed with great rigour, precision and neatness. The presentation is self-explanatory and shows a sophisticated level of skill in arranging and organisation.	Most of the criteria below have been employed with rigour, precision and good neatness. The presentation is self-explanatory and shows an excellent skill in arranging and organisation.	Most of the criteria below have been employed with rigour, precision and satisfactory neatness. The presentation shows a very good level of skill in arranging and organization consistently of very good quality.	Not all of the criteria below have been employed with rigour, precision and satisfactory neatness. The presentation shows a good level of skill in arranging and organisation.	Not all of the criteria below have been employed with rigour, precision and satisfactory neatness. The presentation shows a fair level of skill in arranging and organisation.	Not all of the criteria below have been employed. Satisfactory levels of rigour, precision and neatness. The presentation is not self-explanatory and requires to achieve a satisfactory level of skill in arranging and organisation.	Most of the criteria below have not been employed. Lack rigour, precision and neatness. The presentation lacks clarity and shows poor level of skill in arranging and organisation.
Line quality (line types, line weights; these include both drafted lines and free-hand lines, object lines, section lines, elevation lines, centre lines, hidden lines, dotted/dashed line, hatches, material indication)									
Annotation lines (line type, line weight, arrow head, these include - guide lines, construction lines, dimension lines, extension lines, leaders, break line,									

border lines, cutting-plane line/ arrow, slopes and gradations)									
Annotation text (Size, Style - Template texts, labelling, lettering quality, level demarcation, dimensioning, call-outs)									
Sheet composition (template design, sheet layout, no. of details to holistically explain the object)									
Sheet information (north sign, graphic scale, notes, student's name, roll no., sheet title, drawing unit dimension note, legends, graphic symbols)									
<b>Model Making and Analysis</b>	The models display an enthusiasm and effort to take on challenging and difficult levels of resolution. They break new ground in terms of their innovation and inventiveness and effort. They are exquisitely constructed, with an innovative and sophisticated understanding of material, structure, technique.	The models display an enthusiasm and effort to take on challenging levels of resolution. They are innovative and inventive and display outstanding effort. They are excellently constructed, with a clear understanding of material, structure, technique.	The models display outstanding effort and rigour. They are excellently constructed, with a clear understanding of material, structure, technique.	The models display excellent effort and rigour. They are well constructed, with a clear understanding of material, structure, and technique.	The models display a very good effort and rigour. They are well constructed, with a clear understanding of material, structure, and technique.	The models display a good effort and rigour. They are well constructed, with a clear understanding of material, structure, and technique.	The models display a fair amount of effort and rigour. They are constructed, with a fair understanding of material, structure, and technique.	The models display a satisfactory amount of effort and rigour. They are constructed, with a satisfactory understanding of material, structure, and technique.	The models display a lack of effort or rigour. They are poorly constructed, with no understanding of material, structure, and technique.
<b>Time management and participation in Studio</b>	100 %	99% -95%	94-91%	90-85%	84-81%	80-75%	74-70%	69-60%	Below 60%

COPO Mapping Setup for Sem 1, 2021-2022

CO-PO mapping for a course of B. Arch First Year Architectural Representation and Detailing I									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Understand the techniques and methods for architectural representation.	2	3	3	0	1	3	3	2
CO2	Enable students to learn how to use tools for representing spatial ideas, like drafting and model making.	1	2	3	0	0	0	3	1
CO3	Enable students to create, and manipulate three dimensional form and space by use the tools of representation.	3	1	3	1	0	0	2	3
CO4	Facilitate students to create orthographic projections, axonometric and isometric tools of representation of architecture.	2	1	3	0	0	0	3	0
CO5									

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation



<b>COURSE CODE</b>	BARC 120	<b>CREDITS</b>	6 (split across the course of Architectural Design (2CP), Architectural Theory (3CP) and History (1 CP))
<b>COURSE NAME</b>	College Projects (Architectural Theory and History)	<b>SESSIONAL MARKS</b>	100 (50 (AT) + 30 (AD) + 20 (History))
<b>FACULTY</b>	Architectural Theory (Sonal Sundararajan, Ankush Chandran) History (Ginella George and Sarah George)	<b>EXAM SCHEME</b>	NA
<b>CLASS DAY/TIME</b>	Architectural Theory - TUESDAY, 8:00am to 9:40 pm History - THURSDAY, 9:40 am to 11:20 am	<b>NON-CLASS TIME</b>	6 hours

### COURSE 1 – Architectural Theory

<b>COURSE CODE</b>	BARC 120	<b>CREDITS</b>	2CP
<b>COURSE NAME</b>	College Projects (Architectural Theory)	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Sonal Sundararajan and Ankush Chandran	<b>EXAM SCHEME</b>	NA
<b>CLASS DAY/TIME</b>	TUESDAY, 8:00am to 9:40 pm	<b>NON-CLASS TIME</b>	3

**PEDAGOGIC INTENT** The course is an introduction to critical and analytical thinking. This is not intended to be a mere instructive course, but rather a space of debate and engagement. The intent of the course is to inculcate a habit of critical thinking and analysis in the students everyday lives and introduce the notion that concepts and practice are inextricably entangled, that one does not precede or supercede the other This is seen as necessary given the fact of the nature of schooling that creates a separation between the space of education , prescriptive exam oriented learning and the self and our engagement with the world. Very often this results in a removed, mechanical engagement within learning that has to be dismantled in the first year itself. The course begins to introduce critical theoretical concepts, through an examination of the students ideas of everyday objects and concepts and thus their notions of self and world.

In the first semester, the classes are organised as debates between groups of students and the faculty. Through a series of curated objects that structure and transform society and our lives –ideas and concepts of time, space, the body, beauty, etc. and their social and political implications are explored. In every class- two groups will discuss the object/ phenomenon, its meaning and its relationship to social structures. These will be familiar objects to most students, opening out the idea that the world of theory, ideas and concepts, forms their own notions of world and self. In the second part, the course is conducted as a series of lectures on the idea of home-as a notion, a space, and questions that architecture has framed around it.

**COURSE METHOD** Every class will consist of a presentation by students followed by a lecture by faculty to discuss the larger ideas embedded within objects

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
Week 1	28/12/2021	The Ordinary and the Beautiful Home (Desire and Aspiration in the Home)	The Wardrobe/cupboard	
Week 2	04/01/2022	The world enters the home (media and its construction of images of the public. The idea of the collective, public, who is the public)	The Television Computer/Phone The newspaper/News	
Week 3	11/01/2022	Nature and the Home (The history of Nature as an idea/image, ideas of 'civilisation' and culture vs., wilderness)	The Potted Plant/Garden in the home. The Pet	
Week 4	18/01/2022	Family, Tradition and the Home (Family, Tradition, rituals and spaces of consecration. Ideas of purity, sacred and profane space)	The Family Portrait through the ages Divinity in the Home	
Week 5	25/01/2022	Identity in the Home (Family, Tradition, rituals and spaces of consecration. Ideas of purity, sacred and profane space)	Trophies/Certificates. Personal Diary, Blog, Instagram etc. My room/corner	
Week 6	28/02/2021	Other Spaces (The Gaze on the other, how we see Others, Where the other exists or is located)	Toilet Dustbin	
Week 7	01/02/2022	Time, Body, Space (The organisation of space and time, through history)	The Clock The Calendar	
Week 8	08/02/2022	Time, Body, Space (The organisation of space and time, through history)	The Clock The Calendar	

Week 9	22/02/2022	Bodies and Space (Gender roles and spaces)	The Kitchen The Single/Double Bed
Week 10	01/03/2022	Bodies and Space (Gender roles and spaces)	The Kitchen The Single/Double Bed

<b>LEARNING OUTCOMES</b>	An attitude of critical reflection and thinking about the world that surrounds them
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<b>READING LIST/REFERENCES</b>	Ways of Seeing, John Berger, The History of Art, Jansen, Modern Fmes, Charles Chaplin.
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### COURSE 2 – History

<b>COURSE CODE</b>	BARC 120	<b>CREDITS</b>	1 CP
<b>COURSE NAME</b>	College Projects (History)	<b>SESSIONAL MARKS</b>	20
<b>FACULTY</b>	Ginella George, Sarah George	<b>EXAM SCHEME</b>	None
<b>CLASS DAY/TIME</b>	Thursday/ 9.40 – 11.20am	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	<p>TENET OF COSMOLOGY   PARADIGM OF BELIEF AND MYTH</p> <p>History of Egyptian Architecture   History of Buddhist Architecture   History of Mycenaean Architecture   History of Persian Architecture   Indian Temples</p> <p>The history of architecture for first three years needs to correspond to the larger pedagogic structure of theory and design learning i.e Spatial, Conceptual, Critical aspects of history of architecture. These aspects required to be mobilized through various spectrums of thoughts. Instead of learning history of architecture through time line, it is proposed to establish learning through simultaneous geographical section.</p>
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<b>COURSE METHODOLOGY</b>	The objective of the course is to bridge the distance between history as a construction of cultural identities and history as a material expression of the built object. The course attempts to discuss the ideas that lead to a production of architecture. History is thus, seen and discussed as an understanding of processes – an intersection of belief, technology and social structure.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	23/12/2021	Introduction		
2	06/01/2022	"What is History ?- Introduction to the study of History - Why do we study history of architecture , History as progress, Hyperreality "		
3	13/01/2022	Introduction to the Agrarian Economy		
4	20/01/2022	Nature Worshippers - Layout of Indus city - Great granary		
5	27/01/2022	God spoke to the priests – Male order – Indian Caste System - Vedas - Progeny - Divine Rights Theory		
6	03/02/2022	Assignment Introduction – Writing a Personal History through an heirloom		
7	10/02/2022	Working class & Discussion – Writing a Personal History through an heirloom		
8	17/02/2022	Working class & Discussion – Writing a Personal History through an heirloom		
9	24/02/2022	Working class & Discussion – Writing a Personal History through an heirloom		
10	03/03/2022	Final Submission – Writing a Personal History through an heirloom		
11	10/03/2021	Buddhist Architecture  Body-Movement-Space, Monastery		

12 17/03/2021 Buddhist Architecture

Rock cut architecture – caves, viharas, stupas

**LEARNING OUTCOMES**

1. Understanding Architecture as an outcome of socio cultural processes
2. Writing Architectural History
3. Unpacking history as interpretations rather than a sacred record

**READING LIST/**

1. Brown, Percy. Indian Architecture (Buddhist And Hindu Period). Read books (2<sup>nd</sup> ed. Edition 2010)

**REFERENCES**

2. Fletcher, Bannister, Sir. History of Architecture, Oxford: Architectural Press, (1996)

**CO-PO mapped syllabi of B.Arch Course 2021-2022 – College Projects (Architecture Theory + Architecture Design + History)**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete)
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course 1: Architecture Theory (3CP)**

**Course Code: BARC 120**

**Sem 1**

**First Year**

**Course Objectives:**

The course is an introduction to critical and analytical thinking. This is not intended to be a mere instructive course, but rather a space of debate and engagement. The intent of the course is to inculcate a habit of critical thinking and analysis in the students' everyday lives and introduce the notion that concepts and practice are inextricably entangled, that one does not precede or supersede the other. This is seen as necessary given the fact of the nature of schooling that creates a separation between the space of education, prescriptive exam-oriented learning and the self and our engagement with the world. Very often this results in a removed, mechanical engagement within learning that has to be dismantled in the first year itself.

The course begins to introduce critical theoretical concepts, through an examination of the students' ideas of everyday objects and concepts and thus their notions of self and world. In the first semester, the classes are organised as debates between groups of students and the faculty. Through a series of curated objects that structure and transform society and our lives -ideas and concepts of time, space, the body, beauty, etc. and their social and political implications are explored. In every class- two groups will discuss the object/phenomenon, its meaning and its relationship to social structures. These will be familiar objects to most students, opening out the idea that the world of theory, ideas and concepts, forms their own notions of world and self. In the second part, the course is conducted as a series of lectures on the idea of home-as a notion, a space, and questions that architecture has framed around it.

**Course 2: History (1HU + 1CP)**

**Course Code: BARC 120**

**Sem 1**

**First Year**

**Course Objectives:**

- To understand architecture as an outcome of socio cultural processes.
- To unpack histories as interpretations rather than as a text.
- To write an architectural history.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To understand concepts and ideas that have shaped the world that surrounds them and to evaluate these ideas as they emerge out of socio-economic structures
CO2	To critically analyze the spaces and objects around them as they merge out of these forces. To apply these with respect to how they locate and see themselves in the world.
CO3	To evaluate these spaces and objects as acts of design that embody ideas and develop a consciousness about their own acts of design.
CO4	To understand published architectural theoretical works by architects and to be able to apply them as references to one's individual approach.
CO5	Enabling the student to question the role and purpose of history in architecture

**Rubrics for College Projects Course 1 (Architectural Theory) :**

<b>Year of Assessment: 2021 - 2022</b>	<b>USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture</b>									
<b>Year &amp; Sem</b>	<b>Subject:</b>	<b>University Subject Code</b>	<b>Sessional Marks: max 100</b>	<b>Exercise : Marks out of</b>	<b>Credits</b>	<b>Date of submission</b>				
<b>FIRST YEAR - SEMI</b>	<b>College Projects (Architectural Theory)</b>	<b>BARC 120</b>	<b>50</b>		2 College Projects	Every week one group presents				
<b>Exercise: Title</b>	CLASS PRESENTATIONS									
<b>Exercise Note / Task</b>	In the first semester, the classes are organised as debates between groups of students and the faculty. Through a series of curated objects that structure and transform society and our lives -ideas and concepts of time, space, the body, beauty, etc. and their social and political implications are explored. In every class- two groups will discuss the object/phenomenon, its meaning and its relationship to social structures. These will be familiar objects to most students, opening out the idea that the world of theory, ideas and concepts, forms their own notions of world and self. In the second part, the course is conducted as a series of lectures on the idea of home-as a notion, a space, and questions that architecture has framed around it.									
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>	
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>	
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0	
<b>Area of Evaluation</b>										
<b>Class Presentation</b>	1) Extremely articulate in framing the area for inquiry. 2) Very clear structure for presentation. 3) Well researched	1) Very articulate in framing the area for inquiry. 2) Clear structure for presentation. 3) Well researched	1)Clear and Articulate in framing the area for inquiry. 2) Well researched structure for presentation.	1) There is clarity in the area of inquiry 2) Research and structure for presentation is fairly good.	1) The area of inquiry is fairly good 2) Research and structure for presentation can be better.	1) The area of inquiry is good 2) Research and structure for presentation is fair.	1) There is clarity in the area of inquiry 2) Research and structure for presentation is found lacking	1)There is potential for an area of inquiry but needs more clarity. 2) No research and structure for presentation	1)There is potential for the parameters but needs more clarity. 2) No research and structure for presentation	Non submission
<b>Attendance and Participation</b>	Attends less than 95% of total classes	Attends less than 90% of total classes	Attends less than 85 % of total classes	Attends less than 75 % of total classes	Attends less than 70 % of total classes	Attends less than 65 % of total classes	Attends less than 60 % of total classes	Attends less than 55 % of total classes	Attends less than 50 % of total classes	

**Rubrics for College Projects Course 3 (History) :**

<b>Year of Assessment: 2021-2022</b>	<b>USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture</b>								
<b>Year &amp; Sem</b>	<b>Subject:</b>	<b>University Subject Code</b>	<b>Sessional Marks: max 100</b>	<b>Exercise : Marks out of</b>	<b>Credits</b>	<b>Date of submission</b>			

<b>FIRST YEAR - SEMI</b>	<b>College Projects (History)</b>	<b>BARC 120</b>	<b>20</b>			ICP + 1 HU			
<b>Exercise: Title</b>	Writing Family Histories								
<b>Exercise Note / Task</b>	Using an heirloom the student has to write their family history								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Description of the object under consideration through drawing, text etc.</b>	1) Extremely articulate in framing parameters. 2) Very clear structure for presentation. 3) Well researched	1) Very articulate in framing parameters. 2) Clear structure for presentation. 3) Well researched	1)Clear and Articulate in framing parameters. 2) Well researched structure for presentation.	1) There is clarity in the parameters .2) Research and structure for presentation is fairly good.	1) The parameter are fairly good 2) Research and structure for presentation is better.	1) The parameters are good 2) Research and structure for presentation is fair.	1) There is clarity in the parameters. 2) Research and structure for presentation is found lacking	1)There is potential for the parameters but needs more clarity. 2) No research and structure for presentation	Non submission
<b>Participation in class</b>	Attends less than 95% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes

**COPO Mapping Setup for Sem 1, 2021-2022**

CO-PO mapping for a course of B. Arch First Year College Projects									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To understand concepts and ideas that have shaped the world that surrounds them and to evaluate these ideas as they emerge out of socio-economic structures	2	0	0	3	3	3	3	1
CO2	To critically analyze the spaces and objects around them as they merge out of these forces. To apply these with respect to how they locate and see themselves in the world.	2	0	0	3	3	3	3	1

CO3	To evaluate these spaces and objects as acts of design that embody ideas and develop a consciousness about their own acts of design.	2	0	0	3	3	3	3	1
CO4	Enabling the student to question the role and purpose of history in architecture	3	3	3	1	0	3	1	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
0 – No Correlation

# Semester 2

## Scheme of Teaching and Examinations

### Scheme of Teaching and Examinations Bachelor of Architecture (B. Arch.) Semester II

Sub No.	Semester II Exam conducted by individual colleges COURSES	Teaching Scheme		Credits		
		Lecture	Studio	Theory	Studio	Total
201	Architectural Design		4		4	4
202	Allied Design Studio		4		4	4
203	Architectural Building Construction & Materials	2	3	2	3	5
204	Theory & Design of Structures	3		3		3
205	Humanities	3		3		3
206	Environmental Studies	2		2		2
207	Architectural Representation & Detailing		3 +3		6	6
220	College projects		6		6	6
221	Elective		3		3	3
	<b>Total</b>	<b>10</b>	<b>26</b>	<b>10</b>	<b>26</b>	<b>36</b>

Sub. No.	Semester II Exam Exam conducted by individual colleges SUBJECTS	Examination Scheme			
		Theory (paper)	Sessional Work	External viva	Total
201	Architectural Design Studio		150		150
202	Allied Design Studio		150		150
203	Architectural Building Construction	70	80		150
204	Theory & Design of Structures	50	50		100
205	Humanities	50	50		100
206	Environmental Studies		50		50
207	Architectural Representation & Detailing		100+50		150
220	College projects		100		100
221	Elective		50		50
	<b>Total</b>				<b>1000</b>

Notes: Each period shall be of 50 minutes duration and each semester shall consist of 90 days of teaching programme.

The colleges are required to arrange the time table per semester as per the teaching scheme prescribed.

# Semester 2

## Time-Table

	MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY		SATURDAY	
8.00 - 8.50	<b>Design Studio: Architectural Design / Allied Design / ABC</b>		<b>Architectural Theory</b>		<b>Drawing Studio (ARD)</b>		<b>Humanities</b>		<b>Design Studio: Architectural Design / Allied Design / ABC</b>			
8.50 - 9.40	101+102	2+2 + 3 ABC	120	2 CP	107	6	105	2 of 3	101+102	2+2+3 CP		
9.40 - 10.30	Ankush	Karan			Ankush	Karan			Ankush	Karan		
10.30 - 11.20	Aishwarya	Mamta	<b>Environmental Studies (EVS)</b>		Aishwarya	Mamta	<b>History Lecture</b>		Aishwarya	Mamta	<b>Theory and Design of Structures</b>	
	Mansi	Sandeep	106	2	Mansi	Sandeep	105.1	2- 1 HU / 1 CP	Mansi	Sandeep	104	2 of 3
	Shirish	Sonnal	Kimaya	Minal	Shirish	Sonnal	Ginella	Sarah	Shirish	Sonnal	Rajitha	Neeraj
11.20 - 12.00	Lunch Break											
12.00-12.50			<b>Architectural Building Construction and Materials (2 ABC)</b>									
12.50 - 1.20			103	2 ABC+ 1 TOS								
1.20 - 2.10			Dharmesh	Mamta								
2.10 - 3.00			Aishwarya									



<b>COURSE CODE</b>	101, 102, 103	<b>CREDITS</b>	4 ALLIED DESIGN+4 ARCHITECTURAL DESIGN+3 COLLEGE PROJECTS+3 ARCHITECTURAL BUILDING CONSTRUCTION
<b>COURSE NAME</b>	Studio - Allied Design Architectural Design Architectural Building Construction.	<b>SESSIONAL MARKS</b>	150 AD+ 150 AD +50 CP +80 ABC
<b>FACULTY</b>	Karan R, Shirish J, Mansi B, Sandeep M, Sonal S, Aishwarya P, Mamta P, Ankush C.	<b>EXAM SCHEME</b>	Internal Viva
<b>CLASS DAY/TIME</b>	Mondays and Fridays 8-11.20 , 12:00-12:50, 1:20-3.00p m	<b>NON-CLASS TIME</b>	400 minutes

#### PEDAGOGIC INTENT

Introduction to design as a conceptual discipline directed at the analysis, interpretation, synthesis, and transformation of the physical environment. Exercises are aimed wherein the learner will develop an understanding of the contextual issues, elements, and processes of design and manifestation of architectural design. The methodology for the exercises is to

- Record and observe- to establish our place in the surrounding world • Analyse and understand - to articulate a position
- Intervene- to manifest an architectural intervention

#### Project Brief- The Accretions: The Architecture of Annexes at Shrivardhan

The first year study trip studies built form ( architecture) as a consequence of the complex interweaving of socio-economic and ecological relations. This year, such a study was undertaken in the coastal town of Shrivardhan. The method of study involved a close observation of the various spaces, activities and landscape, and the different through hand drawings made on site. The class was divided into groups and spread across various sites in the town, based on *topographical conditions* that gave rise to different livelihoods, community formations, and built fabric.

The design studio brief takes this study as its beginning that identified conditions of growth, decay, transformations. Students were asked to identify the phenomena of growth in the town- extending across the biological, human, machinic over the last day of work at Shrivardhan. They came back into the studio and began to develop a deeper study of the phenomena through the making of drawings and models. This study served as the trigger or stimulus to create annexes to sites identified within the town. The programme for the annexe as a community space and programme was developed by each student through a process of applying their understandings of growth, as metaphor, as formal expression, as pattern, as process or as experience, into the crafting of an architectural intervention.

#### COURSE METHODOLOGY

Key concepts will be introduced through lectures by faculty on scale, material, experience and expression in architecture. Discussions and reviews on individual works.

Stage 1- Study of the phenomena of growth/decay etc as models and drawings ( **2 weeks**) Stage 2- Conceptual ideas for the annexe- as programme/formal/spatial ideas through the

metaphor of growth with the respect to the site ( **3 weeks**) Stage 3- models/drawings/details on site. ( **3 weeks**)

LECT		DATE	TEACHING CONTENT	Marking
1		3rd to 10th April	Study Trip Work - Production of drawing and sketches of study conducted on site.	<b>3CP ( 50 marks)</b>
2	Monday	11th April	AD, Allied Studio - Compiling Study Trip Drawings- Introduction to Studio Project	
3	Monday	18th April	Conceptual Ideas	
4		22nd April	Conceptual Ideas	
5		2nd May	Conceptual Ideas	
		7th May	Conceptual Ideas	
6		9th May	<b>Studio - First Graded Review ALLIED DESIGN (150 MARKS)</b>	<b>150 Allied design</b>
7			Studio- Design Development (8:am - interaction, 10am- Working Studio, 1pm to 3:50 interaction)	
8	Friday	13th May	Studio- Design Development (8:am - interaction, 10am- Working Studio, 1pm to 3:50 interaction)	
9		16th May	Studio- Design Development (8:am - interaction, 10am- Working Studio, 1pm to 3:50 interaction)	
10		20th May	Studio- Design Development (8:am - interaction, 10am- Working Studio, 1pm to 3:50 interaction)	
11	Saturday	21st May	Studio - Second Graded Review all day (ARCHITECTRAL DESIGN 50 MARKS)	<b>50 Arch Design</b>
12	Sunday to Tuesday	22nd May to 31st May	Vacation	
13		3rd June	Studio- Drawing and Resolution (8:am - interaction, 10am- Working Studio, 1:20 to 3:00 interaction)	

14		6th June	Studio- Drawing, and Resolution (8:am - interaction, 10am- Working Studio, 1:20 to 3:00 interaction)	
		10th June	Studio- Drawing and Resolution (8:am - interaction, 10am- Working Studio, 1:20 to 3:00 interaction)	
		13th June	Studio - Final Production (8:am - interaction, 10am- Working Studio, 1:20 to 3:00 interaction)	
			Studio - Final Production (8:am - interaction, 10am- Working Studio, 1:20 to 3:00 interaction)	
	Friday	17th June	Semester 2 Final Jury - With External Jurors	<b>(100 MARKS Arch Design) + +80MARKS ABC) for resolution, understanding of construction etc.</b>

**LEARNING OUTCOMES**

Developing formal, spatial, material interventions through Iterative process involving various kinds of drawings, expressive, technical analytical. An understanding of context and scale, ergonomics. Learning techniques of architectural drawing and model making.

**READING LIST/  
REFERENCES****CO-PO mapped syllabi of B.Arch Course 2021-2022 – Architectural Design****Semester Two****Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to de-layer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**Outcomes for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort

- zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
  6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
  7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
  8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Design**  
**Course Code: BARC 202**

**Sem 2**

**Name Year 2021-22**

**Course Objectives: I**

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To read and analyze context
CO2	To conceptualize and develop a design process through drawings and models as a response to the text-work.
CO3	To create/author an original individual design response
CO4	To create technical, analytical, expressive drawings and models that reflect a basic understanding of material structure and tectonic expression.

**Rubrics: Exercise The Accretions: The Architecture of Annexes at Shrivardhan**

USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year of Assessment: 2021-2022	Year & Sem	Subject :	Subject Code	University Subject Code	Sessional Marks: 150	Exercise 01 Marks out of	Credits	Date of submission
FIRST YEAR - SEM21	Archit	ectura		BARC202	150	150	4	9th May 2022
Exercise : Title	<b>The Accretions: The Architecture of Annexes at Shrivardhan</b>							
Exercise Note / Task	<p>Introduction to design as a conceptual discipline directed at the analysis, interpretation, synthesis, and transformation of the physical environment. Exercises are aimed wherein the learner will develop an understanding of the contextual issues, elements, and processes of design and manifestation of architectural design. The methodology for the exercises is to</p> <ul style="list-style-type: none"> <li>• Record and observe</li> <li>• to establish our place in the surrounding world</li> <li>• Analyse and understand</li> <li>• to articulate a position</li> <li>• Intervene- to manifest an architectural intervention</li> </ul> <p><b>Project Brief-The Accretions: The Architecture of Annexes at Shrivardhan</b> The first year study trip studies built form ( architecture) as a consequence of the complex interweaving of socio-economic and ecological relations. This year, such a study was undertaken in the coastal town of Shrivardhan. The method of study involved a close observation of the various spaces, activities and landscape, and the different through hand drawings made on site. The class was divided into groups and spread across various sites in the town, based on <i>topographical conditions</i> that gave rise to different livelihoods, community formaRons, and built fabric. The design studio brief takes this study as its beginning that identified conditions of growth, decay, transformations.</p> <p>Students were asked to identify the phenomena of growth in the town-extending across the biological, human, machinic over the last day of work at Shrivardhan. They came back into the studio and began to develop a deeper study of the phenomena through the making of drawings and models. This study served as the trigger or stimulus to create annexes to sites identified within the town. The programme for the annexe as a community space and programme was developed by each student through a process of applying their understandings of growth, as metaphor, as formal expression, as pattern, as process or as experience, into the crafting of an architectural intervention.</p>							

Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0

**Area of Evaluation**

To read the context through the lens.									
Choice reflects and enquiry an immersive engagement with the idea and extreme sensitivity. The articulation through drawings of the phenomenon displays outstanding sensitivity and rigour. The work is experimentation and innovative and original. It exceeds the brief of the project in its attempts at exploring and expressing the nuances of the phenomenon.	Choice and enquiry reflects an immersive engagement with site. The articulation of the phenomenon through drawing is outstanding	Choice and enquiry reflects an immersive engagement with site. The articulation through drawing is excellent	Choice and enquiry reflect a very good degree engagement with site. The articulation through drawing displays is very good.	Choice and enquiry reflects a good degree engagement with site. The articulation through drawings displays is good.	Choice and enquiry reflect a fair degree engagement with site. The articulation or the phenomenon through drawing is fair	Choice and enquiry reflects an engagement with site. The articulation of the phenomenon through drawing is satisfactory.	The work shows no engagement with site. The work lacks effort and is of unacceptable quality.		

<b>To engage in an iterative design process and create/author an original individual work.</b>	Immersive and rigorous explorations of the context through the metaphor of growth. A sensitive and outstanding response to the site context. Innovative and Original techniques in experimenting with media to represent the site through the lens. .	An outstanding and rigorous explorations. Of the context through the metaphor of graph. A sensitive and outstanding response to the site context. Inventive techniques in experimenting with media to represent the site through the lens. .	A rigorous exploration of the site through the lens. An outstanding exploration of various techniques in experimenting with media to represent the site through the lens. .	Excellent explorations of the site through the lens. An excellent exploration of techniques used in experimenting with media and techniques.	Very good explorations through the process. A very good exploration of techniques used in experimenting with media and techniques is good.	Good explorations through the process. The exploration of techniques used in experimenting with media and techniques is good.	A fair amount of explorations through the process. An understanding of conventional techniques in experimenting with media and techniques.	A satisfactory amount of explorations through the process. A satisfactory understanding of conventional techniques in experimenting with media and techniques.	No engagement with process
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<p><b>To create technical, analytical, expressive drawings and models that reflect an outstanding understanding of scale, experience, material structure and tectonic expression.</b></p>	<p>The final work is of outstanding quality. It is innovative and original displaying outstanding skill and understanding. It is presented in a original and innovative manner that reflects an extraordinary sensitivity to scale material structure and tectonic expression.</p>	<p>The final work is of outstanding quality. It is innovative and original displaying great skill and understanding. It is presented in a manner that reflects a great sensitivity to the experience of the body. And tectonic expression as material and form.</p>	<p>The final work is of outstanding quality. It is innovative and original displaying great skill and understanding. It is presented in a original and innovative manner. that reflects a great sensitivity to the experience of the body. And tectonic expression as material and form.</p>	<p>The final work is of excellent quality. It is innovative displaying great skill and understanding of material, form, scale and tectonic expression.and</p>	<p>The final work is of very good quality. It displays skill and understanding of material and tectonic expression.</p>	<p>The final work is of good quality. It displays a good amount of skill and understanding of tectonics , scale and experience.</p>	<p>The final work is of fair quality. It displays fair amount of skill and understanding of spatial experience and tectonic expression.</p>	<p>The final work is of satisfactory quality. It displays a fair amount of skill and understanding of spatial experience and tectonic expression.</p>	<p>The work is incomplete and displays a complete lack of effort and skill.</p>
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COPO Mapping Setup for Sem 2

CO-PO mapping									
Sr. No.	CO description	PO 1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8
1	To read and analyze context	1	3	3	3	2	3	3	3
2	To conceptualize and develop a design process through drawings and models as a response to the text-work.	1	3	3	3	0	3	2	3
3	To create/ author an original individual design response	3	3	3	3	0	2	3	3
	To create technical, analytical, expressive drawings and models that reflect a basic understanding of material structure and tectonic expression.	3	3	3	3	0	2	1	3

1 – Slight (Low) Correlation  
0 – No Correlation

2- Moderate (Medium) Correlation

3- Substantial (high) Correlation

<b>COURSE CODE</b>	101, 102, 103	<b>CREDITS</b>	4 ALLIED DESIGN+4 ARCHITECTURAL DESIGN+3 COLLEGE PROJECTS+3 ARCHITECTURAL BUILDING CONSTRUCTION
<b>COURSE NAME</b>	Studio - Allied Design Architectural Design Building Construction.	<b>SESSIONAL MARKS</b>	150 AD+ 150 AD +50 CP +80 ABC
<b>FACULTY</b>	Karan R, Shirish J, Mansi B, Sandeep M, Sonal S, Aishwarya P, Mamta P, Ankush C.	<b>EXAM SCHEME</b>	Internal Viva
<b>CLASS DAY/TIME</b>	Mondays and Fridays 8-11.20 , 12:00-12:50, 1:20-3.00p m	<b>NON-CLASS TIME</b>	400 minutes

**PEDAGOGIC INTENT**

Introduction to design as a conceptual discipline directed at the analysis, interpretation, synthesis, and transformation of the physical environment. Exercises are aimed wherein the learner will develop an understanding of the contextual issues, elements, and processes of design and manifestation of architectural design. The methodology for the exercises is to

- Record and observe- to establish our place in the surrounding world • Analyse and understand - to articulate a position
- Intervene- to manifest an architectural intervention

**Project Brief- The Accretions: The Architecture of Annexes at Shrivardhan**

The first year study trip studies built form ( architecture) as a consequence of the complex interweaving of socio-economic and ecological relations. This year, such a study was undertaken in the coastal town of Shrivardhan. The method of study involved a close observation of the various spaces, activities and landscape, and the different through hand drawings made on site. The class was divided into groups and spread across various sites in the town, based on *topographical conditions* that gave rise to different livelihoods, community formations, and built fabric.

The design studio brief takes this study as its beginning that identified conditions of growth, decay, transformations. Students were asked to identify the phenomena of growth in the town- extending across the biological, human, machinic over the last day of work at Shrivardhan. They came back into the studio and began to develop a deeper study of the phenomena through the making of drawings and models. This study served as the trigger or stimulus to create annexes to sites identified within the town. The programme for the annexe as a community space and programme was developed by each student through a process of applying their understandings of growth, as metaphor, as formal expression, as pattern, as process or as experience, into the crafting of an architectural intervention.

**COURSE METHODOLOGY**

Key concepts will be introduced through lectures by faculty on scale, material, experience and expression in architecture. Discussions and reviews on individual works.  
 Stage 1- Study of the phenomena of growth/decay etc as models and drawings ( **2 weeks**) Stage 2- Conceptual ideas for the annexe- as programme/formal/spatial ideas through the metaphor of growth with the respect to the site (**3 weeks**) Stage 3- models/drawings/details on site. ( **3 weeks**)

LECT		DATE	TEACHING CONTENT	Marking
1		3rd to 10th April	Study Trip Work - Production of drawing and sketches of study conducted on site.	<b>3CP ( 50 marks)</b>
2	Monday	11th April	AD, Allied Studio - Compiling Study Trip Drawings- Introduction to Studio Project	
3	Monday	18th April	Conceptual Ideas	
4		22nd April	Conceptual Ideas	
5		2nd May	Conceptual Ideas	
		7th May	Conceptual Ideas	
6		9th May	<b>Studio - First Graded Review ALLIED DESIGN (150 MARKS)</b>	<b>150 Allied design</b>
7			Studio- Design Development (8:am - interaction, 10am- Working Studio, 1pm to 3:50 interaction)	
8	Friday	13th May	Studio- Design Development (8:am - interaction, 10am- Working Studio, 1pm to 3:50 interaction)	
9		16th May	Studio- Design Development (8:am - interaction, 10am- Working Studio, 1pm to 3:50 interaction)	
10		20th May	Studio- Design Development (8:am - interaction, 10am- Working Studio, 1pm to 3:50 interaction)	
11	Saturday	21st May	Studio - Second Graded Review all day (ARCHITECTRAL DESIGN 50 MARKS)	<b>50 Arch Design</b>
12	Sunday to Tuesday	22nd May to 31st May	Vacation	
13		3rd June	Studio- Drawing and Resolution (8:am - interaction, 10am- Working Studio, 1:20 to 3:00 interaction)	

14		6th June	Studio- Drawing, and Resolution (8:am - interaction, 10am- Working Studio, 1:20 to 3:00 interaction)	
		10th June	Studio- Drawing and Resolution (8:am - interaction, 10am- Working Studio, 1:20 to 3:00 interaction)	
		13th June	Studio - Final Production (8:am - interaction, 10am- Working Studio, 1:20 to 3:00 interaction)	
			Studio - Final Production (8:am - interaction, 10am- Working Studio, 1:20 to 3:00 interaction)	
	Friday	17th June	Semester 2 Final Jury - With External Jurors	<b>(100 MARKS Arch Design) + +80MARKS ABC) for resolution, understanding of construction etc.</b>

**LEARNING OUTCOMES**

Developing formal, spatial, material interventions through Iterative process involving various kinds of drawings, expressive, technical analytical. An understanding of context and scale, ergonomics. Learning techniques of architectural drawing and model making.

**READING LIST/  
REFERENCES****CO-PO mapped syllabi of B.Arch Course 2021-2022 – Architectural Design Semester Two****Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to de-layer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**Os for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort

- zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
  6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
  7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
  8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Design**  
**Course Code: BARC 202**

**Sem 2**

**Name Year 2021-22**

**Course Objectives: I**

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To read and analyze context
CO2	To conceptualize and develop a design process through drawings and models as a response to the text-work.
CO3	To create/author an original individual design response
CO4	To create technical, analytical, expressive drawings and models that reflect a basic understanding of material structure and tectonic expression.

**Rubrics: Exercise The Accretions: The Architecture of Annexes at Shrivardhan**

Year of Assessment: 2021-2022 USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture							
Year & Sem	Subject :	Subject Code	University Subject Code	Sessional Marks: 150	Exercise 01 Marks out of	Credits	Date of submission
FIRST YEAR - SEM21	Archit ectura l Design		BARC2 02	150	150	4	9th May 2022
<b>Exercise : Title</b>	<b>The Accretions: The Architecture of Annexes at Shrivardhan</b>						
<b>Exercise Note / Task</b>	<p>Introduction to design as a conceptual discipline directed at the analysis, interpretation, synthesis, and transformation of the physical environment. Exercises are aimed wherein the learner will develop an understanding of the contextual issues, elements, and processes of design and manifestation of architectural design. The methodology for the exercises is to</p> <ul style="list-style-type: none"> <li>• Record and observe</li> <li>• to establish our place in the surrounding world</li> <li>• Analyse and understand</li> <li>• to articulate a position</li> <li>• Intervene- to manifest an architectural intervention</li> </ul> <p><b>Project Brief-The Accretions: The Architecture of Annexes at Shrivardhan</b> The first year study trip studies built form ( architecture) as a consequence of the complex interweaving of socio-economic and ecological relations. This year, such a study was undertaken in the coastal town of Shrivardhan. The method of study involved a close observation of the various spaces, activities and landscape, and the different through hand drawings made on site. The class was divided into groups and spread across various sites in the town, based on <i>topographical conditions</i> that gave rise to different livelihoods, community formaRons, and built fabric. The design studio brief takes this study as its beginning that identified conditions of growth, decay, transformations.</p> <p>Students were asked to identify the phenomena of growth in the town-extending across the biological, human, machinic over the last day of work at Shrivardhan. They came back into the studio and began to develop a deeper study of the phenomena through the making of drawings and models. This study served as the trigger or stimulus to create annexes to sites identified within the town. The programme for the annexe as a community space and programme was developed by each student through a process of applying their understandings of growth, as metaphor, as formal expression, as pattern, as process or as experience, into the crafting of an architectural intervention.</p>						



Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail	
Grade	O++	O+	O	A	B	C	D	E	F	
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%	
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0	
Area of Evaluation										
To read the context through the lens.	Choice reflects and enquiry an immersive engagement with the idea and extreme sensitivity. The articulation through drawings of the phenomenon displays outstanding sensitivity and rigour. The work is experimentation and innovative and original. It exceeds the brief of the project in its attempts at exploring and expressing the nuances of the phenomenon.	Choice and enquiry reflects an immersive engagement with site. The articulation of the phenomenon through drawing is outstanding.	Choice and enquiry reflects an immersive engagement with site. The articulation through drawing is excellent.	Choice and enquiry reflect a very good degree of engagement with site. The articulation through drawing displays is very good.	Choice and enquiry reflects a good degree of engagement with site. The articulation through drawings displays is good.	Choice and enquiry reflect a fair degree of engagement with site. The articulation or the phenomenon through drawings is fair.	Choice and enquiry reflects an engagement with site. The articulation of the phenomenon through drawings is satisfactory.	Choice and enquiry reflects an engagement with site. The articulation of the phenomenon through drawings is satisfactory.	Choice and enquiry reflects an engagement with site. The articulation of the phenomenon through drawings is satisfactory.	The work shows no engagement with site. The work lacks effort and is of unacceptable quality.

<b>To engage in an iterative design process and create/author an original individual work.</b>	Immersive and rigorous explorations of the context through the metaphor of growth. A sensitive and outstanding response to the site context. Innovative and Original techniques in experimenting with media to represent the site through the lens. .	An outstanding and rigorous explorations. Of the context through the metaphor of graph. A sensitive and outstanding response to the site context. Inventive techniques in experimenting with media to represent the site through the lens. .	A rigorous exploration of the site through the lens. An outstanding exploration of various techniques in experimenting with media to represent the site through the lens. .	Excellent explorations of the site through the lens. An excellent exploration of techniques used in experimenting with media and techniques.	Very good explorations through the process. A very good exploration of techniques used in experimenting with media and techniques is good.	Good explorations through the process. The exploration of techniques used in experimenting with media and techniques is good.	A fair amount of explorations through the process. An understanding of conventional techniques in experimenting with media and techniques.	A satisfactory amount of explorations through the process. A satisfactory understanding of conventional techniques in experimenting with media and techniques.	No engagement with process
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<p><b>To create technical, analytical, expressive drawings and models that reflect an outstanding understanding of scale, experience, material structure and tectonic expression.</b></p>	<p>The final work is of outstanding quality. It is innovative and original displaying outstanding skill and understanding. It is presented in a original and innovative manner that reflects an extraordinary sensitivity to scale material structure and tectonic expression.</p>	<p>The final work is of outstanding quality. It is innovative and original displaying great skill and understanding. It is presented in a manner that reflects a great sensitivity to the experience of the body. And tectonic expression as material and form.</p>	<p>The final work is of outstanding quality. It is innovative and original displaying great skill and understanding. It is presented in a original and innovative manner. that reflects a great sensitivity to the experience of the body. And tectonic expression as material and form.</p>	<p>The final work is of excellent quality. It is innovative displaying great skill and understanding of material, scale and tectonic expression.and</p>	<p>The final work is of very good quality. It displays skill and understanding of form material and tectonic expression.</p>	<p>The final work is of good quality. It displays a good amount of skill and understanding of tectonics , scale and experience.</p>	<p>The final work is of fair quality. It displays fair amount of skill and understanding of spatial experience and tectonic expression.</p>	<p>The final work is of satisfactory quality. It displays a fair amount of skill and understanding of spatial experience and tectonic expression.</p>	<p>The work is incomplete and displays a complete lack of effort and skill.</p>
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COPO Mapping Setup for Sem 2

CO-PO mapping									
Sr. No.	CO description	PO 1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8
1	To read and analyze context	1	3	3	3	2	3	3	3
2	To conceptualize and develop a design process through drawings and models as a response to the text-work.	1	3	3	3	0	3	2	3
3	To create/author an original individual design response	3	3	3	3	0	2	3	3
	To create technical, analytical, expressive drawings and models that reflect a basic understanding of material structure and tectonic expression.	3	3	3	3	0	2	1	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 203	<b>CREDITS</b>	5 (Split between Architectural Design and Architectural Building construction & Materials Lecture) Credits assigned for Architectural Building Construction and Material - 2ABC + 1TOS AD includes 3ABC credits
<b>COURSE NAME</b>	Architectural Building Construction and Materials	<b>SESSIONAL MARKS</b>	(50 (AD) + 30) + 20 (TOS)
<b>FACULTY</b>	Mamta Patwardhan, Aishwarya Padmanabhan, Dharmesh Mewada	<b>EXAM SCHEME</b>	Internal (70)
<b>CLASS DAY/TIME</b>	TUESDAY, 12:00pm to 3:00 pm	<b>NON-CLASS TIME</b>	3

<b>PEDAGOGIC INTENT</b>	This course intends to look at the subject of Building Construction as a story of how individual elements and components in architecture are articulated together to create assemblies that in relation to the form of the architectural object ultimately informs the tectonic expression. The tectonic expression being an externalized projection of meaning of the building, lends itself to be experienced by the body/ bodies that inhabit it, thereby imprinting itself in the consciousness of the user, who in turn affect it by their sheer presence. In the first year, the tectonic is observed and understood through materials and their materiality or even their material-realities. The course recognizes how factors such as the context, cost, inherent properties of materials, skills available and the market dynamics affect how we as architects come to choose materials which we use to write stories of/ for those we design for.
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<b>OBJECTIVES</b>	Understanding of how tectonic and stereotomic expressions can enrich and define the spatial qualities in architecture.
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<b>COURSE METHOD</b>	Material characteristics of enclosure and structural systems, Case studies in traditional assemblies/ the vernacular and modern building construction. Introduction to properties of building materials: wood, masonry concrete, steel and glass construction techniques; on-site and off-site processes; exterior finishes; assemblies, detailing. The course includes a studio component where in, construction is seen in relationship with the mechanical behaviour of materials and individual elements as well as the structural flow of load transfer from one element to the other. The Architectural Building construction and materials course of
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the First Year therefore makes references to the course of Theory and Design of Structures as a way of understanding the dynamics of load transfer.

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
Week 1	07/04/2022	Introduction to spanning elements – flat roof/ ceiling, long span structures, domes and vaults, etc. Introduction to fenestrations and opening and how to articulate them within walling systems		
Week 2	14/04/2022	Introduction to roofing systems – flat roof/ceiling in timber. The hierarchy of timber members and elements and their purpose in the overall system.		
Week 3	21/04/2022	Continuation of roofing		
Week 4	28/04/2022	Introduction to foundations – explanation through RCC foundation – types, basic calculation, soil bearing capacity, etc.		
Week 5	05/05/2022	Revision of hierarchy of timber members and the introduction to joineries of timber members.		
Week 6	12/05/2022	Types and basic understanding of mechanical behaviour of timber joineries.	Exercise: using watchmaker sticks assembling simple forms to tests how the form can be self-sufficient in achieving equilibrium	
Week 7	19/05/2022	Exploration of various materials used in building construction. Enable the student to intuitively observe and identify various materials and their uses in structure, elements, details and ornamentation, respectively. –	Exercise: using watchmaker sticks assembling forms that are modifications of the previous forms, to tests how the form can	

		building units, masonry, concrete, cements	be self-sufficient in achieving equilibrium
Week 8	26/05/2022	Exploration of various materials used in building construction. Enable the student to intuitively observe and identify various materials and their uses in structure, elements, details and ornamentation, respectively – timber, bamboo, metals	Exercise: using watchmaker sticks to assemble simple spanning structures and test them with a load
Week 9	02/06/2022	Exploration of various materials used in building construction. Enable the student to intuitively observe and identify various materials and their uses in structure, elements, details and ornamentation, respectively – glass, plastics and cladding	Exercise: Design , drafting and hands-on model of a truss articulation
Week 10	09/06/2022	Exploration of various materials used in building construction. Enable the student to intuitively observe and identify various materials and their uses in structure, elements, details and ornamentation, respectively – finishes	Exercise: Design , drafting and hands-on model of a truss articulation

**LEARNING OUTCOMES** Establish a foundation to the technology sequence through a fundamental understanding of the reciprocal relationships between space, material and structure under a holistic approach.

**READING LIST/ REFERENCE S**

- 1] Building Construction : METRIC VOLUME 1&2 BY W.R.McKAY;
- 2] Building Construction by S.C. Rangwala;
- 3] Building Construction Illustrated Book by Frank Ching Download link : <https://archive.org/details/FrancisD.K.ChingBuildingConstructionIllustratedWiley2014>
- 4] Building Construction Handbook Seventh edition R. Chudley
- 5] Brick Work by Laurie Baker Download Link : <http://costford.com/Brick%20work.pdf> ,

- 6] Rural House plans by Laurie Baker . Download link : <http://www.costford.com/Rural%20House%20Plans.pdf>
- 7] Shigeru Ban Projects
- 8] The Modulor by Le Corbusier
- 8] Structure and Architecture by Angus MacDonald
- 9] The making of the modern architect and Engineer by Ulrich Pfammatter
- 10] Form and Structure in Architecture by Alexander Zannos

**CO-PO mapped syllabi of B.Arch Course 2021-2022 – Architectural Building Construction and Materials**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**Outcomes for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Building Construction and Materials**

**Course Code: BARC 103**

**Sem 2**

**First Year**

**Course Objectives:**

This course intends to look at the subject of Building Construction as a story of how individual elements and components in architecture are articulated together to create assemblies that in relation to the form of the architectural object ultimately informs the tectonic expression. The tectonic expression being an externalized projection of meaning of the building, lends itself to be experienced by the body/ bodies that inhabit it, thereby imprinting itself in the consciousness of the user, who in turn affect it by their sheer presence. In the first year, the tectonic is observed and understood through materials and their materiality or even their material-realities. The course recognizes how factors such as the context, cost, inherent properties of materials, skills available and the market dynamics affect how we as architects come to choose materials which we use to write stories of/ for those we design for.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Understanding the role of Building elements in a system of construction that follow the mechanical behaviour of individual elements as well as the structural transfer of loads from one element to the other
CO2	Understand material properties, characteristics, costs, dimensions, joinery with the same material as well as other materials and sizes available in the market
CO3	Analytical understanding of the hierarchy and the articulation of Timber framed systems
CO4	Ability to imagine alternate materials that can be used to achieve similar tectonic and experiential requirements
CO5	Evaluation of structural articulation of materials through drawing plates and hands-on experiments

**Rubrics:**

USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture									
Year of Assessment : 2021-2022									
Year & Sem	Subject: Architectural Building Construction and Materials	University Subject Code	Sessional Marks:	Exercise 01: Marks out of	Credits	Date of submission	Upgrade 01	Upgrade 02	
FIRST YEAR - SEM 2		103	80 (Internal)		Studio (3) + Lecture (2) = 5	Multiple			
<b>Exercise: Title</b>	Tectonic Experiments through Building construction								
<b>Exercise Note / Task</b>	A comprehensive understanding of building systems and principles of construction based on locally available materials, skills and climatic conditions. The students are also expected to draft detailed construction plates, highlighting the materials and the details they choose use. The course also includes presentation of a student's understanding of materials and construction techniques through reports.								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	O++	O+	O	A	B	C	D	E	F
<b>Percentage</b>	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Data Gathering/ monitoring and collating</b>	All data to be collected from reliable sources with references included in the reports. Exceptional in showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected.	All data to be collected from reliable sources with references included in the reports. Showcasing well outstanding insights adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with most references included in the reports. Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Data collected is from adequate sources with most references included in the reports. Showcasing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Data collected is from adequate sources with most references included in the reports. Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Generic methods of analysis	Not informed process of adaptation of tools and frameworks

Depth of Inquiry and ability to generate analytical drawings	Exceptional analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Well curated outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Very well curated outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Excellent curation using outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation.	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent.	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent.	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
<b>Representation Technique and final submission</b>	Final presentation is complete with all process, concept, process and logic represented in original and innovative ways. The presentation is self-explanatory and shows an outstanding level of skill in arranging and organisation. The drawings and models are consistently of outstanding, quality.	Final presentation is complete with all process, concept, process and logic represented in innovative ways. The presentation is self-explanatory and shows an outstanding level of skill in arranging and organisation. The drawings and models are fairly consistently of excellent quality.	Final presentation is complete with all process, concept, process and logic represented. The presentation is self-explanatory and shows an outstanding level of skill in arranging and organisation. The drawings and models are fairly consistently of excellent quality.	Final presentation is complete with all process, concept, process and logic represented. The presentation is self-explanatory and shows an excellent level of skill in arranging and organisation. The drawings and models are fairly consistently of excellent quality.	Final presentation is complete with all process, concept, process and logic represented. The presentation is self-explanatory and shows very good levels of skill in arranging and organisation. The drawings and models are fairly consistently of good quality.	Final presentation is complete with a fair amount of process, concept, process and logic represented. The presentation is self-explanatory and shows good levels of skill in arranging and organisation. The drawings and models show a fair amount of clarity and skill.	Final presentation is complete with a satisfactory amount of process, concept, process and logic represented. The presentation is self-explanatory and shows satisfactory levels of skill in arranging and organisation. The drawings and models are of a satisfactory quality.	Final presentation is incomplete with the process, concept, process and logic not represented clearly. The presentation is unclear and illogical and shows poor levels of skill in arranging and organisation. The drawings and models are of poor quality.	
<b>Model Making and Analysis</b>	The models display an enthusiasm and effort to take on challenging and difficult levels of resolution. They break new ground in terms of their innovation and inventiveness and effort. They are exquisitely constructed, with a innovative and sophisticated understanding of material, structure, technique.	The models display an enthusiasm and effort to take on challenging levels of resolution. They are innovative and and inventive and display outstanding effort. They are excellently constructed, with a clear understanding of material, structure, technique.	The models display outstanding effort and rigour. They are excellently constructed, with a clear understanding of material, structure, technique.	The models display excellent effort and rigour. They are well constructed, with a clear understanding of material, structure, technique.	The models display a very good effort and rigour. They are well constructed, with a clear understanding of material, structure, technique.	The models display a good effort and rigour. They are constructed, with a fair understanding of material, structure, technique.	The models display a satisfactory amount effort and rigour. They are constructed, with a satisfactory understanding of material, structure, technique.	The models display a lack of effort or rigour. They are poorly constructed, with no understanding of material, structure, technique.	

	structure, technique.								
<b>Ability to demonstrate the Learnings from the discussions conducted in class</b>	Showcasing 100% ability to translate theoretical knowledge into practice	Showcasing 90% ability to translate theoretical knowledge into practice	Showcasing 80% ability to translate theoretical knowledge into practice	Showcasing 70% ability to translate theoretical knowledge into practice	Showcasing 65% ability to translate theoretical knowledge into practice	Showcasing 60% ability to translate theoretical knowledge into practice	Showcasing 55% ability to translate theoretical knowledge into practice	Showcasing 50% ability to translate theoretical knowledge into practice	Zero understanding and application of theoretical knowledge
<b>Attendance and participation in the discussions</b>	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence

	framed systems								
CO4	Ability to imagine alternate materials that can be used to achieve similar tectonic and experiential requirements	3	3	3	0	0	2	3	1
CO5	Evaluation of structural articulation of materials through drawing plates and hands-on experiments	3	3	3	1	3	1	3	0

COPO Mapping Setup for Sem 2, 2021-2022

CO-PO mapping for a course of B. Arch First Year Architectural Building Construction and Materials									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Understanding the role of Building elements in a system of construction that follow the mechanical behaviour of individual elements as well as the structural transfer of loads from one element to the other	2	3	3	0	2	3	3	2
CO2	Understand material properties, characteristics, costs, dimensions, joinery with the same material as well as other materials and sizes available in the market	3	3	3	0	0	3	3	2
CO3	Analytical understanding of the hierarchy and the articulation of Timber	2	3	3	0	0	1	3	0

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 204	<b>CREDITS</b>	3
<b>COURSE NAME</b>	Theory and design of structures 2	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Rajitha Gopinath, Neeraj Vakharia	<b>EXAM SCHEME</b>	Theory exam – 50 marks
<b>CLASS DAY/TIME</b>	Saturday 9:40 to 11:20	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	How does the structure want to behave under external forces? What are the internal resisting forces that are generated? What are its inherent properties that provide it the necessary capacity to resist the forces? This requires introduction to geometrical and material properties.
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<b>COURSE METHOD</b>	Introduction to deformation, axial forces, bending, shear force, rotation and other such concepts. Experimental Learning with discussions and problem solving to understand the basics of structural systems.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
week 1	09/04/2022	Understanding Bending Moment, Shear Force through an experimental set up comprising of weighing scale, and Types of Support & Loading Conditions. what are fixed, roller and hinged support?	Numerical	
week 2	16/04/2022	Previous topic		
week 3	23/04/2022	Properties of materials through stress strain curve. Elastic Limit of different materials.		
week 4	30/04/2022	Previous topic		
week 5	07/05/2022	Ways of Creating Inner Space: Introduction to trusses. This can be in conjunction with bldg. construction/bldg. technology classes wherein we use models made in those classes for study		
week 6	14/05/2022	Analysis of trusses wrt its nature of forces with method of joints and sections. Introduction to determinacy and how to calculate.		
week 7	21/05/2022	Previous topic & exercise	Hands on exercise	
week 8	28/05/2022	Theory of simple bending and its application. With exercise in class with ice cream sticks to interpret the nature of bending.		
week 9	04/06/2022	Online test	Class test	
week 10	11/06/2022	Revision		

<b>LEARNING OUTCOMES</b>	To understand basic theory of fundamental mechanics and support systems
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<b>READING LIST/ REFERENCES</b>	1) Why Buildings Stand Up by Mario Salvadori 2) Eccentric Structures in Architecture by Joseph Lim 3) Theory of Structures by R.S. Khurmi 5) Theory of Structures by S Ramamurtham 6) Building Structures Illustrated by Francis D.K.Ching 7) Structure as Architecture by Andrew W Charleson
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – *Theory and Design of Structures 2*

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delay the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project.
6. To enable the student to observe, experience, analyze space, its physicality, and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design.
8. To enable the student to break the boundary between abstract thought and material realities.
9. To enable students to discover multiple methods and tools to develop their own process of learning.
10. To engage the student in collective work to build a sense of shared responsibility.

### Outcomes for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)



5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Theory and Design of Structures 2**

**Course Code: BARC 204**

**Sem 2**

**First Year**

**Course Objectives:**

- Introduce students to the concepts of deformation, axial forces, bending, shear force, rotation, and other fundamental structural concepts.
- Facilitate experimental learning through discussions and problem-solving activities to help students grasp the basics of structural systems.
- Enable students to analyze trusses and understand their behavior under various loading conditions with the concept of determinacy and its significance in understanding the stability and behavior of structural systems.
- Familiarize students with the properties of materials through stress-strain curves, emphasizing the elastic limit of different materials.
- Provide a comprehensive understanding of the theory of simple bending and its practical applications in structural design.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Apply problem-solving skills to analyze and design trusses, considering their behavior under different loading conditions and optimizing their structural performance.
CO2	Comprehend the properties of materials and understand the significance of different materials in structural design.
CO3	Understanding the unique roles of architects and structural designers in the process of architectural design and construction and the interaction between the two

**Rubrics:**

Year of Assessment : 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks	Exercise 01: Marks out of	Credits	Date of submission	Upgrade 01	Upgrade 02
FIRST YEAR - SEM 2	TDOS2	BARC 204	204	50	50	3	Multiple		
Exercise: Title	Experiments to understand various Materials and geometries of the elements								
Exercise Note / Task	Report of the exercise and readings from experiments								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% -40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
Depth of Inquiry and ability to think intuitively	Exceptional analytical drawings and clarity in explaining the concept and architectural design intent	Well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Excellent curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
Exploring & designing	Showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing well outstanding insights adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing Outstanding insights using tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Generic methods of analysis	Not informed process of adaptation of tools and frameworks

Compilation for Report and readings	Very well formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Well formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Clear formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Very good formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Good formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Fairly formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Barely managed to get clarity of intent and study using poor diagrams and sketches	Less clarity in terms of ideas and processes to be followed	Absolute no clarity of thought and understanding of the subject
	Ability to demonstrate the Learnings from the discussions conducted in class	Showcasing 100% ability to translate theoretical knowledge into practice	Showcasing 90% ability to translate theoretical knowledge into practice	Showcasing 80% ability to translate theoretical knowledge into practice	Showcasing 70% ability to translate theoretical knowledge into practice	Showcasing 65% ability to translate theoretical knowledge into practice	Showcasing 60% ability to translate theoretical knowledge into practice	Showcasing 55% ability to translate theoretical knowledge into practice	Showcasing 50% ability to translate theoretical knowledge into practice
Attendance and participation in the discussions	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence

COPO Mapping Setup for Sem .....2

Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Apply problem-solving skills to analyze and design trusses, considering their behavior under different loading conditions and optimizing their structural performance.	1	3	2	0	0	0	2	0
CO2	Comprehend the properties of materials and understand the significance of different materials in structural design.	1	1	1	0	1	0	2	0
CO3	Understanding the unique roles of architects and structural designers in the process of architectural design and construction and the interaction between the two	2	1	1	2	0	1	3	2

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 205	<b>CREDITS</b>	2
<b>COURSE NAME</b>	HUMANITIES (2021-22)	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Hussain, Shweta	<b>EXAM SCHEME</b>	THEORY PAPER 50 MARKS
<b>CLASS DAY / TIME</b>	Thursday 8 am	<b>NON-CLASS TIME</b>	2 hours

<b>COURSE DESCRIPTION</b>	This course will enable students to think about some commonly used terms as 'concepts', and to examine them through binary constructions. Through this 'dialectical' method, students will learn how to develop concepts theoretically. Through the course students will also learn to seek understanding of particular phenomena through the use of general concepts.
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<b>PEDAGOGIC INTENT / LEARNING OBJECTIVES</b>	1) Thinking about particular phenomena through general concepts 2) Using the dialectical method to investigate ideas 3) Exploring ideas through debate and to articulate them in written form
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<b>COURSE METHODOLOGY</b>	The course will be a weekly lecture and discussion seminar - 2 hours per session. Each binary construction will take up two sessions. Each class will consist of different types of reading, writing and debating exercises.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS
1	7 <sup>th</sup> Apr	Introduction: the dialiectic as a method	
2	14 <sup>th</sup> Apr	Public and private	
3	21 <sup>st</sup> Apr		
4	28 <sup>th</sup> Apr	Tradition and modernity	
5	5 <sup>th</sup> May		
6	12 <sup>th</sup> May	Masculine and feminine	
7	19 <sup>th</sup> May		
8	26 <sup>th</sup> May	Order and disorder	
9	2 <sup>nd</sup> June		
10	9 <sup>th</sup> June	Concluding seminar	
<b>EVALUATION CRITERIA</b>	The assignment (case study) will be given 75% of the weight. Class participation will be given 25% of the grade.		

**CO-PO mapped syllabi of B.Arch Course 2021-2022 – HUMANITIES SEM 2**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**Os for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. (Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Humanities**  
**Course Code: BARC205**  
**Sem 2**

**Course Objectives:**

- 1) Thinking about particular phenomena through general concepts
- 2) Using the dialectical method to investigate ideas
- 3) Exploring ideas through debate and to articulate them in written form

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To analyze particular phenomena through general concepts
CO2	Using the dialectical method or relational ideas to investigate phenomena
CO3	Exploring ideas of social theory through debate and to articulate them in written form

**Rubrics:**

USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture									
Year of Assessment: 2021-22									
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks:	Exercise 01 : Marks out of	Credits	Date of submission		
FIRST YEAR - SEM 2	Hum	BARC205		50	50				
<b>Exercise: Title</b>	Class case study presentations								
<b>Exercise Note / Task</b>	Present a case-study in groups in an audio-visual format								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
<b>(A) Interpretation of Case Study</b>	Excellent understanding of the case, ability to identify the determinants and explain them lucidly, is able to connect the case to contemporary examples	Very good understanding of the case, ability to identify the determinants and explain them well, is able to connect the case to contemporary examples	good understanding of the case, ability to identify the determinants and explain them competently	good understanding of the case, ability to identify the determinants and explain them adequately	A fair understanding of the case, ability to identify the determinants and explain them adequately	A fair understanding of the case, ability to identify the determinants	An minimal understanding of the case, somewhat able to identify determinants	An minimal understanding of the case,	Little or no understanding of the case
<b>(B) Presentation Quality as a whole</b>	Outstanding organization of the presentation, exceptionally clear presentation combined with creative use of visual aids	Exceptionally well structured, exceptionally clear presentation combined with creative use of visual aids	Well structured, exceptionally clear presentation combined with good use of visual aids	Very Clear presentation, combined with good use of visual aids	Well organized presentation, combined with competent use of visual aids	Manage to convey the ideas adequately	Some difficulty in expressing ideas, acceptable	Difficulty in explaining	poorly constructed and unable to convey ideas
<b>(C) Participation and conduct in class</b>	90% attendance or more, active participation in class and excellent conduct overall	90% attendance or more, good participation in class and very good conduct overall	80% - 90% attendance, active participation in class and excellent conduct overall	80% - 90% attendance, good participation in class and very good conduct overall	70% -80% attendance, active participation in class and excellent conduct overall	70% -80% attendance, good participation in class and very good conduct overall	50% - 70% attendance	50% - 70% attendance	50% attendance or less

CO-PO mapping									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To analyze particular phenomena through general concepts	3	3	2	1	2	2	1	1
CO2	Using the dialectical method or relational ideas to investigate phenomena	2	3	1	2	2	2	1	1
CO3	Exploring ideas of social theory through debate and to articulate them in written form	3	3	2	2	2	3	1	1

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	EVS2	<b>CREDITS</b>	2
<b>COURSE NAME</b>	ENVIRONMENTAL STUDIES II	<b>SESSIONAL MARKS</b>	50 marks per semester
<b>FACULTY</b>	MINAL Y, KIMAYA K	<b>EXAM SCHEME</b>	Internal
<b>CLASS DAY/TIME</b>	TUESDAY   9.40-11:20 AM IST	<b>NON-CLASS TIME</b>	2 hours per week

<b>PEDAGOGIC INTENT</b>	The Environmental studies course will attempt to familiarise students with their environmental context, starting from their immediate neighbourhoods to the larger context of the city and region. It will try to create a better understanding of environmental issues and look critically at contemporary environmental approaches and practices. Through an analysis of case studies of sustainable practices and communities from around the world, it will assess various alternatives and undertake exercises in the practical application of ecological ideas in everyday life. There will be an exploration of concepts such as natural resources, the relationship between built environments and their natural setting, agro-ecological systems, traditional farming practices, self-sustaining landscapes, urban biodiversity, habitats, forest foods, urban foodscapes and the role these could play in building resilient systems which would help in the conservation of urban ecologies while also managing the problem of urban waste. The course will undertake a critical inquiry into perceptions ideologies, philosophies and movements concerning the natural environment; it will look at the politics of the environment and the environmental movements, from carbon trading to conservation, sustainability and green consumerism. It will also explore the relationship of city with food, farming and productive landscapes. It will attempt to examine the consequences of the industrialisation of the food system and its various impacts and try to trace the roots of the impending agrarian ecological and food crisis. It will introduce participants to aspects such as the politics of food, and various movements centered around food in the city including case studies of initiatives aimed towards achieving food independence and alternative community-based practices from around the world.
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<b>COURSE METHODOLOGY</b>	The course will be conducted like a studio with a series of hands on practical exercises and projects where students will be asked to rethink and suggest alternatives to conventional systems. Through these projects combined with neighbourhood and city walks, site visits, case studies, lectures film screenings and discussions. It will include a demonstration of ecological farming practices with a series of hands on practical exercises and projects where students will be asked to rethink and suggest alternatives to conventional systems. Through an assessment of various alternatives, it will undertake exercises to demonstrate how urban systems can be made more productive and encourage the design of production closer to our homes. It will also evaluate the immense potential of these systems if scaled up to occupy urban green space at the neighbourhood, community or city level.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	05/04/2022	Student Presentation and Discussion on IDS Work on Climatic Response	Urban Farming	50%
2	12/04/2022	Introduction to Passive Design Techniques Part 1		
3	19/04/2022	Introduction to Passive Design Techniques Part 2		
4	26/04/2022	Case studies on climate responsive architecture-Part I	Case study on passive techniques	50%
5	10/05/2022	Case studies on climate responsive architecture-Part II		
6	17/05/2022	Introduction to Micro climate, Urban Heat Island Effect and site strategies		
7	24/05/2022	The Story of Food- Deciphering the connections		
8	31/05/2022	Permaculture and Urban Food Movements		
9	07/06/2022	Urban Waste management	Submission of assignment	
10	14/06/2022	Discussion   Marking   Late Submissions		

<b>LEARNING OUTCOMES</b>	The course will equip the students to: I) create a better understanding of environmental issues around them II) critically analyse contemporary environmental approaches and practices illustrate the human-environmental interdependency and be able to analyse the shifting responses over time
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<b>READING LIST/ REFERENCES</b>	Cradle to cradle, Small is Beautiful, Greening Asia.
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – Environmental Studies

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delay the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture).

**Course:** Environmental Studies 2  
**Course Code:** BARC 206  
**Sem** 2  
**Year** 21-22

**Course Objectives:**

After macro-level understanding of interrelationship between biodiversity, ecosystem, community and habitat, this semester will focus on food cycle and permaculture, nature and built, climatology, elements of climate, and how architectural design principles have responded to different climate zones. The passive design techniques will be explored with help of a range of case studies.

**Course Outcomes (CO):**

Course Outcome (CO)	Description
CO1	To critically focus on concepts of food cycle and permaculture, nature and built, climatology, elements of climate, and how architectural design principles have responded to different climate zones.
CO2	To explore concepts of alternative techniques, renewable sources as a part of environment sensitive architecture and apply sustainable practices.
CO3	To engage with the ideas and concepts that have shaped environment-sensitive architectural thinking.

**Rubrics:**

USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture									
Year of Assessment : 2021-2022									
Year & Sem	Subject:	University Subject Code	Sessional Marks :	Exercise 01: Marks out of	Credits:	Date of submission	Upgrade 01	Upgrade 02	
SECOND YEAR-SEM 3	EVS	BARC 206	50	50	2	07.06.2022			
Exercise: Title	Urban Farming								
Exercise Note / Task	Hands on exercise on Kitchen and urban farming, permaculture, composting and harvesting								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
<b>Understanding of environment and their integration with other systems as well as with space</b>	1)Complete understanding of systems 2)its integration with other system 3) its hierarchy in planned space	1)Very good understanding of systems 2)its integration with other and its position in planned space.	Good understanding of systems and its integration and its position in planned space.	Fairly good understanding of systems and its integration and its position in planned space.	1)Understanding of system is seen along with other systems 2) lacking spatial integration.	1)Lesser understanding of system is seen along with other systems 2) lacking spatial integration.	1)Poor understanding of system. 2)No understanding of integration with other systems.	Extremely poor understanding of system.	Non-Submission
<b>Representation Technique and final submission</b>	Logical and semantic representation	Logical representation	Good representation in all aspect	Good representation in all aspect	Fairly represented in all aspect	The drawings could be understood	Representation needed clarification	Drawings not clear enough	Non-Submission

<b>Attendance, time management and participation in Studio</b>	Attends 95% of total classes	Attends 90% of total classes	Attends 85% of total classes	Attends 80% of total classes	Attends 75% of total classes	Attends 70% of total classes	Attends 60% of total classes	Attends 55% of total classes	Attends less than 50% of total classes
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COPO Mapping Setup for Sem 2

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To critically focus on concepts of climatology, elements of climate, and how architectural design principles have responded to different climate zones.	3	2	2	1	1	1	1	1
CO2	To explore concepts of passive design techniques as a part of climate responsive architecture.	3	2	2	1	1	1	1	1
CO3	To engage with the ideas and concepts that have shaped environment-sensitive architectural thinking.	1	2	2	2	1	1	3	2

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 207	<b>CREDITS</b>	6
<b>COURSE NAME</b>	Architectural Representation and Detailing-II	<b>SESSIONAL MARKS</b>	150
<b>FACULTY</b>	ANKUSH, KARAN, AISHWARYA, MAMTA, MANSI, SANDEEP, SHIRISH, SONAL	<b>EXAM SCHEME</b>	INTERNAL
<b>CLASS DAY/TIME</b>	8:00 to 11:20 am, 46 hours	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	Developing the ability to visualize and learn hand-drafting skills
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<b>COURSE METHODOLOGY</b>	The course is an introduction to the technical tools for representation. It is a working studio and all course work will be completed in the studio hours. The course will cover orthographic projections, axonometric, isometric and perspective projections as a method to draw and represent spaces. The mode of teaching will be through combination of lectures and studio. The assignments will introduce variations into drawing the objects/ space so that each student generates solutions unique to their designs.
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<b>LEARNING OUTCOMES</b>	The students should be able to learn how to use the instruments and tools for drafting and model making, to be able to imagine and represent a 3 dimensional object/ space on paper through the taught methods.
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LECT	DATE	TEACHING CONTENT
1	13.04.22 WEDNESDAY	Spiral Geometries- Spiral Stair
2	20.04.22 WEDNESDAY	The Grid Exercise- STAGE 1 Introduction, making the grid box, drawing sections.
3	27.04.22 WEDNESDAY	The Grid Exercise- STAGE 1 Introduction, making the grid box, drawing sections.
4	08.06.22 WEDNESDAY	The Grid Exercise- STAGE 2 Presentation of Models, ideas of distortion
5	15.06.22 WEDNESDAY	The Grid Exercise- STAGE 2-Presentation of Models, ideas of distortion
6	22.06.22 WEDNESDAY	The Grid Exercise- STAGE 2 Presentation of Models, ideas of distortion
7	29.06.22 WEDNESDAY	Final Exhibition of Work- STAGE 3
8	06-07-22 WEDNESDAY	Lecture- Revision Class. Reading architectural drawings
9	13-07-22 WEDNESDAY	Revision + Submission Week



**CO-PO mapped syllabi of B.Arch Course 2021-2022 – Architectural Representation and Detailing II**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive ways of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete)
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. (Self / Other)

5. To instill in students, the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Representation and Detailing 1**

**Course Code: BARC 207**

**Sem II**

**First Year**

**Course Objectives:**

This term the course moves beyond the problems of representing space and form through conventional architectural drawing techniques into drawing as an operative or constructive act. It exposes students to techniques of constructing and representing complex curved forms using techniques of orthographic projections, and the making of physical models.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Understand the techniques and methods for a comprehensive architectural representation.
CO2	Enable students to learn how to use tools for representing spatial ideas, like drafting and model making.
CO3	Enable students to create, and manipulate three dimensional form and space by use the tools of representation.
CO4	Facilitate students to create orthographic projections, axonometric and isometric tools of representation of architecture.
CO5	

Rubrics:

USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture										
Year of Assessment: 2020-2021	Subject: Architectural Representation and Detailing II	University Subject Code	Sessional Marks:	Exercise 01: Marks out of	Credits	Date of submission	Upgrade 01	Upgrade 02		
FIRST YEAR - SEM 2		207	150 (Internal)		6	Multiple				
Exercise: Title	TBD									
Exercise Note / Task	-									
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail	
Grade	O++	O+	O	A	B	C	D	E	F	
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%	
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0	
Area of Evaluation										
Ability to understand, follow and apply an appropriate/correct method of drawing	Exceptional understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been employed correctly. Adequate no. of views/details have been drafted to understand the object holistically. No duplicate methods have been used to achieve the final result.	Outstanding understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been employed correctly. Adequate no. of views/details have been drafted to understand the object holistically. No duplicate	Sophisticated understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been attempted well. Adequate no. of views/details have been drafted to understand the object holistically.	Excellent understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been attempted well. No. of views/details employed are good enough to understand the object holistically. No duplicate methods have been used to achieve the final result. Most of the steps of the method has been employed in a sequential manner	Very good understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been attempted well. No. of views/details employed are good enough to understand the object holistically. No duplicate methods have been used to achieve the final result. Most of the steps of the method has been employed in a sequential manner	Good understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been attempted satisfactorily. No. of views/details employed are satisfactory to	Fair understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been attempted satisfactorily. No. of views/details employed are satisfactory to	Satisfactory understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been attempted satisfactorily. No. of views/details employed are satisfactory to	Poor understanding of method is displayed through the drawing. The technique of parallel projection is used to represent the object. If alternate methods are used, they have been attempted satisfactorily. No. of views/details employed are satisfactory to	

	Every step of the method employed has followed a sequential process of arrival and is contingent to the next step.	methods have been used to achieve the final result. Every step of the method employed has followed a sequential process of arrival and is contingent to the next step.	No duplicate methods have been used to achieve the final result. Most of the steps of the method has been employed in a sequential manner				understand the object holistically. No duplicate methods have been used to achieve the final result. Not all steps of the method have been employed in a sequential manner.	the method have been employed in a sequential manner.	understanding	result. Lack of sequential understanding. Lack of effort in rigour of the drawing.
	All the criteria below have been exceptionally employed with great rigour, precision and neatness. The presentation is self-explanatory and shows an exceptional level of skill in arranging and organisation.	Most of the criteria below have been exceptionally employed with great rigour, precision and neatness. The presentation is self-explanatory and shows an outstanding level of skill in arranging and organisation.	Most of the criteria below have been employed with great rigour, precision and neatness. The presentation is self-explanatory and shows a sophisticated level of skill in arranging and organisation.	Most of the criteria below have been employed with rigour, precision and good neatness. The presentation is self-explanatory and shows an excellent of skill in arranging and organisation.	Most of the criteria below have been employed with rigour, precision and satisfactory neatness. The presentation shows a very good level of skill in arranging and organization consistently of very good quality.	Most of the criteria below have been employed with rigour, precision and satisfactory neatness. The presentation shows a good level of skill in arranging and organisation.	Not all of the criteria below have been employed with rigour, precision and satisfactory neatness. The presentation shows a fair level of skill in arranging and organisation.	Not all of the criteria below have been employed with rigour, precision and satisfactory neatness. The presentation shows a fair level of skill in arranging and organisation.	Not all of the criteria below have been employed. Satisfactory levels of rigour, precision and neatness. The presentation is not self-explanatory and requires to achieve a satisfactory level of skill in arranging and organisation.	Most of the criteria below have not been employed. Lack rigour, precision and neatness. The presentation lacks clarity and shows poor level of skill in arranging and organisation.
	<b>Line quality (line types, line weights; these include both drafted lines and free-hand lines, object lines, section lines, elevation lines, centre lines, hidden lines, dotted/dashed line, hatches, material indication)</b>									
	<b>Annotation lines (line type, line weight, arrow head, these include - guide lines, construction lines, dimension lines, extension lines, leaders, break line,</b>									

border lines, cutting-plane line/ arrow, slopes and gradations)									
Annotation text (Size, Style - Template texts, labelling, lettering quality, level demarcation, dimensioning, call-outs)									
Sheet composition (template design, sheet layout, no. of details to holistically explain the object)									
Sheet information (north sign, graphic scale, notes, student's name, roll no., sheet title, drawing unit dimension note, legends, graphic symbols)									
<b>Model Making and Analysis</b>	The models display an enthusiasm and effort to take on challenging and difficult levels of resolution. They break new ground in terms of their innovation and inventiveness and effort. They are exquisitely constructed, with a innovative and sophisticated understanding of material, structure, technique.	The models display an enthusiasm and effort to take on challenging levels of resolution. They are innovative and inventive and display outstanding effort. They are excellently constructed, with a clear understanding of material, structure, technique.	The models display outstanding effort and rigour. They are excellently constructed, with a clear understanding of material, structure, technique.	The models display excellent effort and rigour. They are well constructed, with a clear understanding of material, structure, technique.	The models display a very good effort and rigour. They are well constructed, with a clear understanding of material, structure, technique.	The models display a good effort and rigour. They are well constructed, with a clear understanding of material, structure, technique.	The models display a fair amount effort and rigour. They are constructed, with a fair understanding of material, structure, technique.	The models display a satisfactory amount effort and rigour. They are constructed, with a satisfactory understanding of material, structure, technique.	The models display a lack of effort or rigour. They are poorly constructed, with no understanding of material, structure, technique.
<b>Time management and participation in Studio</b>	100 %	99% -95%	94-91%	90-85%	84-81%	80-75%	74-70%	69-60%	Below 60%

COPO Mapping Setup for Sem 2, 2021-2022

CO-PO mapping for a course of B. Arch First Year Architectural Representation and Detailing II									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Understand the techniques and methods for a comprehensive architectural representation.	2	3	3	0	1	3	3	2
CO2	Enable students to learn how to use tools for representing spatial ideas, like drafting and model making.	1	2	3	0	0	0	3	1
CO3	Enable students to create, and manipulate three dimensional form and space by use the tools of representation.	3	1	3	1	0	0	2	3
CO4	Facilitate students to create orthographic projections, axonometric and isometric tools of representation of architecture.	2	1	3	0	0	0	3	0
CO5									

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 220	<b>CREDITS</b>	6 (split across the course of Architectural Design (2CP), Architectural Theory (3CP) and History (1 CP))
<b>COURSE NAME</b>	College Projects (Architectural Theory and History)	<b>SESSIONAL MARKS</b>	100 (50 (AT) + 30 (AD) + 20 (History))
<b>FACULTY</b>	Architectural Theory (Sonal Sundararajan, Ankush Chandran) History (Ginella George and Sarah George)	<b>EXAM SCHEME</b>	NA
<b>CLASS DAY/TIME</b>	Architectural Theory - TUESDAY, 8:00am to 9:40 pm History - THURSDAY, 9:40 am to 11:20 am	<b>NON-CLASS TIME</b>	6 hours

### COURSE 1 – Architectural Theory

<b>COURSE CODE</b>	BARC 220	<b>CREDITS</b>	2CP
<b>COURSE NAME</b>	College Projects (Architectural Theory)	<b>SESSIONAL MARKS</b>	30
<b>FACULTY</b>	Sonal Sundararajan and Ankush Chandran	<b>EXAM SCHEME</b>	NA
<b>CLASS DAY/TIME</b>	TUESDAY, 8:00am to 9:40 pm	<b>NON-CLASS TIME</b>	3

<b>PEDAGOGIC INTENT</b>	The course intends to familiarise students with a history of modernism, of ideas and examples of ideas in art and architecture. It exposes students to ideas in art and architecture and their tectonic expression.
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<b>COURSE METHOD</b>	Every class will consist of a presentation by students followed by a lecture by faculty to discuss the larger ideas embedded within objects
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
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Week 1	05/04/2022	Idea of the house as machine - Beginnings of Abstraction, The machine and function as aesthetic, in art and architecture. Chaplin, Tati, Impressionism, Cubism, Shchroder House, Villa Savoye, Maison de Verre le Corbusier- Towards a New architecture, Futurist manifesto, House as abstract - the image of the home (semiotic object)		
Week 2	12/04/2022	Idea of the house as machine - Beginnings of Abstraction, The machine and function as aesthetic, in art and architecture. Chaplin, Tati, Impressionism, Cubism, Shchroder House, Villa Savoye, Maison de Verre le Corbusier- Towards a New architecture, Futurist manifesto, House as abstract - the image of the home (semiotic object)		
Week 3	19/04/2022	Idea of the house as machine - Beginnings of Abstraction, The machine and function as aesthetic, in art and architecture. Chaplin, Tati, Impressionism, Cubism, Shchroder House, Villa Savoye, Maison de Verre le Corbusier- Towards a New architecture, Futurist manifesto, House as abstract - the image of the home (semiotic object)		
Week 4	26/04/2022	Language and meaning in art and architecture, Pop Art, Dada, and parallels in architecture. Saussure, Works by Marcel Duchamp, AndyWarhol, Linder Sterling, Richard Hamilton. Vanna Venturi House, House VI by Eisenman, Rachel Whiteread, Gordon Ma[a Clark.		
Week 5	03/05/2022	HOLIDAY		
Week 6	10/05/2021	Semiotics in art and architecture. Saussure, Works by Marcel Duchamp, AndyWarhol, Linder		

		Sterling, Richard Hamilton. Vanna Venturi House, House VI by Eisenman, Rachel Whiteread, Gordon Ma[Clark].
Week 7	17/05/2022	Semiotics in art and architecture. Saussure, Works by Marcel Duchamp, Andy Warhol, Linder Sterling, Richard Hamilton. Vanna Venturi House, House VI by Eisenman, Rachel Whiteread, Gordon Ma[Clark].
Week 8	24/05/2022 2	Poetics of Space, Gaston Bachelard, Sigmund Freud, Georges Bataille
Week 9	31/05/2022	House as metaphor and experience Poetics of space, Phenomenology and Surrealism in Art and Architecture Raimund Abraham. Louis Barragan Salk Institute, Exeter - Louis Kahn Tadao Ando - Church of Light
Week 10	07/06/2022 2	Poetics of Space Class Assignment
Week 11	14/06/2022	Poetics of Space Class Assignment and discussion

<b>LEARNING OUTCOMES</b>	An attitude of critical reflection and thinking about the world that surrounds them
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<b>READING LIST/ REFERENCES</b>	Art since 1900s 23 Architecture Films
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## COURSE 2 - History

<b>COURSE CODE</b>	BARC 220	<b>CREDITS</b>	1 CP + 1 HU
<b>COURSE NAME</b>	History	<b>SESSIONAL MARKS</b>	20
<b>FACULTY</b>	Ginella George, Sarah George	<b>EXAM SCHEME</b>	None

<b>CLASS DAY/TIME</b>	Thursday/ 9.40 - 11.20am	<b>NON-CLASS TIME</b>	
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<b>PEDAGOGIC INTENT</b>	<p>TENET OF COSMOLOGY   PARADIGM OF BELIEF AND MYTH</p> <p>History of Egyptian Architecture   History of Buddhist Architecture   History of Mycenaean Architecture   History of Persian Architecture   Indian Temples</p> <p>The history of architecture for first three years needs to correspond to the larger pedagogic structure of theory and design learning i.e Spatial, Conceptual, Critical aspects of history of architecture. These aspects required to be mobilized through various spectrums of thoughts. Instead of learning history of architecture through time line, it is proposed to establish learning through simultaneous geographical section.</p>
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<b>COURSE METHODOLOGY</b>	The objective of the course is to bridge the distance between history as a construction of cultural identities and history as a material expression of the built object. The course attempts to discuss the ideas that lead to a production of architecture. History is thus, seen and discussed as an understanding of processes - an intersection of belief, technology and social structure.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	07/04/2022 2	Persian Architecture  Nature-myth as determinants, Palace		
2	14/04/2022 2	Persian Architecture  Vault, dome - serai, gardens, palaces		
3	21/04/2022 2	Egyptian Architecture  Cosmological diagram, Temple		
4	28/04/2022 2	Egyptian Architecture + Indian Temples  Cosmological diagram, Temple		

5	05/05/2022 2	Egyptian Architecture + Indian Temples  Stone – temples, pyramids, funerary temples
6	06/05/2022 2	Introduction to the Assignment
7	26/05/2022 2	Task 1 of Assignment – Selection of structure
8	02/06/2022 2	Task 2 of Assignment – Secondary source data collection
9	09/06/2022 2	Task 3 of Assignment – Drawing space through different attributes
10	16/06/2022 2	Final Submission – Assignment

<b>LEARNING OUTCOMES</b>	<p>1. Understanding Architecture as an outcome of socio cultural processes</p> <p>2. Writing Architectural History</p> <p>3. Unpacking history as interpretations rather than a sacred record</p>
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<b>READING LIST/ REFERENCES</b>	<p>1. Brown, Percy. <i>Indian Architecture (Buddhist And Hindu Period)</i>. Read books (2<sup>nd</sup> ed. Edition 2010)</p> <p>2. Fletcher, Bannister, Sir. <i>History of Architecture</i>, Oxford: Architectural Press, (1996)</p>
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – College Projects (Architecture Theory + Architecture Design + History)

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### Outcomes for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete)
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

CO4	Enabling the student to question the role and purpose of history in architecture
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**Course 1: Architecture Theory (3CP)**

**Course Code: BARC 220**

**Sem 1**

**First Year**

**Course Objectives:**

The course intent is to sharpen a students critical faculties. Students are exposed to the history of the modern movement in art and architecture.

**Course 2: History (1HU + 1CP)**

**Course Code: BARC 220**

**Sem 2**

**First Year**

**Course Objectives:**

- To understand architecture as an outcome of socio cultural processes.
- To unpack histories as interpretations rather than as a text.
- To write an architectural history.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To understand concepts and ideas that have shaped the world that surrounds them and to evaluate these ideas as they emerge out of socio-economic structures
CO2	To recall/remember ideas and key works in the history of Art and Architecture
CO3	To critically analyse and evaluate works of art and architecture, with respect to the ideas that shape them, forms and expression.
CO4	To understand published architectural theoretical works by architects and to be able to apply them as references to one's individual approach.

**Rubrics for College Projects Course 1 (Architectural Theory) :**

<b>Year of Assessment : 2021-2022</b>	<b>USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture</b>								
<b>Year &amp; Sem</b>	<b>Subject:</b>		<b>University Subject Code</b>	<b>Sessional Marks: max 100</b>	<b>Exercise : Marks out of</b>	<b>Credits</b>	<b>Date of submission</b>		
<b>FIRST YEAR - SEM2</b>	<b>College Projects (Architectural Theory)</b>		<b>BARC 220</b>	50		2 College Projects	One per week		
<b>Exercise: Title</b>	Poetics of Space- Writing Assignment								
<b>Exercise Note / Task</b>	Each student writes a 500 word description of a spatial experience that they remember. The text must make relationships between the form material structure of the space and experiences of the body.								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Writing Assignment</b>	1) Extremely articulate in framing the area for inquiry. 2) Very clear structure for presentation. 3) Well researched	1) Very articulate in framing the area for inquiry. 2) Clear structure for presentation. 3) Well researched	1)Clear and Articulate in framing the area for inquiry. 2) Well researched structure for presentation.	1) There is clarity in the area of inquiry 2) Research and structure for presentation is fairly good.	1) The area of inquiry is fairly good 2) Research and structure for presentation can be better.	1) The area of inquiry is good 2) Research and structure for presentation is fair.	1) There is clarity in the area of inquiry 2) Research and structure for presentation is found lacking	1)There is potential for an area of inquiry but needs more clarity. 2) No research and structure for presentation	Non submission
<b>Attendance and Participation</b>	Attends less than 95% of total classes	Attends less than 90% of total classes	Attends less than 85 % of total classes	Attends less than 75 % of total classes	Attends less than 70 % of total classes	Attends less than 65 % of total classes	Attends less than 60 % of total classes	Attends less than 55 % of total classes	Attends less than 50 % of total classes

**Rubrics for College Projects Course 2 (History):**

<b>Year of Assessment : 2021-2022</b>	<b>USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture</b>									
<b>Year &amp; Sem</b>	<b>Subject: History</b>	<b>University Subject Code</b>	<b>Sessional Marks:</b>	<b>Exercise 01: Marks out of</b>	<b>Credits</b>	<b>Date of submission</b>	<b>Upgrade 01</b>	<b>Upgrade 02</b>		
<b>FIRST YEAR - SEM 1</b>		<b>120</b>	<b>20</b>		<b>1 CP + 1HU</b>					
<b>Exercise: Title</b>	Spatial understanding of a historic building									
<b>Exercise Note / Task</b>	Students have to select a historic structure of their choice and specify atleast three parameters to analyse the structure.									
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>	
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>	
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0	
<b>Area of Evaluation</b>										
<b>Selection of parameters and representation</b>	1) Extremely articulate in framing parameters. 2) Very clear structure for presentation. 3) Well researched	1) Very articulate in framing parameters. 2) Clear structure for presentation. 3) Well researched	1)Clear and Articulate in framing parameters. 2) Well researched structure for presentation	1) There is clarity in the parameters.2) Research and structure for presentation is fairly good.	1) The parameter are fairly good 2) Research and structure for presentation can be better	1) The parameters are good 2) Research and structure for presentation is fair	1) There is clarity in the parameters. 2) Research and structure for presentation is found lacking	1)There is potential for the parameters but needs more clarity. 2) No research and structure for presentation	Non submission	
<b>Participation in class</b>	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes	

**COPO Mapping Setup for Sem 2, 2021-2022**

CO-PO mapping for a course of B. Arch First Year College Projects									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To understand concepts and ideas that have shaped the world that surrounds them and to evaluate	2	0	0	3	3	3	3	1



	these ideas as they emerge out of socio-economic structures								
CO2	To recall/remember ideas and key works in the history of Art and Architecture	3	2	2	1	0	3	3	2
CO3	To critically analyse and evaluate works of art and architecture, with respect to the ideas that shape them, forms and expression.	3	2	2	1	0	3	3	2
CO4	To understand published architectural theoretical works by architects and to be able to apply them as references to one's individual approach.	3	0	3	2	0	0	0	3
CO5	Enabling the student to question the role and purpose of history in architecture	3	3	3	1	0	3	1	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
0 – No Correlation

# Program Specific Objectives

1. To enable the students to gain confidence to be able to script their own trajectories of learning and equip them with specific methods and tools to evolve their own process of learning.
2. To challenge students to be able to identify their interest and engage with the regional, cultural, social and environmental questions of inquiry
3. To exhibit students to diverse modes of architectural expression across regions and develop their sensorial engagement.
4. To instill holistic learning by way of integrating design and technology within one space.
5. To engage students to acquire skills to perform as an architect and instill holistic ways of learning and engage in finding ways of participation in the improvement of our spatial environment.
6. To enable students to engage with the intuitive as well analytical modes of learning.
7. To encourage students to elucidate their own value systems in order to envision an ethical mode of design production.

# Second Year

# Second Year

## Pedagogic Intent

Primary Dialectical Questions : Self - Other / Analytical - Intuitive / Individual - Collective / Abstract - Empirical / Technical - Social

While the First Year challenges many of the preconceptions of the self and of architecture that the students come with, the second year is a space where the student is given the confidence to be able to script her own trajectories of learning through her interests. As such it is an important space for enabling the 'Agency of the Learner'. This agency can be activated through processes where the student is actively involved in the creation of knowledge whether that be in modes of reading contexts or developing their own processes. These trajectories are enabled by the courses by the provision of scaffoldings that could take the form of specific methods and tools. The important learning objective of the second year is to instil in the student a sense of confidence about performing as an architect, with an ability to understand that faced with a challenge they can through a process of observation, analysis and design find ways of participating in the improvement of our spatial environment.

## Design Studios

### *Technological Brief*

Courses: Architectural Design, Allied Design,

The Second Year Design Studio is a space where students are encouraged to arrive upon architectural gestures through processes that create a framework for dialectical analysis between the concrete specific characteristics of a place and more abstract and/or poetic ways of reading.

Within these the student is enabled to write their own brief for intervention. Architecturally the scales of the project begin with architectural gestures in the first semester with typological exploration in the second. The design of the studios allows for every student to determine her own trajectory and process. In both cases it is important to structure the process as a scaffold upon

which the student traces her own path. This scaffolding will have certain benchmarks for different stages by which the path can be designed based on the journey of the student. The second semester project often dovetails with the Measured Drawings done on the study trip. In both projects there is often an attempt to introduce the students to contexts and communities that are unfamiliar to them. It is hoped that through this process they also develop an empathetic relationship with communities that might at first glance seem completely different from them. It is these contexts that the students are asked to arrive upon architectural interventions. The kinds of projects that emerge investigate imaginations of the domestic, community and the role of architecture. The Allied design studio is imagined as a Skill Lab where the students would arrive upon formal strategies through the investigation of a material through acts of making. It is a space for intuitive and hands-on learning in the beginning that leads to design strategies in the latter half.

## The Technology and Representation Studios

### *Tactile and Tectonic*

Tactile and Tectonic

Courses: Technology Studio, Environmental Studies, Technology Lecture 1, Technology Lecture 2, Theory of Structures, Tectonic Studies

The Second Year Technology studio takes the largely intuitive understanding of technology gained in the First Year and layers it with more analytical frameworks. Exercises encourage students to discover the principles of the structure and their manifestations. Measured drawing exercises are emphasised so that students are able to make the connection between the observed and the represented. The study trip also allows the student to see material cultures as tectonic solutions along

with construction processes that emerge within specific geographic social and economic systems. This year also looks at introducing the students to resources and their relationship with building systems like water and energy. Simulated building workshops and measured documentation of study trips enables the above learning objectives along with field trips, lectures using demonstration tools and case examples.

## The Study Trip

The study trip focuses on the relationship between context, climatic, geographic and cultural to architectural form and tectonics using detailed measured drawings. Contexts are chosen from the pre-independence era all over the country. There is also an attempt made by the studio to create knowledge about sites and contexts that have been ignored by mainstream writings of architectural history. These drawings become the basis of an exhibition and publications that add to the archive of architectural history in the country.

## Architectural Theory

Courses: Sources of the Self (Visual Studies) , Thinking Through Form ( Architectural Theory)

The course intends to expose students to the concerns / concepts / methods and tools of cultural practices and allow them to analyse them critically with respect to their contexts. The focus of the year is on twentieth century cultural practices and attempts to bridge disciplines through common concerns. Another focus is on unpacking concepts of the contemporary through focusing on ideas of 'Indian modernity'. The course will examine some of the main theoretical concerns of cultural practices in the 20th Century. Through a historical lens it will draw parallels between the world of ideas, historical contexts, cultural practices and architecture. The course will be loosely structured as a history of 20th century architecture covering the modern and 'post-modern' moments. The course will be structured as a seminar where students will present an architect/artist/movement followed by a discussion.

## History Course

Power and authority seek legitimacy and domination through its manifestation in the built form. This semester examines how social systems and public institutions mediate and negotiate power through architecture to ensure control, stability and supremacy. The onset of the mercantile mode of production also gave rise to expansionism and the earliest forms of capitalism.

Tenet of Power, Authority / Paradigm of Superlative History of architecture of public places and institutions | Greek Architecture | Roman Architecture | History of Byzantine Architecture | Islamic Architecture

## Humanities Courses

The First Year humanities course will investigate the relationships between social institutions (Kinship, property, gender, religion, caste, class, etc) and space. Through a functional analysis (that explains the persistence of these institutions through latent, unintended or unrecognized functions they fulfil) it will encourage students to read and analyze human settlements and elements of the built environment.

# Semester 3

## Scheme of Teaching and Examinations

### Scheme of Teaching and Examinations Bachelor of Architecture (B. Arch.) Semester III

Semester III Exam conducted by individual colleges		Teaching Scheme		Credits		
Sub No.	SUBJECTS	Lecture	Studio	Theory	Studio	Total
301	Architectural Design Studio		6		6	6
302	Allied Design Studio		3		3	3
303	Architectural Building Construction	3	3 classes Technology studio	3	1	4
304	Theory and Design of Structures	2		2	1	3
308	Architectural Building Services	2		2	1	3
305	Humanities	3		3		3
306	Environmental Studies	2		2		2
307	Architectural Representation & Detailing	2	2	2	2	4
309	Architectural Theory	2				2
320	College projects		3			3
321	Elective		3			3
	<b>Total</b>	<b>16</b>	<b>20</b>	<b>16</b>	<b>20</b>	<b>36</b>

Semester I II Exam Exam conducted by individual colleges		Examination Scheme			
Sub No.	SUBJECTS	Theory (paper)	Internal	External viva	Total
301	Architectural Design Studio		100	100	200
302	Allied Design Studio		100		100
303	Architectural Building Construction	50	50		100
304	Theory and Design of Structures	50	50		100
308	Architectural Building Services	50	50		100
305	Humanities	50	50		100
306	Environmental Studies		50		50
307	Architectural Representation & Detailing		100		100
309	Architectural Theory		50		50
320	College projects		100		100
320	Elective		100		100
	<b>Total</b>				<b>1100</b>

# Semester 3

# Semester 3

## Time-Table

	MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY		SATURDAY		
9-10.40	<b>TECH STUDIO (ABC/1ABS/TOS)</b>		<b>STUDIO : Architectural Design+ ARD</b>		<b>Allied Design</b>				<b>STUDIO : Architectural Design+ ARD</b>				
	303, 304, 308	3(ABC/ABS/TOS)+ 1 ABC	301, 307	3+1 ARD	302,	3 + 1 EXTRA			301, 307	3+1 ARD			
	MAMTA	GEORGE	NEMISH	AJAY	HUSSAIN	GEORGE			NEMISH	AJAY			
10.40-12.20	DHARMESH		RUTIKA		SHREYA		ADVAIT		SWATI		NNIKHHIL		
	NEERAJ		SHATNAKU K		RUTIKA		ROHAN C		<b>History (Humanities &amp; College Project )</b>		RUTIKA		
	MILAN S				MILANN		NISHANT		305, 320		1HU +1 CP		
								JIMMY		MILANN		NISHANT	
12.20-1.20													
1.20-3.00			<b>Environmental Studies</b>		<b>Visual Studies (Architecture representation and Detailing )</b>		<b>Architectural Theory</b>		<b>Architectural Building Construction</b>		<b>Theory of Structures</b>		
			306	2	307	2	309	2	303	3	404	2	
			KIMAYA	SHANTANU	SONAL	MANSI	ROHAN	GINELLA	SHHIRISH	MAMTA	RAJITHA	NEERAJ	
				APURVA									
3.00-4.40	<b>Humanities</b>		<b>Technology Lecture (Architectural Building Services)</b>				<b>Tectonic Studies (College Project )</b>						
	305	2	308	2ABS			304 2CP						
	HUSSAIN	SHWETA	MINAL	CHARVI			MANOJ		RUTIKA				

<b>COURSE CODE</b>	301	<b>CREDITS</b>	6 AD + 2ARD
<b>COURSE NAME</b>	Architectural Design Studio 3 & Arch	<b>SESSIONAL MARKS</b>	INTERNAL 100 EXTERNAL 100 MINIMUM 50 MARKS PASSING
<b>FACULTY</b>	ROHAN CHAVAN, QUAID DOONGERWALA, SHREYA NAGRATH, RUTIKA PARULKAR, ADVAIT POTNIS, NEMISH SHAH.	<b>EXAM SCHEME</b>	INTERNAL 100 EXTERNAL 100 EXAM CONDUCTED BY COLLEGE
<b>CLASS DAY/TIME</b>	TUES - 9 -12:20 PM 12:20 PM	FRIDAY - 9 - 12:20 PM	<b>NON-CLASS TIME</b>

<b>PEDAGOGIC INTENT</b>	At the heart of human life is the home. It is both symbolic and physical. It is also the space of belonging, of intimacy and of desire. It is in fact, the most significant, and also the most overlooked, cultural artefact of any society. Part of our daily life, the home exists, partly as nostalgia, partly as a refuge from the world, and partly as the site of our desires. It is the site of our past, present and also our future. Much of our ability to understand and make sense of the world comes from the place that we inhabit. It is what gives us a sense of our identity, of who we are and who we will or want to be in this world. Dwelling is, as Heidegger says, Being. Living in a house, a home, is synonymous to existing in the world. It is the INTENT of the STUDIO to engage the student with the space of the HOME, inside it, as well as outside it. What happens inside one's Home as well as how the HOME, situates itself within the external world. . To Understand, through Example, through Research and through Design, the different aspects of Architecture at a DOMESTIC SCALE
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<b>COURSE METHOD</b>	<p>The Overall Studio is divided into 2 main parts. Part 1 (4 Weeks) is mainly Case Study and Analysis, and Part 2 (12 Weeks) will be where the student undertakes a Design Project.</p> <p>The first part will be a case study of a famous iconic house, to be undertaken by the students (in groups of 2). Faculty will provide the list of 40 houses to the students. This will be a 4 week exercise. During this case study, the student will REDRAW (not copy), and ANALYSE the given project based on a range of Parameters given in the Brief. The Analysis will help the student understand the process of Design, as well as introduce them to the nuances of Architectural Design. A Close reading of the project will allow them to familiarize with the techniques / processes and devices used by Architects - and also build within them a vocabulary to employ these moves in their own Design Project.</p> <p>The Second Part of the Studio will have a duration of 12 Weeks, and here, each student will be asked to design an EXPERIMENTAL LIVING ENVIRONMENT measuring 80-100 sqm.</p> <p>At the beginning, the students will be provided with a series of VERB / NOUN associations. The VERB will be the action element of the pair whereas the NOUN is the place / character element of the pair. Once the site of intervention is decided by the student, she will study it for an appropriate actor for who a place to LIVE, to WORK and to EXIST has to be designed. This Place / Dwelling / Environment, will be designed, taking off from the formal studies undertaken using the action VERB - but at the same time, understanding the nuances, contexts and relationships that emerge from the NOUN / Site.</p> <p>The idea is to NOT, build a traditional type of dwelling, but a place that brings out the hidden, concealed, unknown and unacknowledged orbits of Domesticity.</p> <p>As the course utilizes 2 credits from ARD aspects of representations in design will. Also be discussed and included in the course method. One of the reviews will be marked on basis of aspects of ARD which will contribute to total ARD marks for the students.</p>
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKIN G WEIGHTA GE
week 1	29/06/2021	Introduction to 2nd year. Introduction to Studio and Case Study Projects (LIST)		
week 1	02/07/2021	Presentation on Case Study Methods / Graphic Quality / Drawings / Template.		
week 2	06/07/2021	Desk Crit - Analysis / Documentation (Parameter - PLAN / IDEA / CONTEXT)		
week 2	09/07/2021	Desk Crit - Analysis / Documentation (Parameter - ELEMENT/STRUCTURAL ANALYSSS)		
week 3	13/07/2021	Desk Crit - Analysis / Documentation (Parameter - SYNTHESIS)		
week 3	16/07/2021	Desk Crit - Analysis / Documentation (Parameter - SYNTHESIS)		
week 4	20/07/2021	<b>FINAL REVIEW PART ! - CASE STUDY HOUSES</b>		
week 4	23/07/2021	FINAL REVIEW PART ! - CASE STUDY HOUSES		
week 5	27/07/2021	Introduction to Part 2 (DESIGN STUDIO) / NOUN VERB SELECTION, Faculty Group Discussion about VERB / NOUN Selection		

week 5	30/07/2021	Desk Crit - Finalisation of VERB / NOUN Selection. Preliminary Discussion about the Architectural / Formal Qualities of the VERB and methods of Formal Experimentation.
week 6	03/08/2021	Desk Crit - VERB (FORMAL EXPLORATIONS)
week 6	06/18/2021	PRELIMINARY REVIEW
week 7	10/08/2021	Desk Crit - NOUN - IDEAS OF SITE / USER (And Meaning)
week 7	13/08/2021	Faculty Presentation: METHODS and PROCESSES Desk Crit - Finalisation of SITE / PROGRAM / USER (and VERB - Formal Exploration)
week 8	17/08/2021	Desk Crit - Finalisation of SITE / PROGRAM / USER (and VERB - Formal Exploration)
week 8	20/08/2021	Desk Crit - FORMAL EXPERIMENTATION ON SITE
week 9	24/08/2021	Desk Crit - FORMAL EXPERIMENTATION ON SITE
week 9	27/08/2021	INTERIM REVIEW
week 10	31/08/2021	Faculty Presentation: IDEAS to DESIGN
week 10	03/09/2021	DESK CRIT - Finalisation of PROGRAM / PLAN
week 11	07/09/2021	DESK CRIT - Finalisation of PROGRAM / PLAN
week 11	14/09/2021	DESK CRIT - Volumetric Ideas / Elements
week 12	17/09/2021	DESK-CRIT - Structural Relationships
week 12	21/09/2021	DESK-CRIT - Structural Relationships
week 13	24/09/2021	Faculty Presentation: REPRESENTATION TECHNIQUES
week 13	28/09/2021	DESK-CRIT - Materiality / OVERALL DRAWINGS
week 14	01/10/2021	DESK-CRIT - Materiality / OVERALL DRAWINGS
week 14	05/10/2021	PRE-FINAL REVIEW
week 15	08/10/2021	Representation Week
week 15	12/10/2021	FINAL REVIEW

<b>LEARNING OUTCOMES</b>	It is imagined that the student will learn to OBSERVE objects / things / spaces at all different SCALES and document them, providing them a level of understanding that is more than just that of anthropometrics. Ideas such as those if EMPATHY / HUMANITY / UNDERSTANDING should become integral to their way of seeing the world. Through these observations, they will learn how to FORMULATE CONCEPTS and think of FUNDAMENTAL IDEAS. Finally it is hoped that based on these CONCEPTS, they are able to formulate PROGRAMMATIC IDEAS and FORMAL IDEAS and using various methods REPRESENT these in an appropriate format.
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**READING LIST/  
REFERENCES**

**CO-PO mapped syllabi of B.Arch. Course 2021-2022 – Architectural Design**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architecture Design Studio**

**Course Code: 301**

**Sem 3**

**Name – Second year**

**Course Objectives:**

- To enable students to develop their own understanding of formal ideas along their developed concepts.
- To be able to formulate programmatic ideas based on the concepts developed
- To be able to construct ideas of drawings and representations in appropriate formats so as to convey their concepts and design processes.
- To enable them to familiarize with the techniques / processes and devices used by different architects as modes of production and also build within them a vocabulary to develop their own design strategies.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To understand questions around scale and ideas of anthropometrics
CO2	To understand and observe various spaces, objects, things at different scales and document them in form of conceptual ideas and drawings
CO3	To create investigation methods around ideas of forms through models (Operating in different materials), drawings etc.
CO4	To analyze ideas of home and develop broader ways of seeing at fundamental concepts of domesticity.
CO5	To create different modes of representations by imagining spaces at various scales to help students in producing well resolved complete set of drawings (plan, sections and elevations)

Year of Assessment : 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	University Subject Code	Sessional Marks:	Exercise : Marks out of	Credits	Date of submission			
Second Year SEM 3	Architectural Design	301	100	100	6AD +1 ARD	12-10-2021			
Exercise: Title	Dwelling and Domesticity								
Exercise Note / Task	student will be asked to design an EXPERIMENTAL HOUSE / LIVING ENVIRONMENT measuring 80-100 sqm At the beginning, the students will be provided with a series of VERB / NOUN associations. The VERB will be the action element of the pair whereas the NOUN is the place / character element of the pair. Once the site of intervention is decided by the student, she will study it for an appropriate actor for who a place of living has to be designed. This Place / Dwelling / Environment, will be designed, taking off from the formal studies undertaken using the action VERB - but at the same time, understanding the nuances, contexts and relationships that emerge from the NOUN / Site. The idea is to NOT, build a traditional type of dwelling, but a place that brings out the hidden, concealed, unknown and unacknowledged orbits of Domesticity.								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Attendance and participation in the studio	95% to 100% attendance and extremely participative along with taking complete responsibility of the studio assignments	1 90% to 95% attendance and visibly very participative along with sharing responsibilities of studio assignments	1 85% to 90% attendance and visibly participative along with sharing responsibilities of studio assignments	75% to 85% attendance and participative along with sharing responsibilities of studio assignments.	70% to 75% attendance and participative along with sharing responsibilities of studio assignments only when asked	65% to 70% attendance and less participative alongwith sharing responsibilities of studio assignments only when asked.	155% to 65% attendance and participative in the studio only when asked	50% to 55% attendance and not participative in the studio	Below 50% attendance and mostly absent in the studio
Developing a comprehensive conceptual idea and translation of the same in formal expression.	Highly Outstanding understanding of concepts and formal translation and completing innovative high quality drawings	Moderately Outstanding understanding of concepts and formal translation and innovative high quality drawings	Outstanding understanding of concepts and formal translation and innovative moderately high quality drawings	Excellent understanding of concepts and formal translation and completing the drawings excellent quality of drawings	Very Good understanding of concepts and formal translation and completing the drawings very good quality of drawings	Good understanding of concepts and formal translation and completing with good quality drawings	Mediocre understanding of concepts and formal translation and completing with mediocre quality of drawings	Low but decent understanding of concepts and formal translation completion of drawing sets with low quality	Poor understanding of concepts and formal translation not completion of drawing sets with low quality drawings
Proactiveness while on site study and group assignments to organize and complete the work	Extremely involved in taking lead and completing the group work with extraordinary innovative drawings	Moderately but seriously involved in taking lead and completing the group work with highly innovative drawings	Less moderately but seriously involved in taking lead and completing the group work with very good quality drawings	Seriously involved in taking lead and completing the group work with very good quality drawings	Less Seriously involved in taking lead and completing the group work with very good quality drawings	Just for the sake involved in taking lead and completing the group work with very good quality drawings	Not much active in site work but completing the requirements for own	No active participation in class and partial completion of the work	Disinterested

CO-PO mapping									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To understand questions around scale and ideas of anthropometrics	1	3	2	2	0	2	2	0
CO2	To understand and observe various spaces, objects, things at different scales and document them in form of conceptual ideas and drawings	2	3	1	3	0	3	3	0
CO3	To create investigation methods around ideas of forms through models(Operating in different materials), drawings etc.	0	2	3	0	0	0	0	1
CO4	To analyze ideas of home and develop broader ways of seeing to fundamental concepts of domesticity.	3	2	3	3	3	3	3	0
CO5	To create different modes of representations by imagining spaces at various scales to help students in producing well resolved complete set of drawings (plan, sections and elevations	1	2	1	0	2	0	0	1

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
0 – No Correlation



<b>COURSE CODE</b>	BARC 302	<b>CREDITS</b>	3 + 1 (extra)
<b>COURSE NAME</b>	ALLIED DESIGN	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	GEORGE JACOB, HUSSAIN INDOREWALA, MANSI BHATT, SWATI SESHADRI, NIKHIL KHADILKAR, ANKUSH CHANDRAN	<b>EXAM SCHEME</b>	INTERNAL
<b>CLASS DAY/TIME</b>	WEDNESDAY / 8:00 TO 11:20	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	The Allied Design Course in the Second Year aims at equipping students with analytical skills to examine the relationship of form and material with space, time and function. The Course also reverses the equation in the second part of the year, exposing students to influence of space, time and function on the choice of material and design decisions. This studio is built around the idea of a 'skill lab' with the intent to explore different materials and techniques. It will explore different modes of making, emphasizing on joineries and appropriate tools. It is also part of the studio to establish that making or building is also an equally important aspect of design thinking.
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<b>COURSE METHODOLOGY</b>	<p>This third semester begins with the architectural inspection of the smaller scale, a singular object and then progressively ascends into larger scales or sometimes a combination of objects.</p> <p>The studio will be organized around 3 tasks: the first task will explore the principles of tensegrity using pencils and threads. A set of limitations and constraints along with diagrams or image of the expected outcome will be given to the students. The end of the task will be the submission and demonstration of the object. The second task will use the same principle of tensegrity to explore the possibility of spanning a bridge for 1Metre. The students will continue using pencils and thread to demonstrate this. The first two tasks will be graded out of 20 each.</p> <p>The third task will be graded out of 60. This task will begin with the study of the body. The process will explore daily rituals and their associated actions and tools in the immediate space of the home. The study of the body and the daily actions choreographed will help develop individual intents exploring formal ideas of furniture or objects required to carry daily chores and activities. These will be built using the principle of at 1:1 scale or a suitable scale mutually decided with the guide.</p>
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	June 30	Introduction to Task-1. The constraints of the task and necessary information and guidelines will be given to students and the batch will be divided into groups with one faculty each.		
2	July 07	Group based discussions and studio		
4	July 14	Final Submission of Task-1 and introduction to Task-2		
4	July 21	Group based discussions and studio		
5	July 28	Group based discussions and studio		
6	August 04	Group based discussions and studio		
7	August 11	Final Submission of Task-2 and introduction to Task-3. Lecture on mapping of objects and body.		
8	August 18	Group based discussions and studio		
9	August 25	Group based discussions and studio		
10	September 01	Review of Task-3		
11	September 08	Group Discussions and Lecture on Compilation of Design Process		
12	September 15	Group Discussions		
13	September 22	Pre-final		
14	September 29	Group Discussions / Working Studio		
15	October 06	Final		
16	October 13	Compilation and Condonation		

<b>LEARNING OUTCOMES</b>	<p>The semester as mentioned conducts three set of exercises culminating into the collection and curation of joineries across the material palette. The compilation is expected in the digital format but eventually printable.</p> <ul style="list-style-type: none"> <li>• To understand material properties and behaviour.</li> <li>• To understand the principles of tensegrity.</li> <li>• To develop an individual premise for the desired object</li> <li>• To help build a list of materials and representative skills as part of the individual's comfort level and control. This will help the student to develop their individual modes and style of engaging in the design and architecture discipline.</li> </ul>
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<b>READING LIST/ REFERENCES</b>	
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## CO-PO mapped syllabi of B.Arch Course 2021-2022\_ Allied Design 3

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)

6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Allied Design 3**  
**Course Code: BARC 302**

**Sem: 3**

**Second Year**

**Course Objectives:**

- To develop knowledge and applicability of building materials based on their respective properties and characteristics.
- To engage with and identify suitable scales and proportions alongwith developing accuracy while building objects.
- The development of ideas based on available constraints stemming from challenging contexts or material limitations.
- To help students develop individual processes for design.
- To develop evaluation methods for testing the feasibility of the designed product thus achieving higher degree of precision.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To understand the spatial and functional aspects influencing the form of the object.
CO2	To apply and analyze the design idea by physically building the object through an iterative process.
CO3	To evaluate the design for the desired function and precision.
CO4	To create designs that utilize material properties and other constraints set in the studio.

**Rubrics :**

Year of Assessment: 2021 - 2022	USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:		University Subject Code	Sessional Marks:	Exercise : Marks out of	Credits	Date of submission		
SECOND YEAR - SEM 3	Allied 3		302	100	100	3+1(extra)	13/10/21		
Exercise: Title	Assemblies								
Exercise Note / Task	<p>This third semester begins with the architectural inspection of the smaller scale, a singular object and then progressively ascends into larger scales or sometimes a combination of objects.</p> <p>The studio will be organized around 3 tasks: the first task will explore the principles of tensegrity using pencils and threads. A set of limitations and constraints along with diagrams or image of the expected outcome will be given to the students. The end of the task will be the submission and demonstration of the object. The second task will use the same principle of tensegrity to explore the possibility of spanning a bridge for 1Metre. The students will continue using pencils and thread to demonstrate this. The first two tasks will be graded out of 20 each.</p> <p>The third task will be graded out of 60. This task will begin with the study of the body. The process will explore daily rituals and their associated actions and tools in the immediate space of the home. The study of the body and the daily actions choreographed will help develop individual intents exploring formal ideas of furniture or objects required to carry daily chores and activities. These will be built using the principle of at 1:1 scale or a suitable scale mutually decided with the guide.</p>								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Attendance and participation in the studio	95% to 100% attendance and extremely participative alongwith taking complete responsibility of the studio assignments	90% to 95% attendance and visibly very participative alongwith sharing responsibilities of studio assignments	85% to 90% attendance and visibly participative alongwith sharing responsibilities of studio assignments	75% to 85% attendance and participative alongwith sharing responsibilities of studio assignments	70% to 75% attendance and participative alongwith sharing responsibilities of studio assignments only when asked	65% to 70% attendance and less participative alongwith sharing responsibilities of studio assignments only when asked	55% to 65% attendance and participative in the studio only when asked	50% to 55% attendance and not participative in the studio	Below 50% attendance and mostly absent in the studio
Ability to build the prototype object and accuracy in tolerances based on the drawings	95% to 100% tolerance and finish of the object	90% to 94% tolerance and finish of the object	85% to 89% tolerance and finish of the object	80% to 84% tolerance and finish of the object	70% to 79% tolerance and finish of the object	60% to 69% tolerance and finish of the object	55% to 59% tolerance and finish of the object	50% to 54% tolerance and finish of the object	Below 50% tolerance and finish of the object
Ingenuity at composing parts of the design together	Premier accuracy in skill set involved to make the object and understanding the character and properties of the material. Prefection and complete	Fine accuracy in skill set involved to make the object and understanding the character and properties of the	Outstanding accuracy in making the object and understanding the character and properties of the material but having scope of	Excellent accuracy and display of skill set involved in making the object. Excellent understanding of the character and properties	Good accuracy within limited skill set involved in making the object and intent displayed to understanding the character and	Good accuracy within limited skill set involved in making the object and loose intent displayed to understanding the character	Fair accuracy within limited skill set involved in making the object and loose intent displayed to understanding the character	Need involvement and absolute improvement in skill set to make the object and loose intend displayed to understanding the	No involvement and absolute improvement required in skill set to make the object and no intend displayed to understanding the

	display of ingenuity.	material. Having prospect of achieving perfection.	evolving the overall skill set.	of the material. Scope of achieving better result.	properties of the material.	and properties of the material.	and properties of the material.	character and properties of the material.	ng the character and properties of the material.
<b>Conceptualization of the design</b>	Novel idea, Functional Outcome, Finesse	Outstanding idea, Functional Outcome, Very Good Make	Fair idea, Functional Outcome, Good Make	Acceptable idea, Workable Outcome, Good Make	Acceptable idea, Workable Outcome, Fair Make	Average idea/Reproduced idea (Copied), Workable Outcome, Fair Make	Basic/reproduced idea (Copied), Workable Outcome, Fair Make	vague/reproduced idea (Copied), Workable Outcome, Fair Make	NO outcome
<b>Compatibility and experimentative intention of the idea with the outline of the studio</b>	Most flexible design idea with originality matching the outline of the studio	Flexible enough as a design idea with comparative originality matching the outline of the studio	Flexible with constraints as a design idea with comparative originality matching the outline of the studio	Flexible idea but exhibiting a continuation of an existing idea matching the outline of the studio	Good idea but exhibiting a continuation of an existing idea matching the outline of the studio	Average idea but exhibiting a continuation of an existing idea matching the outline of the studio	Fair idea but exhibiting a continuation of an existing idea matching the outline of the studio	Satisfactory idea but exhibiting a continuation of an existing idea barely matching the outline of the studio	No intent and inclination to develop an idea

COPO Mapping Setup for Sem 3

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To understand the spatial and functional aspects influencing the form of the object.	3	3	3	0	1	2	3	0
CO2	To apply and analyze the design idea by physically building the object through an iterative process.	2	3	3	0	2	1	3	1
CO3	To evaluate the design for the desired function and precision.	2	2	3	2	1	2	3	2
CO4	To create designs that utilize material properties and other constraints set in the studio.	1	2	3	0	0	0	3	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation

0 – No Correlation

<b>COURSE CODE</b>	BARC303	<b>CREDITS</b>	3 Lecture + 1 Studio
<b>COURSE NAME</b>	Architectural Building Construction and Materials 3	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Mamta, Shirish, Shantanu, Rutika, George, Neeraj, Milan	<b>EXAM SCHEME</b>	Theory- 50 marks
<b>CLASS DAY/TIME</b>	Monday 09.00-12:20/ Friday 1.20- 3.00	<b>NON-CLASS TIME</b>	12
<b>PEDAGOGIC INTENT</b>	To make the students draw a comparative understanding of load bearing/ timber frame composite and RCC framed structures. The student is expected to visualise and represent a constructionally and structurally workable design of a residential scale in RCC and load-bearing composite structure.		
<b>COURSE METHODOLOGY</b>	Introduce and orient through lectures, Documentation of multiple building types and case studies and simulate exercises & resolve problems and designs.		

Lecture

<b>COURSE CODE</b>	BARC303	<b>CREDITS</b>	3
<b>COURSE NAME</b>	Architectural Building Construction and Materials 3	<b>SESSIONAL MARKS</b>	
<b>FACULTY</b>	Mamta, Shirish	<b>EXAM SCHEME</b>	
<b>CLASS DAY/TIME</b>	Friday 1.20- 3.00	<b>NON-CLASS TIME</b>	12

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	02/07/2021	Introduction to the Semester. Relation between Design and technology/ Construction. Mind map of students wrt to the subjects; Role of observation		
2	09/07/2021	An overview of the comparison between different structural systems with a focus on foundations		
3	16/07/2021	Compressive members and comparison between walls and columns. Discussion on creating openings in walls		
4	23/07/2021	Flooring systems and factors affecting their use		
5	30/07/2021	Introduction to RCC/ Framed Structures		
6	06/08/2021	Staircase and Ramp Systems		
7	13/08/2021	Roof Details		
8	20/08/2021	Balconies		
9	27/08/2021	Waterproofing details		

Studio

<b>COURSE CODE</b>	BARC303	<b>CREDITS</b>	1
<b>COURSE NAME</b>	Architectural Building Construction and Materials 3	<b>SESSIONAL MARKS</b>	
<b>FACULTY</b>	Mamta, George, Dharmesh, Rutika, Neeraj, Shantanu, Milan	<b>EXAM SCHEME</b>	
<b>CLASS DAY/TIME</b>	Monday 9.00- 12.20	<b>NON-CLASS TIME</b>	12

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	05/07/2021	Introduction to Studio, formation of groups, allotment of sites		
2	12/07/2021	Working Studio		
3	19/07/2021	Working Studio		
4	26/07/2021	Working Studio		
5	02/08/2021	Working Studio	Sketches	10
6	09/08/2021	Working Studio	Plans and Sections	10

7	23/08/2021	Working Studio	Wall Sections	10
8	30/08/2021	Working Studio	Staircase	10
9	06/09/2021	Portfolio Submission (Prefinal)	Portfolio	20
10	13/09/2021	Working Studio		
11	20/09/2021	Class Test		20
12	27/09/2021	Final Portfolio Submission	Final Documentation	20

LEARNING OUTCOMES

Empathy & Knowledge:- towards different constructional typologies; Skills of Observation, Documentation, Analysis & Representation of constructional processes in Architecture.

READING LIST/ REFERENCES

1]Building Construction : METRIC VOLUME 1&2 BY W.R.McKAY; 2] Building Construction by S.C. Rangwala; 3] Building Construction Illustrated Book by Frank Ching Download link : [https://archive.org/details/FrancisD.K.ChingBuildingConstructionIllustratedWiley2014\\_4](https://archive.org/details/FrancisD.K.ChingBuildingConstructionIllustratedWiley2014_4) 4]Building Construction Handbook Seventh edition R. Chudley 5] Brick Work by Laurie Baker Download Link :<http://costford.com/Brick%20work.pdf> , 6

**CO-PO mapped syllabi of B.Arch Course 2021-2022 – Architectural Building Construction and Materials 3**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to de-layer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognise and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete)
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Building Construction and Materials 3**  
**Course Code: BARC303**

**Sem 3**

**Second Year**

**Course Objectives:**

- The course facilitates the application of theoretical structural concepts relating it to the observed and studied built-form spaces and being able to represent the same.
- Observation of built form and elements and representation as measured architectural drawings.
- Comparative understanding of RCC framed and Load Bearing/ Timber framed composite structures.
- Understanding the construct of vernacular architecture.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To understand the underlying principles of structural systems and their application.
CO2	To create an analytical framework for observing buildings and their structural systems.
CO3	To apply and represent the learnings about different structural systems in their own designs.
CO4	To be able to gauge the performance of a structure in its geographical, climatic and topographical context and develop sensitivity towards the efficient use of scarce resources.

Rubrics:

USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture										
Year of Assessment : 2021-2022	Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 100	Exercise 01: Marks out of	Credits	Date of submission	Upgrade 01	Upgrade 02
	SECOND YEAR - SEM 3	ABCM3	TLC033	303	100	50	100	Multiple		
	Exercise: Title	Documenting structural elements of structures from online resources								
	Exercise Note / Task	Portfolio submission by students								
	Assessment		Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail	
	Grade	O++	O+	O	A	B	C	D	E	F
	Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
	Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation										
Depth of Inquiry and ability to generate analytical drawings	Exceptional analytical drawings and clarity in explaining the concept and architectural design intent	Well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Excellent curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry	
	Showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing well outstanding insights adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing Outstanding insights using tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Generic methods of analysis	Not informed process of adaptation of tools and frameworks	

Representation Technique and final submission	Very well formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Well formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Clear formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Very good formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Good formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Fairly formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Barely managed to get clarity of intent and study using poor diagrams and sketches	Less clarity in terms of ideas and processes to be followed	Absolute no clarity of thought and understanding of the subject	
	Showcasing 100% ability to translate theoretical knowledge into practice	Showcasing 90% ability to translate theoretical knowledge into practice	Showcasing 80% ability to translate theoretical knowledge into practice	Showcasing 70% ability to translate theoretical knowledge into practice	Showcasing 65% ability to translate theoretical knowledge into practice	Showcasing 60% ability to translate theoretical knowledge into practice	Showcasing 55% ability to translate theoretical knowledge into practice	Showcasing 50% ability to translate theoretical knowledge into practice	Zero understanding and application of theoretical knowledge	
Attendance and participation in the discussions	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence	

CO-PO mapping for a course of “UG program” Architectural Building Construction and Materials 3									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To understand the underlying principles of structural systems and their application.	2	0	0	1	0	3	2	0
CO2	To create an analytical framework for observing buildings and their structural systems.	1	1	1	2	0	3	2	1
CO3	To apply and represent the learnings about different structural systems in their own designs.	2	3	3	2	0	1	3	2
CO4	To be able to gauge the performance of a structure in its geographical, climatic and topographical context and develop sensitivity towards the efficient use of scarce resources.	3	3	3	3	0	2	3	2

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
0 – No Correlation

BARC 304	COURSE NAME	Theory and Design of Structures		SEMESTER	III	CREDITS	3 (2 TOS + 1 Technology Studio)
	FACULTY	Rajitha, Noorj		SESSIONAL MARKS	50	SCHEME OF EXAMINATION	Written paper: 50
	TIME	11.00-12.30		TEACHING HOURS	01:30	TIME REQUIRED OUTSIDE OF CLASS	
UNIVERSITY COURSE DESCRIPTION	Theory of Simple Bending, Deflection in beams, Direct and bending stresses, Basics of RCC and Material Testing						
PEDAGOGIC INTENT	Understanding of basic theories and principles of structural analysis. Study the behaviour of structural elements under various load conditions						
METHODOLOGY	Various mediums will be used to explain the concepts, like videos, presentation, hands-on experiments with spaghetti sticks, ice cream sticks etc. Sharing experiences with class in accordance to one's learnings.						
SCHEDULE	DAY	DATE	TEACHING CONTENT OF THE DAY			MARKING DISTRIBUTION	ASSIGNMENT/DELIVERABLE
	Saturday	19/6/21	Types of concrete				
	Saturday	26/6/21	RCC frame structure and reinforcement				
	Saturday	3/7/21	Basics of RCC, grades of concrete and steel. Introduction to concrete technology. Placement of steel based on bending moment and shear force diagrams				
	Saturday	10/7/21	Continuation to the previous week's topic				
	Saturday	17/7/21	Theory of simple bending, derivation of key formula and its explanations				
	Saturday	24/7/21	Continuation to the previous week's topic. Designing a Bicycle Stand with RCC as construction material. Working out the calculations (by thumb rules) for understanding the dimensions of the design and process of RCC construction				
	Saturday	31/7/21	Introduction to the concept of shear stresses distribution in beams and its relevance in construction. Analysing shear stress distribution and derivation of key formulae. Work on numerical with examples				
	Saturday	7/8/21	Understanding of Direct and Bending stresses in columns, footings and beams. Application of the same in design columns and walls.				
	Saturday	14/8/21	Explanation of axial stresses in beams and other structural members and analysis of deflections				
	Saturday	21/8/21	Introduction to deflections in beams with simply supported and cantilevers ends.				
	Saturday	28/8/21	Solving numerical problem for deflections in beams, with the methods stated above.				
	Saturday	4/9/21	Developing an intuitive understanding of how structures deflect under forces and behaviour with respect to different structural elements.				
	Saturday	11/9/21	Continuation to the previous week's topic.				
	Saturday	18/9/21	Discussion on Principal stresses and how it is derived for beams. Its significance in reinforcement layout.				
	Saturday	25/9/21	Study properties of materials like Cement, Sand and Bricks. Introduction to various conventional testing methods for the same.				
	Saturday		Revision				
EVALUATION CRITERIA	basis for judgement of assignments and priority of parameters for evaluation if any						
LEARNING OUTCOMES							
READING LIST	Strength of Materials by Rammruthum, Foundation Engineering by B.C. Punmia and P.C. Varghese						

## CO-PO mapped syllabi of B.Arch Course 2021-2022 – Theory and Design of Structures 3

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)



5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Theory and Design of Structure 3**  
**Course Code: BARC 304**

Sem 3

Name - 2nd Year

**Course Objectives:**

- Understanding of basic theories and principles of structural analysis
- Understanding of properties of materials relevant to structural analysis
- Understanding of the behavior of structural elements under various conditions

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Introduction to concrete as a structural material, its inherent properties, advantages, and shortcomings.
CO2	Develop an intuitive understanding of the structural components – beams, columns and footing; the stresses involved during the load transfer
CO3	Understand the behavior of the material and structural member (deflection, bending etc.) and application of same in the structural planning
CO4	Develop a perspective on the importance of technical knowledge and its application with respect to the role of an architect as a professional.

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks:	Exercise 01 & 02: Marks out of	Credits	Date of submission		
SECOND YEAR - SEM 3	Theory and Design of Structures 3	BARC 304	BARC 304	50	50	3 (2 TOS + 1 Technology Studio)			
<b>Exercise: Title</b>	Various tests related to concrete and cement & its applications								
<b>Exercise Note / Task</b>	Assignment + Test								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Data Gathering/ monitoring and collating</b>	All data to be collected from reliable sources with references included in the reports. Exceptional in showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected.	All data to be collected from reliable sources with references included in the reports. Showcasing well outstanding insights adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing Outstanding insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Data collected is from adequate sources with most references included in the reports. Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Data collected is from adequate sources with most references included in the reports. Showcasing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Generic methods of analysis	Not informed process of adaptation of tools and frameworks
<b>Depth of Inquiry and ability to generate analytical drawings</b>	Exceptional analytical drawings and clarity in explaining the concept and architectural design intent	Well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Excellent curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
<b>In-depth understanding a theory and its application in the architectural field</b>	Exceptional analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Well curated outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Very well curated outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Excellent curation using outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation.	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent.	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent.	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
<b>Representation Technique and final submission</b>	Very well formatted presentation explaining concepts, process adopted using various tools and techniques	Well formatted presentation explaining concepts, process adopted using various tools and techniques	Clear formatted presentation explaining concepts, process adopted using various tools and techniques	Very good formatted presentation explaining concepts, process adopted using various tools and techniques	Good formatted presentation explaining concepts, process adopted using various tools and techniques	Fairly formatted presentation explaining concepts, process adopted using various tools and techniques	Barely managed to get clarity of intent and study using poor diagrams and sketches	Less clarity in terms of ideas and processes to be followed	Absolute no clarity of thought and understanding of the subject

Ability to demonstrate the Learnings from the discussions conducted in class	Showcasing 100% ability to translate theoretical knowledge into practice	Showcasing 90% ability to translate theoretical knowledge into practice	Showcasing 80% ability to translate theoretical knowledge into practice	Showcasing 70% ability to translate theoretical knowledge into practice	Showcasing 65% ability to translate theoretical knowledge into practice	Showcasing 60% ability to translate theoretical knowledge into practice	Showcasing 55% ability to translate theoretical knowledge into practice	Showcasing 50% ability to translate theoretical knowledge into practice	Zero understanding and application of theoretical knowledge
Attendance and participation in the discussions	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence

COPO Mapping Setup for Sem 3

CO-PO mapping for a course of “Theory and Design of Structures 3”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Introduction to concrete as a structural material, its inherent properties, advantages, and shortcomings.	3	1	1	1	1	3	0	1
CO2	Develop an intuitive understanding of the structural components – beams, columns and footing; the stresses involved during the load transfer	3	3	1	0	0	1	1	1
CO3	Understand the behavior of the material and structural member (deflection, bending etc.) and application of same in the structural planning	2	2	2	0	1	3	2	1
CO4	Develop a perspective on the importance of technical knowledge and its application with respect to the role of an architect as a professional.	2	1	3	2	2	2	2	2

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC-308	<b>CREDITS</b>	3 (2 Lectures + 1 Studio)
<b>COURSE NAME</b>	Architectural Building Services 1	<b>SESSIONAL MARKS</b>	Internal sessional marks - 50
<b>FACULTY</b>	Minal Yerramshetty, Neha	<b>EXAM SCHEME</b>	50 marks theory paper
<b>CLASS DAY/TIME</b>	Tuesday - 1.20-3.00	<b>NON-CLASS TIME</b>	4 hours

<b>PEDAGOGIC INTENT</b>	<p>The Architectural Building Services course in this semester intends to introduce the technological understanding of building infrastructure, with a focus on water supply, drainage and solid waste management systems.</p> <p>With a goal towards achieving sustainability in terms of resource and energy management, this course enables the students to deal with traditional as well as novel techniques to make buildings functional while imparting comfort, convenience, health and hygiene to the occupants.</p>
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<b>COURSE METHOD</b>	Theory lectures with the help of audio-visual medium, case studies and discussion and debates
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Lecture

<b>COURSE CODE</b>	ABS-308	<b>CREDITS</b>	2
<b>COURSE NAME</b>	Architectural Building Services 1	<b>SESSIONAL MARKS</b>	Internal sessional marks - 50
<b>FACULTY</b>	Minal Yerramshetty, Neha	<b>EXAM SCHEME</b>	50 marks external exam paper
<b>CLASS DAY/TIME</b>	Tuesday - 1.20-3.00	<b>NON-CLASS TIME</b>	4 hours

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	06/07/2021	ELECTIVE WEEK		
2	13/07/2021	Introduction to architectural services? Comparison of Building systems with Human systems and understanding its integrity with Design		
3	20/07/2021	Integration of services within design and construction, consultants involved and impacts on design through case study	--	
4	27/07/2021	Water infrastructure at city level, various sources and distribution of water. Various issues, resource management at city level.	--	
5	03/08/2021	Water supply at building level - connections from the mains to service pipes, components in the entire system, distribution within the building.....	--	
6	10/08/2021	Water storage capacities, and storage at building level. Water supply for high rise building -	--	
7	17/08/2021	Public toilet - Design of Public Toilet - Design criteria of PT, typology and design consideration, various aspects of designing PT such as privacy, wet/dry area segregation, concerned bylaws.....		
8	24/08/2021	PT continues - Use of materials, signages, light/ventilation/r aspect, fixtures and fitting, innovative water saving devices t ergonomics, and design for disabled		
9	31/08/21	Case study - examples of public toilet design, typology and	--	
10	7/09/21	Sanitation - house drainage, traps, systems, principles of drainage system, anti-siphon and ventilation of system	--	
11	14/09/21	HOLIDAY - INDEPENDENCE DAY	--	
12	21/09/21	Sanitation - continues	--	
13	28/09/21	Environmentally friendly systems such as septic tank, DEWAT, Ecosan toilet, dry toilets, urine separating toilets. Water management system, water saving techniques through case study		
14	5/10/21	Discussion on technology studio	--	

15	12/10/21	Discussion on technology studio	--
16	19/10/21	Revision	--

Studio

<b>COURSE CODE</b>	BARC 308	<b>CREDITS</b>	1
<b>COURSE NAME</b>	Architectural Building Services 1	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Mamta, George, Dharmesh, Rutika, Neeraj, Shantanu, Milan	<b>EXAM SCHEME</b>	Sessional Only
<b>CLASS DAY/TIME</b>	Monday 9.00- 12.20	<b>NON-CLASS TIME</b>	12

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	05/07/202	Introduction to Studio, formation of groups, allotment of sites		
2	12/07/2021	Working Studio		
3	19/07/2021	Working Studio		
4	26/07/2021	Working Studio		
5	02/08/2021	Working Studio	Sketches	10
6	09/08/2021	Working Studio	Plans and Sections	10
7	23/08/2021	Working Studio	Wall Sections	10
8	30/08/2021	Working Studio	Staircase	10
9	06/09/221	Portfolio Submission (Prefinal)	Portfolio	20
10	13/09/2021	Working Studio		
11	20/09/2021	Class Test		20
12	27/09/2021	Final Portfolio Submission	Final Documentation	20

<b>LEARNING OUTCOMES</b>	Students acquire basic Skill of observation, documentation, Analysis and representation of various basic services required for health and sanitation in a built form. Students are also enabled to compute various spatial requirement regarding services, their placement and their aesthetic resolution for their projects in a sustainable manner.
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<b>READING LIST/ REFERENCES</b>	Water Supply and Sanitary Engineering (B 277 ), (B 1311), (B 3329 ), (B 1329 ), Sanitation Details (B 2229), Essential Building Service & Equipment (B 3097), Architectural Hygiene (B 194), Integrating Building services with design - <u>Prototype of a Construction Project Documentation Management System for Windows (itcon.org)</u>
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**CO-PO mapped syllabi of B.Arch Course 21-22 – Architectural building services 1**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive ways of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Building Services 1**

**Course Code: 308**

**Sem 3**

**Second Year**

**Course Objectives:**

The Architectural Building Services course in this semester intends to introduce the technological understanding of building infrastructure, with a focus on water supply, drainage and solid waste management systems.

With a goal towards achieving sustainability in terms of resource and energy management, this course enables the students to deal with traditional as well as novel techniques to make buildings functional while imparting comfort, convenience, health and hygiene to the occupants.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	As a part of introduction, students will be able to understand the relevance of services and infrastructural systems as an integral part of architectural design.
CO2	To be able to understand the water flow in a building, and understand the concept of 3Rs (reduce, reuse and recycle) of solid waste within a building.
CO3	To be able to explore and investigate the integration of building infrastructure, material and structural components.
CO4	To be able to apprehend how building services and infrastructure informs the architectural design.

Rubrics

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks:	Exercise 01 & 02: Marks out of	Credits	Date of submission		
SECOND YEAR - SEM 3	Arch. Building services		BARC 308	50		3			
Exercise: Title	Understanding toilet design and its critique through detailed drawing of their home								
Exercise Note/task	Detailed drawing of toilet showcasing all three systems - structural, services and constructional systems with material specification								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Understanding of systems and their integration with other systems as well as with space</b>	1)Complete understanding of systems 2) its integration with other system 3) its hierarchy in planned space	1)Very good understanding of systems 2) its integration with others and its position in planned space.	Good understanding of systems and its integration and its position in planned space.	Fairly good understanding of systems and its position in planned space.	1)Understanding of a system is seen along with other systems 2) lacking spatial integration.	1)Lesser understanding of the system is seen along with other systems 2) lacking spatial integration.	1)Poor understanding of the system. 2)No understanding of integration with other systems.	Extremely poor understanding of the system.	Non-Submission
<b>Representation Technique and final submission</b>	Logical and semantic representation	Logical representation	Good representation in all aspect	Good representation in all aspect	Fairly represented in all aspect	The drawings could be understood	Representation needed clarification	Drawings not clear enough	Non-Submission
<b>Attendance, time management and participation in Studio</b>	Attends 95% of total classes	Attends 90% of total classes	Attends 85 % of total classes	Attends 80% of total classes	Attends 75% of total classes	Attends 70% of total classes	Attends 60% of total classes	Attends 55% of total classes	Attends less than 50% of total classes

CO-PO MAPPING

CO-PO mapping for a course of "UG program"									
Sr. No.	CO description	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	As a part of introduction, students will be able to understand the relevance of services and infrastructural systems as an integral part of architectural design.	2	2	2	0	0	0	3	2
CO2	To be able to understand the water flow in a building, and understand the concept of 3Rs (reduce, reuse and recycle) of solid waste within a building.	0	0	0	1	1	3	3	2
CO3	To be able to explore and investigate the integration of building infrastructure, material and structural components.	1	0	3	0	0	0	3	2
CO4	To be able to apprehend how building services and infrastructure informs the architectural design.	2	2	3	0	0	0	3	2

CO-PO mapped syllabi of B.Arch Course 2021-2022 – Environmental Studies

<b>COURSE CODE</b>	EVS3	<b>CREDITS</b>	2
<b>COURSE NAME</b>	ENVIRONMENTAL STUDIES III	<b>SESSIONAL MARKS</b>	50 marks per semester
<b>FACULTY</b>	KIMAYA K, SHANTANU	<b>EXAM SCHEME</b>	Internal
<b>CLASS DAY/TIME</b>	TUESDAY   1.20-3.00 PM IST	<b>NON CLASS TIME</b>	2 HOURS PER WEEK

<b>PEDAGOGIC INTENT</b>	The course is designed to introduce Bioclimatic or Climate responsive Architecture. It focuses on understanding climatic parameters and its implication over building design and also emphasise the need for climate driven designs in today's context. The course discusses building physics in detail to understand the relationship between the building elements and climate. It enables the student to strategize the designs as per the context and varied climate to create a symbiotic energy efficient design. It also touches upon the principles of sustainability breaking certain myths and strengthening the fundamentals. The passive techniques and grass root mechanical systems are discussed in detail and advance technology is being introduced for further persuasion. The framework of the course revolves around three principles climate responsive design, energy efficient building technology and Sustainability. It allows student to explore the subject through reading material, case studies, available software. This allows student to inform their architectural design project and use climatic parameters to inform their design issues.
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<b>COURSE METHODOLOGY</b>	Lectures and discussion around Koppen Geir climate classification. Introducing architectural projects using various passive design techniques across different climates and amount of energy conserved. Discussion on how climate can inform architectural forms and internal space planning along with site planning to achieve a holistic approach towards Built Environment
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	06/07/2021	Tools and Techniques for Climate understanding and Analysis	Sustainable Architecture	100%
2	13/07/2021	Application of climate study at the initial stage of design process		
3	20/07/2021	Site and Microclimate - Part I		
4	27/07/2021	Site and Microclimate - Part II		
5	03/08/2021	Passivhaus		
6	10/08/2021	Net Zero House		
7	17/08/2021	Eco-Village		
8	24/08/2021	Building Physics - Embodied Energy and Low energy consumption buildings		
9	31/08/2021	Building Physics - Thermal comfort		
10	07/09/2021	Building Physics - Visual comfort		
11	14/09/2021	Building Physics and Environmental Systems - Part I		
12	21/09/2021	Building Physics and Environmental Systems - Part II		
13	28/09/2021	Solar and Wind		
14	05/10/2021	Water		
15	12/10/2021	Waste		
16	19/10/2021	Holistic Sustainable Initiative	Submission of assignment	

<b>LEARNING OUTCOMES</b>	The student should be able to establish a relationship between climate and built environment. Apply various tools, methods and parameters to create climate responsive architecture which is more efficient and have low carbon footprint.
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<b>READING LIST/ REFERENCES</b>	Environmental Planning - Anne Beer, The ecology of Building Materials, Atals for Sustainable Buildings, Aqaecture / Greening Asia, The Zed Life, Solarium, Climate Consultant Open Ware Software.
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Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course:** Environmental Studies 3  
**Course Code:** BARC 306  
**Sem 3**  
**Year 21-22**

**Course Objectives:**

The course is designed to introduce Bioclimatic or Climate responsive Architecture. It focuses on understanding climatic parameters and its implication over building design and also emphasize the need for climate driven designs in today's context. The course discusses building physics in detail to understand the relationship between the building elements and climate. It enables the student to strategize the designs as per the context and varied climate to create a symbiotic energy efficient design. It also touches upon the principles of sustainability breaking certain myths and strengthening the fundamentals. The passive techniques and grass root mechanical systems are discussed in detail and advance technology is being introduced for further persuasion. The framework of the course revolves around three principles climate responsive design, energy efficient building technology and Sustainability. It allows student to explore the subject through reading material, case studies, available software. This allows student to inform their architectural design project and use climatic parameters to inform their design issues.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To be able to understand the relationship between built-environment design and environmental parameters including natural ventilation and air quality, daylight etc.
CO2	To explore how the different environmental aspects inform thermally comfortable design decisions, through vernacular and contemporary case study approaches.
CO3	To be able to recognize passive architectural features, identify the materials, details including built forms, construction techniques and principles that evolve due to climatic responses.
CO4	To be able to analytically understand the climatic variables, followed by a resolution of the building keeping in view a strong climate response.

**Rubrics:**

Year of Assessment : 2021-2022	USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	BAR C 306	Sessional Marks :	Exercise 01: Marks out of	Credits:	Date of submission	Upgrade 01	Upgrade 02	
SECOND YEAR- SEM 3	EVS	BAR C 306	50	50	2	19.10.2021			
<b>Exercise: Title</b>	Sustainable architecture								
<b>Exercise Note / Task</b>	Present case studies on active and passive techniques applied in different climate-sensitive architectural designs								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% - 55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Understanding of environment and their integration with other systems as well as with space</b>	1)Complete understanding of systems 2)its integration with other system 3) its hierarchy in planned space	1)Very good understanding of systems 2)its integration with other and its position in planned space.	Good understanding of systems and its integration and its position in planned space.	Fairly good understanding of systems and its integration and its position in planned space.	1)Understanding of system is seen along with other systems 2) lacking spatial integration.	1)Lesser understanding of system is seen along with other systems 2) lacking spatial integration.	1)Poor understanding of system. 2)No understanding of integration with other systems.	Extremely poor understanding of system.	Non-Submission
<b>Representation Technique and final submission</b>	Logical and semantic representation	Logical representation	Good representation in all aspect	Good representation in all aspect	Fairly represented in all aspect	The drawings could be	Representation needed clarification	Drawings not clear enough	Non-Submission

						underst ood			
<b>Attendance , time managem ent and participatio n in Studio</b>	Attends 95% of total classes	Attends 90% of total classes	Attends 85 % of total classes	Attends 80% of total classes	Attends 75% of total classes	Attends 70% of total classes	Attends 60% of total classes	Attends 55% of total classes	Attends less than 50% of total classes

COPO Mapping Setup for Sem 3

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To be able to understand the relationship between built-environment design and environmental parameters including natural ventilation and air quality, daylight etc.	2	3	3	2	1	1	2	1
CO2	To explore how the different environmental aspects inform thermally comfortable design decisions, through vernacular and contemporary case study approaches.	2	3	1	2	1	2	2	1
CO3	To be able to recognize passive architectural features, identify the materials, details including built forms, construction techniques and principles that evolve due to climatic responses.	3	2	2	1	2	2	2	1
CO4	To be able to analytically understand the climatic variables, followed by a resolution of the building keeping in view a strong climate response.	2	2	2	1	2	2	3	1

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation



<b>COURSE CODE</b>	307	<b>CREDITS</b>	2+ (2 AD)
<b>COURSE NAME</b>	Architectural representation and detailing 2.	<b>SESSIONAL MARKS</b>	50 ARD +50AD
<b>FACULTY</b>	Mansi Bhat, Rutika Parulkar, Sonal Sundararajan	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/ TIME</b>	60 hours	<b>NON-CLASS TIME</b>	2 hrs/week

<b>PEDAGOGIC INTENT</b>	The course aims to expand the notions of spatial representation and to push the boundaries of the map/drawing into analytical, descriptive, propositional and expressive possibilities. The objective of the course is to introduce students to critical modes of representation that lead to new ways of seeing and knowing, as tools of observation and documentation and expression. The second objective is to sharpen an understanding of the choice of the modes of representation and their possibilities through experiments with various mediums.
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<b>COURSE METHODOLOGY</b>	This is a studio and lecture based course. The lectures will consist of introductions to various techniques within art and architecture, their logics, their emergence and histories and their critical and revelatory possibilities. These will open out terms such as collage/assemblage, installation, happenings, etc. The studio will be conducted as group exercises around as an exploration within the city. Students will be asked to identify spaces that may be hidden, leftover ephemeral, illicit, emptied, that lie under, behind or at the margins of what the primary city is imagined to be.
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LEC T	DATE	TEACHING CONTENT
1	17.06.2022	2nd sem studio
2	24.06.2022	2nd Sem exam
3	01.07.2022	Elective Week
4	08.07.2022	Introduction to the course. Screening of Being John Malkovich. Introduction to the assignment
5	15.07.2022	Students presentations /Discussions in groups
6	22.07.2022	What is a Map? What is an Archive?
7	29.07.2022	What is a Collage/Assemblage?

8	05.08.2022	Film Screening- 32 short films on Glen Gould.
9	12.08.2022	Students presentation in Groups
10	19.08.2022	What is an Installation?
11	26.08.2022	Visit to a Gallery/Museum
12	02.09.2022	Ganesh Chaturthi Holiday
13	09.09.2022	Students presentation in Groups
14	16.09.2022	What is a Happening/Performance?( space and movement and Theater)
15	23.09.2022	Final submission

<b>LEARNING OUTCOMES</b>	The students will learn to analyze the city, or frame readings of the city through diverse lenses. They will learn to work in different mediums of spatial representation for their expressive possibilities.
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<b>READING LIST/ REFERENCES</b>	Art Since 1900's Foster, Hal. Art Since 1900: Modernism, Antimodernism, Postmodernism. London: Thames & Hudson, 2004 Rosalind Krauss, Bachelors (Cambridge, MA: MIT Press, 1999), Flores and Prats : Sala Beckett Thought by Hand : The Architecture of Flores & Prats
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CO-PO mapped syllabi of B.Arch Course 2022-2023 – *Visual Studies Semester 3*

Program Educational Objective (PEOs): B.Arch.

- The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking
- To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
- To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete)
- To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
- To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
- To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
- To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
- To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture).

Programme-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools of communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non conventional as well as those that are scientific and mathematical).
2. To enable the student to de-layer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

POs for UG programs: B.Arch. VS Studios

<p>Program Outcomes (POs)</p>	<ol style="list-style-type: none"> <li>1. To develop the ability to visualize three dimensional form and represent it using the conventional techniques of architectural drawing and learn hand-drafting skills.</li> <li>2. To comprehend drawing as a tool of observation and analysis and design.</li> <li>3. To develop a familiarity with the history of representation techniques, in art and architecture and understand representation techniques as analytical and critical tools</li> <li>4. To develop an understanding of the choice of the modes of representation and their possibilities through experiments with various mediums.</li> <li>5. To develop the ability to push the boundaries of the map or drawing into analytical, descriptive, propositional and expressive possibilities.</li> </ol>
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Course: Architectural Representation and Detailing 3 Visual Studies -3  
 Course Code: 307 Sem 3 Year -Second Year

**Course Objectives:**

**Note:** The Visual Studies course in the second year is a space for experiments in representation. It recognises representation as primary to the work of architecture and allied spatial practices. It opens up methods of representation as tools of observation, analysis, and conceptualisation of the world. It will engage with representation as a critical, expressive and propositional act. The method of instruction will be a working studio with lecture presentations

- The course aims to expand the notions of what constitutes the discipline of cartography and spatial representation and to push the boundaries of the map/drawing into analytical, descriptive, propositional and expressive possibilities.
- The objective of the course is to introduce students to drawing as a critical way of seeing and knowing, as a tool of observation and documentation.
- The second objective is to sharpen an understanding of the choice of the modes of representation and their possibilities through experiments with various mediums.
- The course will expand the critical possibilities or spatial research and representation. It will expose students to diverse techniques and methods of mapping and representation. The students will develop skills in various media and softwares, through the exercise.
- They will be sensitised to the nuances of the urban environment

**Assignment:**

The studio will be an exploration of Other Spaces in the city as they are conceptualised, lived, experienced and produced. The student groups will be assigned various sites in the city. In the first stage they will observe and attempt to represent the spaces both physical, non-physical, real, notional and experiential, using various media. In the second stage each group will produce a work in the form of a immersive spatial drawing, video or multi media work.

Course Outcomes (CO):

Course Outcome (Co)	Description
CO1	Encourage and equip students to be able to make critical and ethical choices of medium and form in their own work.
CO2	Enable students to create innovative analytical critical and expressive multimedia works as spatial representations and maps.
CO3	Sensitise students to issues and spaces in the urban environment.

**Rubrics**

Year of Assessment: 2021- 2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture									
Year & Sem	Subject:	University Subject Code	Sessional Marks: max 100	Exercise : Marks out of	Credits	Date of submission				
2021-22— SEM3	ARCHITECTURAL REPRESENTATION AND DETAILING	BARC 307	100	50+(50 AD)	2 ARD+2 AD	One per week				
<b>Exercise: Title</b>	OTHER SPACES									
<b>Exercise Note / Task</b>	This is a studio and lecture based course. The lectures will consist of introductions to various techniques within art and architecture, their logics, their emergence and histories and their critical and revelatory possibilities. These will open out terms such as collage/assemblage, installation, happenings, etc. The studio will be conducted as group exercises around an exploration within the city. Students will be asked to identify spaces that may be hidden, leftover ephemeral, illicit, emptied, that lie under, behind or at the margins of what the primary city is imagined to be.									
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>	
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>	
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0	
<b>Area of Evaluation</b>										
Choices and Conceptual understanding	Selections and observations reflect a new and innovative interpretation of the concepts discussed in class. The work breaks new conceptual ground in its exploration of the subject and brings new ideas into the discussion.	Selections and observations reflect a new and innovative interpretation of the concepts discussed in class. The work brings new ideas into the discussion.	Selections and observations reflect an exceptional and thorough understanding of the concepts discussed in class. The concepts are clearly articulated through the work	Selections and observations reflect an exceptional understanding of the concepts discussed in class. The concepts are clearly and expansively articulated through the work	Selections and observations reflect a thorough understanding of the concepts discussed in class. The concepts are clearly articulated through the work	Selections and observations reflect a clear understanding of the concepts discussed in class. The concepts are fairly articulated through the work	Selections and observations reflect a fair understanding of the concepts discussed in class. The concepts are fairly articulated through the work	Selections and observations reflect a satisfactory understanding of the concepts discussed in class. The concepts are satisfactorily articulated through the work	Selections and observations reflect a complete lack of understanding of the concepts. The work bears no relevance to them.	Selections and observations reflect a complete lack of understanding of the concepts. The work bears no relevance to them.

Techniques of representation and presentation.	Innovative and inventive techniques of representation and presentation. Work breaks new ground in terms of the exploration and experiments in media and representation. The quality of presentation reflects outstanding skill rigour and effort.	Innovative and inventive techniques of representation and presentation. The quality of presentation reflects exceptional skill rigour and effort.	Outstanding techniques of representation and presentation. Quality of work reflects great rigour, skill and effort.	Excellent techniques of representation and presentation. Quality of work reflects rigour, skill and effort.	Very good techniques of representation and presentation. Quality of work reflects rigour, and effort.	Techniques of representation and presentation are good. Quality of work reflects rigour, and effort.	A fair demonstration of Techniques of representation and presentation.	A satisfactory demonstration of Techniques of representation and presentation.	Incomplete work of poor quality that displays a complete lack of effort.
Attendance, Participation.	90% and above	85-90%	80-85%	71-79%	66-70%	61-65%	56-60%	51-55%	Less than 50%

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Encourage and equip students to be able to make critical and ethical choices of medium and form in their own work.	2	3	2	2	2	2	3	3
CO2	Enable students to create innovative analytical critical and expressive multimedia works as spatial representations and maps.	2	3	2	2	2	2	3	3
CO3	Sensitise students to issues and spaces in the urban environment.	2	3	2	2	1	2	3	3

<b>COURSE CODE</b>	BARC 309	<b>CREDITS</b>	2
<b>COURSE NAME</b>	Architectural Theory 1	<b>SESSIONAL MARKS</b>	Internal - 50
<b>FACULTY</b>	Ginella George Rohan Shivkumar	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Thursday / 1.20-3.00 pm	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	The Theory of Design Course seeks to provide a space to enable the students with critical thinking skills across the five years of architecture school. It provides a space for the student to consider the relationship between the 'self' and the frameworks through which it is constructed, and the choices made with respect to design.
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<b>COURSE METHODOLOGY</b>	The Architectural Theory course in the second year primarily focuses in the ideas of the modern movement. The course in the third semester will trace ideas that have shaped architectural thinking over the past 150 years around the world. This will extend into the fourth semester. While architecture will be the primary discipline that will be looked at in this course, the objects will be placed in conceptual, cultural and historical context through other references that may come from literature, visual art or film. Relevant readings will also be interspersed through the course.
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LECT	DATE	TEACHING CONTENT
1	01.07.2021	What is Theory?
2	08.07.2021	How to read Form- Diagram Form, Space and Order
3	15.07.2021	How to read Form- Pattern Pattern Language, Jazz
4	22.07.2021	How to read Form - Body/Phenomenology
5	29.07.2021	How to read Form - Context- Space/Time/ Concept
6	05.08.2021	What does it mean to be modern The death of God,Neo classical architecture, Indian princely states
7	12.08.2021	What does it mean to be modern - Utopia Industrial utopias
8	19.08.2021	What does it mean to be modern - Utopia Garden cities
9	26.08.2021	What does it mean to be modern - The break with the past
10	02.09.2021	What does it mean to be modern - Pastoral Utopia
11	09.09.2021	What does it mean to be modern - Nation state
12	16.09.2021	Truth in Nakedness
13	23.09.2021	Discussion
14	30.09.2021	Discussion

<b>LEARNING OUTCOMES</b>	1. To critically analyse and take a position with respect to acts of design 2. To engage with the ideas and concepts that have shaped architectural thinking.
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<b>READING LIST/ REFERENCES</b>	1. Alexander, Christopher et al. A Pattern Language: Towns, Buildings, Construction, Oxford University Press (1977)AEJ Morris- History of Urban Form 2. Pallasmaa, Juhani.The Eyes of the Skin: Architecture and the Senses, Wiley; 3 <sup>rd</sup> edition (2012)Gunther Binding-High Gothic-Age of Great Cathedrals 3. Massey,Dorreen. Space,place, gender,University of Minnesota Press (1994) 4. Fritzsche, Peter. Nietzsche and the Death of God: Selected Writings, Waveland
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## CO-PO mapped syllabi of B.Arch Course 2021-2022– Architectural Theory 1

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delay the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Theory 1**  
**Course Code: BARC 309**

**Sem 3**

**Second Year**

**Course Objectives:**

- To enable the students with critical thinking skills.
- To consider the relationship between the ‘self’ and the frameworks through which it is constructed, and the choices made with respect to design.
- To create a dialectical relationship between the concepts that shaped the object and the nature and presence of the object itself.
- To create an unstable field within which questions and concerns can oscillate constantly critiquing each other.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Understanding the ideas and concepts that have shaped architectural thinking
CO2	Analysing and taking a position with respect to acts of design
CO3	Applying the learning from various references of literature, visual art or film, by placing the built object in conceptual, cultural and historical context

**Rubrics:**

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	University Subject Code	Sessional Marks: max 100	Exercise 01 & 02: Marks out of	Credits	Date of submission			
SECOND YEAR - SEM 3	Arch Theory 3	BARC 309	50	50	2				
Exercise: Title	Building Analysis								
Exercise Note / Task	Students will select a structure designed after 1950 to discuss and analyse in detail								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
Discussion through Images	Innovative. Experimental and Bold Clarity. Expressive of relevance.	Very impressive. Highly demonstrative.	Impressive attempt to go beyond requirement. Excellent presentation of ideas.	Demonstrative. Very good attempt to present ideas.	Has gone beyond the requirement. More than adequate attempt to present ideas.	Attempts to express and go beyond the requirement. Just adequate	No further enquiry. Barely encourages a discussion. Needs clarity	No further enquiry. Does not encourage a discussion	Does not complete the assignment
Analysis and Ideas	Innovative. Experimental and Bold Clarity.	Very impressive. Highly demonstrative.	Excellent presentation of ideas.	Very good attempt to present ideas.	More than adequate attempt to present ideas.	Just adequate attempt to present ideas.	No further enquiry.	No further enquiry.	Does not complete the assignment
Participation in Studio	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes

**COPO Mapping Setup for Sem 3**

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Understanding the ideas and concepts that have shaped architectural thinking	1	3	3	0	0	3	3	0
CO2	Analysing and taking a position with respect to acts of design	1	3	2	1	0	3	3	2
CO3	Applying the learning from various references of literature, visual art or film, by placing the built object in conceptual, cultural and historical context	0	0	1	0	1	3	3	0

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 320	<b>CREDITS</b>	2(Tectonics) + 1(History)+1(Humanities)
<b>COURSE NAME</b>	College Projects 3	<b>SESSIONAL MARKS</b>	Internal – 100
<b>FACULTY</b>	Jamshid Bhiwandiwalla, Manoj Parmar, Rutika Parulkar	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Monday / 9.40-11.20am, Wednesday / 1.20-3.00pm	<b>NON-CLASS TIME</b>	

Course 1: History

<b>COURSE CODE</b>	BARC 320	<b>CREDITS</b>	2 (1 CP + 1 Humanities)
<b>COURSE NAME</b>	College Projects 3 (History)	<b>SESSIONAL MARKS</b>	25 + 25
<b>FACULTY</b>	Jamshid Bhiwandiwalla	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Monday / 9.40-11.20am,	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	Cities represent the collective and have been at the heart of civilization. Most renowned cities have exhibited their versatility through their cultural traits and institutions or through the economic trade they have been able to sustain from all adversities. From river affronted historic cities to those classical towns with the high ground Agora, all of these have unique characteristics and patterns to learn from. Medieval towns both in Europe and India have displayed fortifications and mighty gateways to assure the trading classes of their security whereas later cities planned central avenues and boulevards through which their armies could march across more or less representing the same. However, cities are celebrated for the culture they exhibit through the people, their lifestyle represented by the public and social institutions they have built. Most renowned towns have also undergone disasters once in a while however it has been the cultural and economic resilience of the collective that has brought about its revival and most of them have sustained till date.
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<b>COURSE METHODOLOGY</b>	A method adopted to understand cities in a comparative manner in the given era/ timeline is important to gather the achievements at various parts of the globe during those times through lectures, viewing documentaries and critical reading.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	06/17/2021	Introduction to the course + Prehistoric towns of Jericho and Catal Huyuk		
2	06/24/2021	Planning of Harrapan towns and its broad comparison to Classical Greek towns with the acropolis and grid iron planning		
3	07/01/2021	River civilizations: Mesopotamian city of Babylonia along the Euphrates and the Egyptian city of Thebes along the Nile		
4	07/08/2021	Classical towns of Greece and its influences on Rome its temples, foras and dense neighbourhoods		
5	07/15/2021	Vedic cities planned on the basis of the Varnas with Buddhist monasteries on their outskirts along trade routes		
6	07/22/2021	North Indian river towns like Varanasi and Ujjain		
7	07/29/2021	South Indian Temple towns like Tanjavur, Madurai and Srirangam		
8	08/05/2021	Evolution of Constantinople and its Classical and Byzantine influences		
9	08/12/2021	Latin American Hill town of Machu Picchu, Cusco		

10	08/19/2021	Evolved medieval towns in Europe and in India with the emphasis on security through fortified cities
11	08/26/2021	Medieval cities during the Sultanate and Mughal times
12	09/02/2021	Introduction to the assignment
13	09/09/2021	Forbidden city of Beijing
14	09/16/2021	Review of assignment
15	09/23/2021	Review of assignment
16	09/30/2021	Final submission of assignment

<b>LEARNING OUTCOMES</b>	Understanding of characteristic features of both historic, planned and evolved towns are brought to the fore along with the influences that shape them. Assignments in recording the traits of these towns through morphological drawings and influences that shaped them through innovative representation.
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<b>READING LIST/ REFERENCES</b>	Global History of Architecture by Ching, Jarzombek, Prakash, History of Architecture in India by Christopher Tadgell
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Course 2: Tectonic Studies

<b>COURSE CODE</b>	BARC 320	<b>CREDITS</b>	2 CP
<b>COURSE NAME</b>	College Projects 3 (Tectonics)	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Manoj Parmar, Rutika Parulkar	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Wednesday / 1.20-3.00pm	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	Tectonics plays an important role in shaping our built environment. It has an impact on the way spaces are made and experienced. The advent of concrete is one example of how architecture transformed radically not only through structural expression but also changed cultural and aesthetic dimensions through which built environment is perceived. In more recent times the possibilities which unfolded because of the computer and digital means have played a significant role in how the role of tectonics has changed from classical ones in shaping architecture. This series of talks looks to understand how different factors of Tectonics has led to an impact on spatial organization and experience in architecture creating 'Poetics of Construction'
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<b>COURSE METHODOLOGY</b>	Based on the content structure, lectures with a broad arena of examples will be held over the semester. Of these about 10-12 lectures will be input lectures conducted by faculty members. Discussion sessions will be interspersed in the flow, appearing at the culmination of each board theme. The idea is that each concept/theme (as per the structure of the course) will be elucidated with multiple examples. The same construct/building might be discussed over six semesters focusing on its different aspects. This course will not have any assignments however it will be evaluated on the basis of students participation and engagement. Each class will be broadly structured as under: 10 minutes: Lecturers overview understanding of topic 40 minutes: Demonstration of this through one or multiple examples across history and geography. Cases will be illustrated using drawings, photographs, sketches. 50 minutes: Clarifications & Discussion and followed by a short activity in class.
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LECT	DATE	TEACHING CONTENT
1	08/07/2021	Introduction
2	15/07/2021	Surface, ornamentation and stories
3	22/07/2021	Concrete and culture – Part 1
4	05/08/2021	Concrete and culture – Part 2
5	12/08/2021	Tectonic Postcards
6	19/08/2021	Bold tectonic operatives part 1 (Anthology of houses)havan
7	26/08/2021	Bold tectonic operatives part 2 (Anthology of houses)
8	02/09/2021	Steel and industrial revolution
9	09/09/2021	Anthology of houses
10	23/09/2021	Organization as mechanism – part 1
11	30/09/2021	Organization as mechanism – part 2
12	07/10/2021	Diagramming as a tool. – introduction and discussion
13	14/10/2021	Wall sections
14	21/10/2021	Discussion on diagramming
15	28/10/2021	Discussion on diagramming
16	28/10/2021	Assignment Submission

<b>LEARNING OUTCOMES</b>	<p>The main Tectonic factors in architecture through object, details, joint, material, construction, structure, and interaction of all of the above.</p> <p>Students shall be able to analyse</p> <p>To develop an understanding towards the expressive potential of structure</p>
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### CO-PO mapped syllabi of B.Arch Course 2021-2022\_College Projects 3

#### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

#### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

#### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)



6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: College Projects 3**                      **Sem: 3**                      **Second Year**  
**Course Code: BARC 320**

**Course 1: College Projects (History)**                      **Sem: 3**                      **Second Year**

**Course Objectives:**

- To create frameworks to enable the student to deal with the shifting scales in the historiography of the historical object
- To understand the constellation of ideas discussed in the earlier semesters to trace and write the history of a built object.
- To understand and analyze the built object through various thoughts and responses.

**Course 2: College Projects (Tectonics)**                      **Sem: 3**                      **Second Year**

**Course Objectives:**

- To understand architectural form through its tectonic and physical aspects.
- To analyse an architectural object.

**Course Outcomes (CO): (Combined Course outcomes for Tectonic studies and History)**

Course Outcome (Co)	Description
CO1	Understanding architecture as an outcome of socio cultural processes
CO2	Analysing historical ideas and their implications on architectural form
CO3	Adopting the modes of production as a chronological system to discuss the ideas that lead to a production of architecture
CO4	Understanding the making of an architectural object through details, material and structure
CO5	Analysing the expression of an architectural object

**Rubrics 1 (History):**

Year of Assessment: 2021- 2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	University Subject Code	Sessional Marks: max 100	Exercise: Marks out of	Credits	Date of submission			
SECOND YEAR - SEM 3	College Projects 3 (History)	BARC 320	50	50	2CP + 1HU				
Exercise: Title	Essay								
Exercise Note / Task	The student will be evaluated on the idea that they will put forth in the paper. An interim discussion will be to assist the student to articulate the idea.								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Discussion through references	Innovative. Experimental and Bold Clarity. Expressive of relevance.	Very impressive . Highly demonstrative.	Impressive attempt to go beyond requirement. Excellent presentation of ideas.	Demonstrative. Very good attempt to present ideas.	Has gone beyond the requirement. More than adequate attempt to present ideas.	Attempts to express and go beyond the requirement. Just adequate	No further enquiry. Barely encourages a discussion. Needs clarity	No further enquiry. Does not encourage a discussion	Does not complete the assignment
Analysis and Ideas	Innovative. Experimental and Bold Clarity.	Very impressive . Highly demonstrative.	Excellent presentation of ideas.	Very good attempt to present ideas.	More than adequate attempt to present ideas.	Just adequate attempt to present ideas.	No further enquiry.	No further enquiry.	Does not complete the assignment
Participation in Studio	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes

**Rubrics 2 (Tectonics):**

Year of Assessment: 2021- 2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture									
Year & Sem	Subject:	University Subject Code	Sessional Marks: max 100		Exercise 01: Marks out of	Credits	Date of submission			
<b>SECOND YEAR - SEM 3</b>	<b>College Projects 3 ( Tectonics)</b>	<b>BARC 320</b>	<b>50</b>		<b>50</b>	<b>2CP</b>				
<b>Exercise: Title</b>	Essay									
<b>Exercise Note / Task</b>	The student will be evaluated on the idea that they will put forth in the paper. An interim discussion will be to assist the student to articulate the idea.									
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>	
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>	
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0	
<b>Area of Evaluation</b>										
<b>Writing</b>	1) Extremely articulate in framing the area for inquiry. 2) Very clear structure for presentation. 3) Well researched	1) Very articulate in framing the area for inquiry. 2) Clear structure for presentation. 3) Well researched	1) Clear and Articulate in framing the area for inquiry. 2) Well researched structure for presentation .	1) There is clarity in the area of inquiry 2) Research and structure for presentation is fairly good.	1) The area of inquiry is fairly good 2) Research and structure for presentation can be better.	1) The area of inquiry is good 2) Research and structure for presentation is fair.	1) There is clarity in the area of inquiry 2) Research and structure for presentation is found lacking	1) There is potential for an area of inquiry but needs more clarity. 2) No research and structure for presentation	Non submission	
<b>Participation in Studio</b>	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes	

**COPO Mapping Setup for Sem 3**

CO-PO mapping for a course of “UG program”										
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	
CO1	Understanding architecture as an outcome of socio cultural processes	1	1	3	2	2	3	3	3	
CO2	Analysing historical ideas and their implications on architectural form	1	2	0	1	0	3	3	1	
CO3	Adopting the modes of production as a chronological system to discuss the ideas that lead to a production of architecture	0	2	0	0	0	1	1	0	
CO4	Understanding the making of an architectural object through details, material and structure	3	3	3	1	0	3	3	2	
CO5	Analysing the expression of an architectural object	3	3	3	2	1	3	3	3	

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

# Semester 4

## Scheme of Teaching and Examinations

# Semester 4

### Scheme of Teaching and Examinations Bachelor of Architecture (B. Arch.) Semester IV

Sub No.	Semester IV Exam conducted by individual colleges SUBJECTS	Teaching Scheme		Credits		
		Lecture	Studio	Theory	Studio	Total
401	Architectural Design Studio		8		8	8
402	Allied Design Studio		3		3	3
403	Architectural Building Construction	3	3 classes technology studio	3	1	4
404	Theory and Design of Structures	2		2	1	3
408	Architectural Building Services	2		2	1	3
405	Humanities	3		3		3
407	Architectural Representation & Detailing	2	2	2	2	4
409	Architectural Theory	2				2
420	College projects		3			3
421	Elective		3			3
	<b>Total</b>	<b>14</b>	<b>22</b>	<b>14</b>	<b>22</b>	<b>36</b>

Sub. No.	Semester IV Exam Exam conducted by individual colleges SUBJECTS	Examination Scheme			
		Theory (paper)	Internal	External viva	Total
401	Architectural Design Studio		100	100	200
402	Allied Design Studio		100		100
403	Architectural Building Construction	50	50		100
404	Theory and Design of Structures	50	50		100
408	Architectural Building Services	50	50		100
405	Humanities	50	50		100
407	Architectural Representation & Detailing		100		100
409	Architectural Theory		50		50
420	College projects		100		100
421	Elective		100		100
	<b>Total</b>				<b>1050</b>

# Semester 4

## Time-Table

	MONDAY		TUESDAY		WEDNESDAY		ARD		FRIDAY		SATURDAY	
8.00 - 8.50	<b>Humanities</b>		<b>Architectural Design</b>		<b>Allied Design</b>		<b>Technology studio + Architectural Representation and Detailing (ABC +ABS+TOS)</b>		<b>Architectural Design</b>			
	405	2HU	401	4 of 8	402	3 Allied + 1ABC	403, 404, 408,407	1 ABC +1 TOS+ 1ABS + 4ARD - 7	401	4 of 8		
8.50 - 9.40	Hussain	SHWETA										
			NEMISH	AJAY	Ginella	Swati	Charvi	Dharmesh	NEMISH	AJAY		
9.40 - 10.30	<b>TECTONIC STUDIES (COLLEGE PROJECT)</b>		SHREYA	ADVAIT	George	Rutika	Kimaya	Mamta	SHREYA	ADVAIT		
		2CP	<b>RUTIKA</b>	ROHAN C	HUSSAIN	Milan	Shuchi	Minal	<b>RUTIKA</b>	ROHAN C		
10.30 - 11.20	Rutika	Ginella	MILANN	NISHANT			Vikram	Karann	MILANN	NISHANT		
							Aishwarya					
11.20 - 12.00												
12.00-12.50							<b>Technology studio + Architectural Representation and Detailing (ABC +ABS+TOS)</b>					
							403, 404, 408,407					
12.50 - 1.20												
1.20 - 2.10	<b>Technology Lecture 2 (Architectural Building Services)</b>		<b>Architectural Theory</b>		<b>History (Humanities &amp; College Project)</b>		<b>Technology studio + Architectural Representation and Detailing (ABC +ABS+TOS)</b>		<b>Technology Lecture 1 (Architecture Building Construction)</b>		<b>Theory of Structures</b>	
	408	2ABS	409	2		1 HU + 1CP	403, 404, 408,407		403	2 ABC	404	2
2.10 - 3.00			Rohan	Ginella	Sarah	Rutika			Vikram	Mamata	RAJITHA	NEERAJ
					Sanaeya							

**NEW GEOGRAPHIES: BUILDING IN LANDSCAPES**

<b>COURSE CODE</b>	BARC 401	<b>CREDITS</b>	8
<b>COURSE NAME</b>	ARCHITECTURAL DESIGN	<b>SESSIONAL MARKS</b>	INTERNAL:100 / EXTERNAL: 100
<b>FACULTY</b>	Rohan Chavan, Rutika Parulkar, Nikhil Khadilakar, Ajay Sonar, Shreya Nagrath, Nishant Mehta, Milan Shakuniya, Nemish Shah.	<b>EXAM SCHEME</b>	100 – External jury conducted by college
<b>CLASS DAY/TIME</b>	T / F (08:00 – 11:20)	<b>NON-CLASS TIME</b>	4

<b>PEDAGOGIC INTENT</b>	The intent of the studio is to enable the student to learn to organise collective dwelling spaces in relationship to each other and in a sensitive historic / metaphorical / mythic context, in order to create conceptually rich and contextually appropriate architecture.
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<b>COURSE METHODOLOGY</b>	<p><b>NEW GEOGRAPHIES: BUILDING IN LANDSCAPES</b></p> <p>The Studio starts with a strong focus on the landscape and the geography of a site. 4 Sites, each located in a different geography, across India will be selected for the Studio. Each Geography will be studied by the students for its Geological / Cultural / Climatic and other unique characteristic, and a specific location within that geography will be selected as the site for the project. It will be important for the student to dwell on the Mythic and the metaphoric quality of the site, and engage deeply with the place itself. Following this, the student will undergo a series of exercises, designed by the group faculty to give shape to the idea of the site, the place, its landscape and its geography. A program for collective dwelling will emerge through this study which will be unique to the site – and should translate into a strong conceptual idea for the project.</p> <p>The students are imagined to make meaningful connections with the context, the strong geography and unique character. The process will be slow and introspective. It will be different for each student and for each Geography and for each group. The project will be necessarily about human co-habitation and community – but the raison d’etre will emerge from the site itself.</p>
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WEEK	DAY	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1/1	T	23/11/21	INTRODUCTION TO THE STUDIO. Breaking into Individual Groups for conducting SITE RESEARCH under individual FACULTY.		
1/2	F	26/11/21	SITE RESEARCH / DOCUMENTATION		
2/1	T	30/11/21	SITE RESEARCH / DOCUMENTATION		
2/2	F	03/12/21	SITE RESEARCH / DOCUMENTATION (Finalisation of SITE and GROUND CONDITIONS for Design)		
3/1	T	07/12/21	REVIEW / PRESENTATION OF SITE. Each Group along with their respective FACULTY will present their site to the rest of the CLASS. FINAL DATA to be used commonly across all GROUPS.	SITE DATA / GEOGRAPHIC / GEOLOGICAL / CLIMATIC / CULTURAL / DEMOGRAPHIC / GIS MAPPTING etc. FINAL DATA Presentation.	20%
3/2	F	10/12/21	FINAL FACULTY GROUPS (Each Faculty to have 2 STUDENTS from each SITE).		
4/1	T	14/12/21	Desk Crit		
<b>C H R I S T M A S B R E A K</b>					
4/2	T	04/01/22	CONCEPTUAL JURY (INTERNAL)	IDEA / CONCEPT on SITE (any scale / medium).	20%
5/1	F	07/01/22	Desk Crit FACULTY PRESENTATION		
5/2	T	11/01/22	Desk Crit		
6/1	F	14/01/22	Desk Crit		
6/2	T	18/01/22	Desk Crit		
7/1	F	21/01/22	Desk Crit		
7/2	T	25/01/22	Desk Crit		
8/1	F	28/01/22	Desk Crit		
8/2	T	01/02/22	Desk Crit FACULTY PRESENTATION Desk Crit		
9/1	F	04/02/22	Desk Crit		

WEEK	DAY	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING
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**NEW GEOGRAPHIES: BUILDING IN LANDSCAPES**

				WEIGHTAGE
9/2	T	08/02/22	MID-TERM JURY (4 Groups of 2 Faculty Each)	Volumetric Site Model @ 1:200. Diagrams @ 1:200 For Site and Context For Internal Organisation Detail Plans / Sections @ 1:200 20%
10/1	F	11/02/22	Desk Crit	
10/2	T	15/02/22	Desk Crit	
11/1	F	18/02/22	Desk Crit	
11/2	T	22/02/22	Desk Crit FACULTY PRESENTATION	
12/1	F	25/02/22	Desk Crit	
12/2	T	01/03/22	Desk Crit	
13/1	F	04/03/22	Desk Crit	
13/2	T	08/03/22	Desk Crit	
14/1	F	11/03/22	PRE-FINAL JURY (INTERNAL)	2 Panels – A0 Size 20%
14/2	T	15/03/22	Desk Crit Representation Techniques (FACULTY PRESENTATION)	
15/1	F	18/03/22	Representation Week	
15/2	T	22/03/22	Representation Week	
16/1	F	25/03/22	Representation Week	
16/2	S	26/03/22	FINAL JURY (EXTERNAL)	2 Panels – A0 Size 100%

<b>LEARNING OUTCOMES</b>	To UNDERSTAND CONTEXT (in all its different forms) To UNDERSTAND ATMOSPHERE To GENERATE CONCEPTUAL IDEAS To UNDERSTAND FORMAL ARTICULATION and the meaning of LANGUAGE IN ARCHITECTURE
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<b>READING LIST/ REFERENCES</b>	Schulz Norberg, Christian: The Concept of Place from, Architecture, Meaning and Place, Selected Essays (p27-38) Rudofsky, Bernard: Preface from Architecture Without Architects, A Short Introduction to Non Pedigreed Architecture. Heidegger, Martin: The Origin of the Work of Art (Extract) Pallasama, Juhani: Extract from The Eyes of the Skin, Architecture and the Senses (p40-41) Bachelard, Gaston: Extract, Poetics of Space (p86-90) Holl, Steven: Extract from Anchoring (p.9-12) Zumthor, Peter: Atmospheres, Architectural Environments - Surrounding Objects. Iyer, Pico: Before the Fall, Pico Iyer Journeys (published in salon.com 1999)
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## CO-PO mapped syllabi of B.Arch. Course 2021-2022 – Architectural Design

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architecture Design**  
**Course Code: 401**

**Sem 4**

**Name – Second year**

### Course Objectives:

- To enable the students to learn organizing collective dwelling spaces
- To enable students to develop their own understanding of formal ideas along their developed concepts.
- To be able to construct ideas of drawings and representations in appropriate formats so as to convey their concepts and ideas.
- To enable them to familiarize with the techniques / processes and devices used by Architects - and also build within them a vocabulary to develop their own design strategies .
- To enable students to read and understand context (in all its different forms)
- To enable the students to develop poetic understanding of atmospheres of regions through sensorial perceptions.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To evaluate idea of region and context in relation with the idea of built and unbuilt through study trip and study drawings
CO2	To Understand Landform and ecological conditions of different regions and its implications on design
CO3	To create and map, different land conditions, draw and represent them
CO4	To Analyze formal articulation and the meaning of language in architecture
CO5	To apply different modes of representations by imagining spaces at various scales to help them in producing key components of representation like plan, sections and elevations

**Rubrics**

Year of Assessment : 2021-2022	USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	University Subject Code	Sessional Marks:	Exercise : Marks out of	Credits	Date of submission			
Second Year SEM 4	Architectural Design	401	100	100	8	26/03/2022			
Exercise: Title	NEW GEOGRAPHIES: BUILDING IN LANDSCAPES								
Exercise Note / Task	The Studio starts with a strong focus on the landscape and the geography of a site. 5 Sites, each located in a different geography, across India will be selected for the Studio. Each Geography will be studied by the students for its Geological / Cultural / Climatic and other unique characteristic, and a specific location within that geography will be selected as the site for the project. It will be important for the student to dwell on the Mythic and the metaphoric quality of the site, and engage deeply with the place itself. Following this, the student will undergo a series of exercises, designed by the group faculty to give shape to the idea of the site, the place, its landscape and its geography. A program for collective dwelling will emerge through this study which will be unique to the site – and should translate into a strong conceptual idea for the project. The students are imagined to make meaningful connections with the context, the strong geography and unique character. The process will be slow and introspective. It will be different for each student and for each Geography and for each group. The project will be necessarily about human co-habitation and community – but the raison d’etre will emerge from the site itself								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									

Attendance and participation in the studio	95% to 100% attendance and extremely participative along with taking complete responsibility of the studio assignments	1 90% to 95% attendance and visibly very participative along with sharing responsibilities of studio assignments	1 85% to 90% attendance and visibly participative along with sharing responsibilities of studio assignments	75% to 85% attendance and participative along with sharing responsibilities of studio assignments.	70% to 75% attendance and participative along with sharing responsibilities of studio assignments only when asked	65% to 70% attendance and less participative alongwith sharing responsibilities of studio assignments only when asked.	155% to 65% attendance and participative in the studio only when asked	50% to 55% attendance and not participative in the studio	Below 50% attendance and mostly absent in the studio
Developing a comprehensive conceptual idea and translation of the same in formal expression.	Highly Outstanding understanding of concepts and formal translation and completing innovative high quality drawings	Moderately Outstanding understanding of concepts and formal translation and innovative high quality drawings	Outstanding understanding of concepts and formal translation and innovative moderately high quality drawings	Excellent understanding of concepts and formal translation and completing the drawings excellent quality of drawings	Very Good understanding of concepts and formal translation and completing the drawings very good quality of drawings	Good understanding of concepts and formal translation and completing with good quality drawings	Mediocre understanding of concepts and formal translation and completing with mediocre quality of drawings	Low but decent understanding of concepts and formal translation completion of drawing sets with low quality	Poor understanding of concepts and formal translation not completion of drawing sets with low quality drawings
Proactiveness while on site study and group assignments to organize and complete the work	Extremely involved in taking lead and completing the group work with extraordinary innovative drawings	Moderately but seriously involved in taking lead and completing the group work with highly innovative drawings	Less moderately but seriously involved in taking lead and completing the group work with very good quality drawings	Seriously involved in taking lead and completing the group work with very good quality drawings	Less Seriously involved in taking lead and completing the group work with very good quality drawings	Just for the sake involved in taking lead and completing the group work with very good quality drawings	Not much active in site work but completing the requirements for own	No active participation in class and partial completion of the work	Disinterested

**COPO Mapping Setup for Sem 3**

CO-PO mapping									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To evaluate idea of region and context in relation with the idea of built and unbuilt through study trip and study drawings	3	3	2	3	2	3	2	0
CO2	To Understand Landform and ecological conditions of different regions and its implications on design	1	1	1	2	0	2	2	0
CO3	To create and map, different land conditions, draw and represent them	0	2	2	0	3	1	0	1

CO4	To Analyze formal articulation and the meaning of language in architecture	3	1	3	3	3	3	3	0
CO5	To apply different modes of representations by imagining spaces at various scales to help them in producing key components of representation like plan, sections and elevations	1	2	1	0	1	0	0	1

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation



<b>COURSE CODE</b>	BARC 402	<b>CREDITS</b>	3 + 1(ABC)
<b>COURSE NAME</b>	ALLIED DESIGN	<b>SESSIONAL MARKS</b>	100 + 10 (ABC)
<b>FACULTY</b>	GEORGE JACOB, HUSSAIN INDOREWALA, GINELLA GEORGE, SWATI SESHADRI, MILAN SHAKUNIYA, RUTIKA PARULKAR	<b>EXAM SCHEME</b>	INTERNAL
<b>CLASS DAY/TIME</b>	WEDNESDAY / 8:00 TO 11:20	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	The Allied Design Course in the Second Year aims at equipping students with analytical skills to examine the relationship of form and material with space, time and function. The Course also reverses the equation in the second part of the year, exposing students to influence of space, time and function on the choice of material and design decisions. This studio is built around the idea of a 'skill lab' with the intent to explore different materials and techniques. It will explore different modes of making, emphasizing on joineries and appropriate tools. It is also part of the studio to establish that making or building is also an equally important aspect of design thinking.
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<b>COURSE METHODOLOGY</b>	This fourth semester is planned to be conducted through a hybrid mode (online and physical) for those who can and cannot attend studios physically. This presents an opportunity for the studio to expose the students to various materials, their properties, joinery details and making. The studio will be organized around four projects, the first three are short projects planned for 3-weeks each and the fourth is planned for 7-weeks. First Project: The students are to produce objects for which shop drawings will be provided by the faculty. The class will be divided under three materials and within which students will be paired to explore the building of the object. This will be graded individually out of 20 Second Project: For the execution of this project students will be paired / grouped based on different materials in order to explore joineries based on the shop drawing provided by the faculty. This will be graded out of 20 for the pair / group. Third Project: The students in discussion with their guides have to develop a toy that is hand-held and brings all the different materials together. The design of the toy, its production and resultant drawings will be developed in the studio in pairs / groups. This will be graded out of 20 for the pair / group. Fourth Project: With the completion of the earlier three projects students are well acclimatized with these materials and are expected to develop a 'seat for a short visit' The project as titled is expected to be a prank and pokes fun in resultant use and expectation of a seat. The group of students will develop the design for this alongwith their designated guides and will be developed as a 1:1 scaled object. This will be graded out of 40 for the pair / group. <i>The final grades will have an additional component of 10 which will be added under Architectural Building Construction after evaluating the furniture for stability and performance.</i>
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	November 24	Introduction to First Project and dividing the class into groups based on materials		
2	December 1	Group based discussions and studio		
4	December 8	Final Submission of First Project and Introduction to Second Project and forming groups to allow material combinations		10
4	December 15	Group based discussions and studio		
5	December 22	Sem-3 Examinations		
6	December 29	Winter Break		
7	January 5	Final Submission of Second Project and Introduction to Third Project with the same groups to explore toys that are hand held		10
8	January 12	Group based discussions and studio		
9	January 19	Group based discussions and studio		
10	January 26	Holiday		
11	February 2	Final Submission of Third Project and Introduction to Fourth Project with the same groups to explore 'A Seat for a Short Visit'		20
12	February 9	Group based discussions and studio		
13	February 16	Group based discussions and studio		
14	February 23	Prefinal		20
15	March 2	Group based discussions and studio		
16	March 9	Group based discussions and studio		
	March 16	Final		30 + 10 (ABC)
	March 23	Compilation of all Projects and Condonation Review		10

<b>LEARNING OUTCOMES</b>	The studio will help students to develop an intuitive design and material understanding and encourage to think design through model making and material properties. 1) The ability to plan and organize production tasks, (2) working with machine tools and hand tools, (3) understanding material properties and behaviour,
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<b>READING LIST/ REFERENCES</b>	
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## CO-PO mapped syllabi of B.Arch Course 2021-2022\_ Allied Design 4

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delay the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)

6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Allied Design 4**  
**Course Code: 402**

**Sem: 4**

**Second Year**

**Course Objectives:**

- To develop knowledge and applicability of building materials based on their respective properties and characteristics.
- To engage with and identify suitable scales and proportions alongwith developing accuracy while building objects.
- The development of ideas based on available constraints stemming from challenging contexts or material limitations.
- To help students develop individual processes for design.
- To develop evaluation methods for testing the feasibility of the designed product thus achieving higher degree of precision.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To understand the influence of material on form and performance.
CO2	To apply the model making process to determine complex formal strategies.
CO3	To evaluate the design for the desired function and precision.
CO4	To create designs that utilize material properties and other constraints set in the studio.

**Rubrics :**

Year of Assessment: 2021 - 2022	USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:		University Subject Code	Sessional Marks:	Exercise : Marks out of	Credits	Date of submission		
SECOND YEAR - SEM 4	Allied 4		402	100	100	3+1(ABC)	23/03/22		
Exercise: Title	Designing Space with objects								
Exercise Note / Task	The project as titled is expected to be a prank and pokes fun in resultant use and expectation of a seat. The group of students will develop the design for this alongwith their designated guides and will be developed as a 1:1 scaled object. This will be graded out of 40 for the pair / group. The final grades will have an additional component of 10 which will be added under Architectural Building Construction after evaluating the furniture for stability and performance.								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Attendance and participation in the studio	95% to 100% attendance and extremely participative alongwith taking complete responsibility of the studio assignments	90% to 95% attendance and visibly very participative alongwith sharing responsibilities of studio assignments	85% to 90% attendance and visibly participative alongwith sharing responsibilities of studio assignments	75% to 85% attendance and participative alongwith sharing responsibilities of studio assignments	70% to 75% attendance and participative alongwith sharing responsibilities of studio assignments only when asked	65% to 70% attendance and less participative alongwith sharing responsibilities of studio assignments only when asked	55% to 65% attendance and participative in the studio only when asked	50% to 55% attendance and not participative in the studio	Below 50% attendance and mostly absent in the studio
Ability to build the prototype object and accuracy in tolerances based on the drawings	95% to 100% tolerance and finish of the object	90% to 94% tolerance and finish of the object	85% to 89% tolerance and finish of the object	80% to 84% tolerance and finish of the object	70% to 79% tolerance and finish of the object	60% to 69% tolerance and finish of the object	55% to 59% tolerance and finish of the object	50% to 54% tolerance and finish of the object	Below 50% tolerance and finish of the object
Ingenuity at composing parts of the design together	Premier accuracy in skill set involved to make the object and understanding the character and properties of the material. Prefection and complete display of ingunity.	Fine accuracy in skill set involved to make the object and understanding the character and properties of the material. Having prospect of achieving perfection.	Outstanding accuracy in making the object and understanding the character and properties of the material but having scope of evolving the overall skill set.	Excellent accuracy and display of skill set involved in making the object. Excellent understanding of the character and properties of the material. Scope of achieveing better result.	Good accuracy within limited skill set involved in making the object and intent displayed to understanding the character and properties of the material.	Good accuracy within limited skill set involved in making the object and loose intent displayed to understanding the character and properties of the material.	Fair accuracy within limited skill set involved in making the object and loose intent displayed to understanding the character and properties of the material.	Need involvement and absolute improvement in skill set to make the object and loose intent displayed to understanding the character and properties of the material.	No involvement and absolute improvement required in skill set involved to make the object and no intend displayed to understanding the character and properties of the material.
Conceptualization of the design	Novel idea, Functional Outcome, Finesse	Outstanding idea, Functional Outcome, Very Good Make	Fair idea, Functional Outcome, Good Make	Acceptable idea, Workable Outcome, Good Make	Acceptable idea, Workable Outcome, Fair Make	Average idea/Reproduced (Copied), Workable	Basic/reproduced (Copied), Workable Outcome, Fair Make	vague/reproduced idea (Copied), Workable Outcome, Fair Make	NO outcome

						Outcome, Fair Make			
<b>Compatibility and experimentative intention of the idea with the outline of the studio</b>	Most flexible design idea with originality matching the outline of the studio	Flexible enough as a design idea with comparative originality matching the outline of the studio	Flexible with constraints as a design idea with comparative originality matching the outline of the studio	Flexible idea but exhibiting a continuation of an existing idea matching the outline of the studio	Good idea but exhibiting a continuation of an existing idea matching the outline of the studio	Average idea but exhibiting a continuation of an existing idea matching the outline of the studio	Fair idea but exhibiting a continuation of an existing idea matching the outline of the studio	Satisfactory idea but exhibiting a continuation of an existing idea barely matching the outline of the studio	No intent and inclination to develop an idea

COPO Mapping Setup for Sem 4

CO-PO mapping for a course of “UG program”										
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	
CO1	To understand the influence of material on form and performance.	1	2	3	0	0	1	0	0	
CO2	To apply the model making process to determine complex formal strategies.	0	3	3	0	1	1	1	1	
CO3	To evaluate the design for the desired function and precision.	0	3	3	2	1	2	2	2	
CO4	To create designs that utilize material properties and other constraints set in the studio.	0	1	3	2	0	0	3	3	

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation

0 – No Correlation

<b>COURSE CODE</b>	BARC403	<b>CREDITS</b>	2 Lectures + 1 Studio + 1 Allied Design
<b>COURSE NAME</b>	Architectural Building Construction and Materials 4	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Charvi, Dharmesh, Kimaya, Mamta, Shuchi, Minal, Vikram, Karan, Aishwarya	<b>EXAM SCHEME</b>	Theory- 50 marks
<b>CLASS DAY/TIME</b>	Thursday 08.00- 11.20/ Friday 1.20-3.00	<b>NON-CLASS TIME</b>	12
<b>PEDAGOGIC INTENT</b>	To impart documentation skills through observation. To equip learners with the ability to apply learnings from observations to design		
<b>COURSE METHODOLOGY</b>	Lectures Documentation and analysis exercises Studio for application of learnings into design		

Lecture

<b>COURSE CODE</b>	BARC403	<b>CREDITS</b>	2
<b>COURSE NAME</b>	Architectural Building Construction and Materials 4	<b>SESSIONAL MARKS</b>	
<b>FACULTY</b>	Vikram, Mamta, Charvi	<b>EXAM SCHEME</b>	
<b>CLASS DAY/TIME</b>	Friday 1.20-3.00	<b>NON-CLASS TIME</b>	12

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	26/11/2021	Comparison between sloping and flat roof		
2	03/12/2021	RCC as a building material		
3	10/12/2021	Reinforcement details in columns and beams		
4	17/12/2021	Roofing and flooring in steel and RCC		
5	24/12/2021	Staircase design and details		
6	07/01/2022	Fabrication of structural members in steel		
7	14/01/2022	Steel joinery methods		
8	21/01/2022	Joinery details in steel		
9	28/01/2022	Waterproofing and fireproofing in steel		

Studio

<b>COURSE CODE</b>	BARC403	<b>CREDITS</b>	1
<b>COURSE NAME</b>	Architectural Building Construction and Materials 4	<b>SESSIONAL MARKS</b>	
<b>FACULTY</b>	Charvi, Dharmesh, Kimaya, Mamta, Shuchi, Minal, Vikram, Karan, Aishwarya	<b>EXAM SCHEME</b>	
<b>CLASS DAY/TIME</b>	Thursday 08.00- 11.20	<b>NON-CLASS TIME</b>	12

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	25/11/2021	Review of Wall Sections		
2	02/12/2021	Review of Connected Wall Sections		
3	09/12/2021	Design Development 1		
4	16/12/2021	Design Development 2		
5	23/12/2021	Design Development 3		
6	06/01/2022	Resolution Studio 1	Plans and Sections	10
7	13/01/2022	Resolution Studio 2	Structural Design	10

8	20/01/2022	Site Visit (RCC Casting)		10
9	03/02/2022	Resolution Studio 3	Site visit learnings application to design	10
10	24/02/2022	Resolution Studio Final Grading	Final drawings	10
11	03/03/2022	Construction Test	Class test	50

LEARNING OUTCOMES

Skills of the documentation process through observations, surveying, measured drawings, sketches and documentation photography oriented towards drawing and representation of the construction components

READING LIST/ REFERENCES

**Barry; Introduction & Advanced Construction; Chudley; Mitchel; Ching;**

**CO-PO mapped syllabi of B.Arch Course 2021-2022 – Architectural Building Construction and Materials 4**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognise and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete)
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Building Construction and Materials 4**  
**Course Code: BARC403**

**Sem 4**

**Second Year**

**Course Objectives:**

- The course enables students to understand the design and construction of steel structures.
- Documentation skills through observation, surveying, measured drawings, sketches and photographs.
- Comparative understanding of Steel/ RCC framed composite structures.
- Understanding the construction methodology of steel structures.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To understand, read and learn regional diversity and its correlation with construction systems and tectonics.
CO2	To develop analytical frameworks to inform design decisions with reference to material and choice of environmental systems.
CO3	To be able to observe, read and document different influences based on socio cultural, functional, and geographical means of the region.
CO4	To develop the ability to create, represent, design drawings integral to material, environmental systems, and tectonics.

Rubrics:

Year of Assessment : 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 100	Exercise 01: Marks out of	Credits	Date of submission	Upgrade 01	Upgrade 02
SECOND YEAR - SEM 4	ABCM4	TLC033	403	100	50	100	Multiple		
Exercise: Title	Integrated Design Studio: Using the learnings from Sem 3 to design a comfort station								
Exercise Note / Task	Portfolio submission by students								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% -40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Depth of Inquiry and ability to generate analytical drawings</b>	Exceptional analytical drawings and clarity in explaining the concept and architectural design intent	Well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Excellent curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
<b>Data Gathering/ monitoring and collating</b>	Showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing well outstanding insights adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing Outstanding insights using tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Generic methods of analysis	Not informed process of adaptation of tools and frameworks

<b>Representation Technique and final submission</b>	Very well formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Well formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Clear formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Very good formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Good formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Fairly formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Barely managed to get clarity of intent and study using poor diagrams and sketches	Less clarity in terms of ideas and processes to be followed	Absolute no clarity of thought and understanding of the subject
<b>Ability to demonstrate the Learnings from the discussions conducted in class</b>	Showcasing 100% ability to translate theoretical knowledge into practice	Showcasing 90% ability to translate theoretical knowledge into practice	Showcasing 80% ability to translate theoretical knowledge into practice	Showcasing 70% ability to translate theoretical knowledge into practice	Showcasing 65% ability to translate theoretical knowledge into practice	Showcasing 60% ability to translate theoretical knowledge into practice	Showcasing 55% ability to translate theoretical knowledge into practice	Showcasing 50% ability to translate theoretical knowledge into practice	Zero understanding and application of theoretical knowledge
<b>Attendance and participation in the discussions</b>	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence

CO-PO mapping for a course of “UG program” Architectural Building Construction and Materials 4									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To understand, read and learn regional diversity and its correlation with construction systems and tectonics.	2	0	0	3	2	3	2	1
CO2	To develop analytical frameworks to inform design decisions with reference to material and choice of environmental systems.	1	1	1	2	0	3	2	2
CO3	To be able to observe, read and document different influences based on socio cultural, functional, and geographical means of the region.	3	2	3	3	3	2	3	2
CO4	To develop the ability to create, represent, design drawings integral to material, environmental systems, and tectonics.	2	3	3	2	1	1	3	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
0 – No Correlation

BARC 404	COURSE NAME	Theory and Design of Structures		SEMESTER	IV		CREDITS	3 (2TOS + 1 Technology Studio)	
	FACULTY	Rajitha, Nooraj		SESSIONAL MARKS	50		SCHEME OF EXAMINATION	Written paper: 50	
	TIME	2:40 - 4:20		TEACHING HOURS	Saturday		TIME REQUIRED OUTSIDE OF CLASS		
UNIVERSITY COURSE DESCRIPTION	Theory of Simple Bending, Deflection in beams, Direct and bending stresses, Basics of RCC and Material Testing								
PEDAGOGIC INTENT	Understanding of basic theories and principles of structural analysis. Study the behaviour of structural elements under various load conditions								
METHODOLOGY	Various mediums will be used to explain the concepts, like videos, presentation, hands-on experiments etc. Sharing experiences with class in accordance with one's learnings.								
SCHEDULE	DAY	DATE	TEACHING CONTENT OF THE DAY			MARKING DISTRIBUTION	ASSIGNMENT/DELIVERABLE		
	Saturday	27-Nov-21	1 Introduction to the course this semester. How columns fail? What is the most governing design factor? Pipes of different heights will be used to explain slenderness ratio.						
	Saturday	04-Dec-21	2 Rulers and cards will be used to emphasise the concept of least radius of gyration. Videos showing various tests and column failures by different means will be shown. Slenderness ratio.						
	Saturday	11-Dec-21	3 Numericals based on previous topic. The class will also be given a project to plot the Euler's graph by making paper tower of various heights. Via paper column testing.						
	Saturday	18-Dec-21	5 Column failures and understanding of Euler's and Rankine's theory and numerical exercises.						
	Saturday	08-Jan-23	Introduction to indeterminant structures						
	Saturday	15-Jan-23	Introduction to indeterminant structures						
	Saturday	22-Jan-23	8 Determination of positive and negative bending moments with different loading patterns. Wooden beam workshop to understand support reactions/conditions and fixity.						
	Saturday	29-Jan-23	10 Solving numerical to reinforce concept of fixed end moments						
	Saturday	05-Feb-23	11 Introduction to Engineers/designers who created highly engineered structures throughout history. Dividing groups						
	Saturday	14-Feb-23	12 Presentations _ Engineers						
	Saturday	21-Feb-23	13 Presentations _ Engineers						
	Saturday	26-Feb-23	14 Presentations _ Engineers						
	Saturday	05-Mar-23	Online Test						
	Saturday	12-Mar-23	Revision						
EVALUATION CRITERIA	basis for judgement of assignments and priority of parameters for evaluation if any								
LEARNING OUTCOMES									
READING LIST	Strength of Materials by S. Ramamrutham, Foundation Engineering by B.C.Punmia, P. C. Varghese								

## CO-PO mapped syllabi of B.Arch Course 2021-2022 – Theory and Design of Structures 4

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort



- zones. ( Self / Other)
- To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
  - To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
  - To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
  - To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Theory and Design of Structure 4**  
**Course Code: BARC 404**

**Sem 4**

Name - 2nd Year

**Course Objectives:**

- Understanding of basic theories and principles of structural analysis
- Understanding of properties of materials relevant to structural analysis
- Understanding of behaviour of structural elements under various conditions

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Develop an understanding of Long column and short column through theories and methods and the way it is used in the structural systems
CO2	Developing the skill to analyze structural members (fixed beams, columns etc.) through theories and calculations and various ways in which load gets transferred in the structural system
CO3	In-depth understanding of soil properties and its mechanics and its impact on the structural design
CO4	Develop a perspective on the importance of technical knowledge and its application with respect to the role of an architect as a professional.

**Rubrics:**

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 100	Exercise 01 & 02: Marks out of	Credits	Date of submission		
SECOND YEAR - SEM 4	Theory and Design of Structures 4	BARC 404	BARC 404	50	50	3 (2 TOS + 1 Technology Studio)			
Exercise: Title	Case study on impact on material on structural and architectural design								
Exercise Note / Task	Assignment + Test								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									

	All data to be collected from reliable sources with references included in the reports. Exceptional in showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected.	All data to be collected from reliable sources with references included in the reports. Showcasing well outstanding insights adopted tools, frameworks to develop methodology to critique and analyse the data collected.	Most of the data to be collected from reliable sources with references included in the reports. Showcasing Outstanding insights using tools, frameworks to develop methodology to critique and analyse the data collected.	Most of the data to be collected from reliable sources with references included in the reports. Showcasing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected.	Most of the data to be collected from reliable sources with references included in the reports. Showcasing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected.	Data collected is from adequate sources with most references included in the reports. Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected.	Data collected is from adequate sources with most references included in the reports. Showcasing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected.		
<b>Data Gathering/ monitoring and collating</b>								Generic methods of analysis	Not informed process of adaptation of tools and frameworks
<b>Depth of Inquiry and ability to generate analytical drawings</b>	Exceptional analytical drawings and clarity in explaining the concept and architectural design intent	Well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Excellent curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
<b>In-depth understanding a theory and its application in the architectural field</b>	Exceptional analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Well curated outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified	Very well curated outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified	Excellent curation using outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation.	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent.	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent.	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry

		architectural expression.	architectural expression.						
<b>Representation Technique and final submission</b>	Very well formatted presentation explaining concepts, process adopted using various tools and techniques	Well formatted presentation explaining concepts, process adopted using various tools and techniques	Clear formatted presentation explaining concepts, process adopted using various tools and techniques	Very good formatted presentation explaining concepts, process adopted using various tools and techniques	Good formatted presentation explaining concepts, process adopted using various tools and techniques	Fairly formatted presentation explaining concepts, process adopted using various tools and techniques	Barely managed to get clarity of intent and study using poor diagrams and sketches	Less clarity in terms of ideas and processes to be followed	Absolute no clarity of thought and understanding of the subject
<b>Ability to demonstrate the Learnings from the discussions conducted in class</b>	Showcasing 100% ability to translate theoretical knowledge into practice	Showcasing 90% ability to translate theoretical knowledge into practice	Showcasing 80% ability to translate theoretical knowledge into practice	Showcasing 70% ability to translate theoretical knowledge into practice	Showcasing 65% ability to translate theoretical knowledge into practice	Showcasing 60% ability to translate theoretical knowledge into practice	Showcasing 55% ability to translate theoretical knowledge into practice	Showcasing 50% ability to translate theoretical knowledge into practice	Zero understanding and application of theoretical knowledge
<b>Attendance and participation in the discussions</b>	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence

COPO Mapping Setup for Sem 4

CO-PO mapping for a course of “Theory and Design of Structures 4”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Develop an understanding of Long column and short column through theories and methods and the way it is used in the structural systems	3	1	1	1	1	3	0	1
CO2	Developing the skill to analyze structural members (fixed beams, columns etc.) through theories and calculations and various ways in which load gets transferred in the structural system	3	3	1	0	0	1	1	1
CO3	In-depth understanding of soil properties and its mechanics and its impact on the structural design	2	2	2	0	1	3	2	1
CO4	Develop a perspective on the importance of technical knowledge and its application with respect to the role of an architect as a professional.	2	1	3	2	2	2	2	2

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 408	<b>CREDITS</b>	3 (2 Lectures + 1Studio)
<b>COURSE NAME</b>	Architectural Building Services 2	<b>SESSIONAL MARKS</b>	Internal sessional marks - 50
<b>FACULTY</b>	Minal Yerramshetty, Sanaeya Vandrewala	<b>EXAM SCHEME</b>	50 marks external exam paper
<b>CLASS DAY/TIME</b>	Tuesday - 1.20-3.00	<b>NON-CLASS TIME</b>	4 hours

**PEDAGOGIC INTENT** The Architectural Building Services course in this semester intends to introduce the ecological understanding of site level infrastructure, with a focus on sustainable approach such as regenerative and passive water flow systems. With a goal towards achieving sustainability in terms of resource and energy management, this course enables the students to deal with traditional as well as novel techniques to make sites resource efficient.

**TEACHING METHODS** Theory lectures with the help of audio-visual medium, case studies and discussion and debates

Lectures

<b>COURSE CODE</b>	BARC 408	<b>CREDITS</b>	2
<b>COURSE NAME</b>	Architectural Building Services 2	<b>SESSIONAL MARKS</b>	
<b>FACULTY</b>	Minal Yerramshetty, Sanaeya Vandrewala	<b>EXAM SCHEME</b>	50 marks external exam paper
<b>CLASS DAY/TIME</b>	Tuesday - 1.20-3.00	<b>NON-CLASS TIME</b>	4 hours

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	23/11/2021	Introduction to the semester. History of Public toilet, Revision of last Semester portion and case study assignment	--	
	30/11/2021	Revision of last Semester portion and case study assignment		
2	7/12/21	Rainwater Harvesting - City and water, History of water preservation methods and techniques	--	
3	14/12/21	Rainwater system - traditional as well as contemporary methods with case studies	--	
4	21/12/21	EXAMS WEEK FOR 2 <sup>ND</sup> YEAR	--	
5	28/12/21	HOLIDAY - WINTER BREAK	--	
	4/1/22	Calculations and architectural details of Rainwater harvesting details		
6	11/1/22	Assignment presentation	--	
7	18/1/22	Assignment presentation	--	
8	25/1/22	Assignment presentation	--	
9	1/2/22	Assignment presentation	--	
10	8/2/22	Storm water and site drainage	--	
11	15/2/22	Site drainage, details, calculations and its architectural representation	--	
12	22/2/22	Public toilet revision as well as discussion from STUDIO view point	--	
13	01/3/22	Architectural Details and drawing for public toilet	--	
14	8/3/22	Site planning strategy for the TECH project-discussion	--	
15	15/3/22	revision	--	
16			--	

Studio

<b>COURSE CODE</b>	BARC 408	<b>CREDITS</b>	1
<b>COURSE NAME</b>	Architectural Building Services 2	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Charvi, Dharmesh, Kimaya, Mamta, Shuchi, Minal, Vikram, Karan, Aishwarya	<b>EXAM SCHEME</b>	
<b>CLASS DAY/TIME</b>	Thursday 08.00- 11.20	<b>NON-CLASS TIME</b>	12

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	25/11/2021	Review of Wall Sections		
2	02/12/2021	Review of Connected Wall Sections		
3	09/12/2021	Design Development 1		
4	16/12/2021	Design Development 2		
5	23/12/2021	Design Development 3		
6	06/01/2022	Resolution Studio 1	Plans and Sections	10
7	13/01/2022	Resolution Studio 2	Structural Design	10
8	20/01/2022	Site Visit (RCC Casting)		10
9	03/02/2022	Resolution Studio 3	Site visit learnings application to design	10
10	24/02/2022	Resolution Studio Final Grading	Final drawings	10
11	03/03/2022	Construction Test	Class test	50

**LEARNING OUTCOMES** Students are enabled to apply acquired knowledge on storm water disposal, water management methods, spatially in a sustainable and eco-friendly manner in their studio exercise as well as their design project.

**READING LIST/ REFERENCES** [Planning Urban Sanitation and Wastewater Management Improvements \(adb.org\)](http://adb.org).

**CO-PO mapped syllabi of B. Arch Course 2021-2022 – Architectural Building Services 2**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorize and conceptualize ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to de-layer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project.
6. To enable the student to observe, experience, analyze space, its physicality, and its associations through the body.
7. To enable the student to extract the abstract from the experiential and center it as the basis of design.
8. To enable the student to break the boundary between abstract thought and material realities.
9. To enable students to discover multiple methods and tools to develop their own process of learning.
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive ways of intervening as architects through critical thinking.
2. To enable students with design skills that can navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that can navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding of cultures outside of their own comfort zones. (Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Building Services 2**

**Course Code: 408**

**Sem 4**

**Second Year**

**Course Objectives:**

The Architectural Building Services course this semester intends to introduce the ecological understanding of site level infrastructure, with a focus on sustainable approach such as regenerative and passive water flow systems.

With a goal towards achieving sustainability in terms of resource and energy management, this course enables the students to deal with traditional as well as novel techniques to make sites resources efficient.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To identify, assess, need, safeguard, restore and promote sustainable use of global ecosystems through traditional and contemporary approaches of rainwater harvesting systems.
CO2	To understand the framework and modality of stormwater management systems in and around a building, using case study-based approaches.
CO3	To explore and realize the micro and macro level sustainable effluent management systems and further incorporate the relevant strategies in their architectural design projects.

Year of Assessment: 2021-2022		USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelor of Architecture							
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks:	Exercise 01 & 02: Marks out of	Credits	Date of submission		
SECOND YEAR - SEM 4	Arch. Building services		BARC 408	50		3	Multiple submissions		
Exercise: Title		Technology Studio Exercise							
Exercise Note/task		Detailed drawings of their home toilet with focus on structural, services and materiality							
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Understanding of systems and their integration with other systems as well as with space</b>	1)Complete understanding of systems 2) its integration with other system 3) its hierarchy in planned space	1)Very good understanding of systems 2) its integration with other and its position in planned space.	Good understanding of systems and its integration and its position in planned space.	Fairly good understanding of systems and their integration and their position in planned space.	1)Understanding of a system is seen along with other systems 2) lacking spatial integration.	1)Lesser understanding of the system is seen along with other systems 2) lacking spatial integration.	1)Poor understanding of the system. 2)No understanding of integration with other systems.	Extremely poor understanding of the system.	Non-Submission
<b>Representation Technique and final submission</b>	Logical and semantic representation	Logical representation	Good representation in all aspect	Good representation in all aspect	Fairly represented in all aspect	The drawings could be understood	Representation needed clarification	Drawings not clear enough	Non-Submission
<b>Attendance, time management and participation in Studio</b>	Attends 95% of total classes	Attends 90% of total classes	Attends 85 % of total classes	Attends 80% of total classes	Attends 75% of total classes	Attends 70% of total classes	Attends 60% of total classes	Attends 55% of total classes	Attends less than 50% of total classes

CO-PO mapping for a course of "UG program"									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To identify, assess, need, safeguard, restore and promote sustainable use of global ecosystems through traditional and contemporary approaches of rainwater harvesting systems.	2	2	0	2	2	2	3	2
CO2	To understand the framework and modality of stormwater management systems in and around a building, using case study-based approaches.	2	0	2	0	1	2	3	2
CO3	To explore and realize the micro and macro level sustainable effluent management systems and further incorporate the relevant strategies in their architectural design projects.	0	0	0	0	1	2	3	2

<b>COURSE CODE</b>	BARC 405	<b>CREDITS</b>	3 = 2HU + 1 given to History
<b>COURSE NAME</b>	HUMANITIES (2021-22)	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Hussain, Shweta	<b>EXAM SCHEME</b>	THEORY PAPER 50 MARKS
<b>CLASS DAY / TIME</b>	Monday 1.30 pm	<b>NON-CLASS TIME</b>	-

<b>COURSE DESCRIPTION</b>	This course aims to provide an introduction to a cultural-urbanist perspective on cities, one that explores the interface between cities and cultures. The term 'culture' will be used in this course not in the specific sense of the arts or artistic activity (music, painting, theatre, film, etc) nor in the all encompassing general usage of 'a whole way of life' - but in the sense of the relations between material and symbolic production. The course will be structured along themes rather than disciplines
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<b>PEDAGOGIC INTENT / LEARNING OBJECTIVES</b>	<p>1) Students will be acquainted with some key readings that outlines a cultural urbanism perspective drawing on materials from disciplines such as urban sociology, social anthropology, urban studies and urban theory</p> <p>2) Students will learn to examine contemporary urban processes and debates through a cultural theory framework.</p> <p>3) Through the various themes, students will engage with texts and visual materials that will touch upon topics such as habits of consumption, design of habitations, normative and deviant norms and values, ideology and intellectual traditions, ideas and interests, among others.</p>
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<b>COURSE METHODOLOGY</b>	The course will be a weekly lecture and discussion seminar, of 2 hours per session. Each theme (module) will be explored in sets of three sessions, and organized in the form of structured discussions, with a key text and other visual materials.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS
1	10 <sup>th</sup> Jan	Introduction	
2	17 <sup>th</sup> Jan	Production Of Space	
3	24 <sup>th</sup> Jan	Politics Of Urban Desire	
4	31 <sup>st</sup> Jan	Space Place And Gender	
5	7 <sup>th</sup> Feb	Hetrotopia Dalits Citizenship And Urban Space	
6	14 <sup>th</sup> Feb	Politics Of Difference	
7	21 <sup>st</sup> Feb	Reinterpreting Local Culture	
8	28 <sup>th</sup> Feb	The Culture Industry Reconsidered	
9	7 <sup>th</sup> Mar	Difference, Boundaries, Community	
10	14 <sup>th</sup> Mar	Ideology And Utopia	
11	21 <sup>st</sup> Mar	Evil Paradises	
12	28 <sup>th</sup> Mar	See You In Disneyland	
13	4 <sup>th</sup> Apr	Concluding Seminar 1	
14	11 <sup>th</sup> Apr	Concluding Seminar 2	

<b>EVALUATION CRITERIA</b>	The main assignment will be in the form of a short 'case study' selected by a group of 4 students, analyzed through the ideas introduced in the course. This assignment will be given 75% of the weight. Class participation will be given 25% of the grade.
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Course 1: History

<b>COURSE CODE</b>		<b>CREDITS</b>	2 = 1HU + 1CP
<b>COURSE NAME</b>	History	<b>SESSIONAL MARKS</b>	50 marks
<b>FACULTY</b>	Rutika Parulkar , Sanaeya Vandrewala , Sarah George	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Wednesday / 1.20-3.00pm	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	Studying and situating the changes spurred on by new materials, new technologies, changing political situations, and changing aesthetic and religious ideals, architectonics and resultant architecture. To explore the effect of these changes, spelled out differently in different times, have always challenged the norm in a way that can be called as modern for that time
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<b>COURSE METHODOLOGY</b>	Various mediums will be used to explain the concepts, like videos, presentation, documentaries and discussions to understand the different aspects. The main lens through which the course will be studied are the tenets of Power and authority along with the paradigm of superlatives.
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WEEK	DATE	TEACHING CONTENT
1	24 <sup>th</sup> Nov	City states & colonies
2	1 <sup>st</sup> Dec	The classical Greece – Situating the context
3	8 Dec	Greek society, religion and culture
4	15 Dec	Intro to assignment and working session
5	22 Dec	Exam week
6	29 Dec	Christmas break
7	5 jan	Greek Temples – Materials as determinants
8	12 jan	Greek Architects and the Space – Architecture at its Zenith
9	19 th jan	Beyond Europe- outpost colonies across geographies
10	26 jan	Holiday
11	2 feb	Founding of Rome and Roman Engineering
12	9 feb	
13	16 <sup>th</sup> feb	Elective week
14	23 feb	Creation of Icon – Colosseum
15	2 march	Restitution & Repatriation
16	9 march	Final presentation/submission
17	16 march	Final presentation/submission

<b>LEARNING OUTCOMES</b>	A deeper understanding in History through questions form, space, value systems, existing knowledge systems. To help students understand the manner in which architectural production is triangulated between exigencies of time and location
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<b>READING LIST/ REFERENCES</b>	D.K.Ching, Vikramaditya Prakash, <i>The Global History of Architecture</i> , Dora P.Crouch , <i>History of Architecture – Stonehenge to skyscrapers</i> ,Bill Risebero , <i>Story of Western Architecture</i> , Arthur Cotterell , <i>The Encyclopedia of ancient Civilizations</i> Henri Sterlin , <i>GREECE – From Mycenae to the Parthenon</i>
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**CO-PO mapped syllabi of B.Arch Course 2021-2022 – HUMANITIES SEM 4**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to de-layer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. (Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Humanities**  
**Course Code: BARC405**  
**Sem 4**

**Course Objectives:**

- 1) Students will be acquainted to a cultural urbanism perspective - drawing on materials from disciplines such as urban sociology, social anthropology, urban studies and urban theory
- 2) Students will learn to examine contemporary urban processes and debates through a cultural theory framework.
- 3) Students will be encouraged to read their own city from the themes introduced in the course

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Students will acquire a conceptual vocabulary of cultural urbanism
CO2	Students will learn to examine contemporary urban processes and debates through a cultural theory framework.
CO3	Students will be encouraged to read their own city from the themes introduced in the course

**Rubrics:**

<b>Year of Assessment: 2021-2022</b>	<b>USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture</b>								
<b>Year &amp; Sem</b>	<b>Subject:</b>	<b>Subject Code</b>	<b>University Subject Code</b>	<b>Sessional Marks:</b>	<b>Exercise 01 : Marks out of</b>	<b>Credits</b>	<b>Date of submission</b>		
<b>SECOND YEAR - SEM 4</b>	Hum	BARC405		50	50	2			
<b>Exercise: Title</b>	Class case study presentations								
<b>Exercise Note / Task</b>	Present a case-study in groups in an audio-visual format								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>(A) Interpretation of Case Study</b>	Excellent understanding of the case, ability to identify the determinants and explain them lucidly, is able to connect the case to contemporary examples	Very good understanding of the case, ability to identify the determinants and explain them well, is able to connect the case to contemporary examples	good understanding of the case, ability to identify the determinants and explain them competently	good understanding of the case, ability to identify the determinants and explain them adequately	A fair understanding of the case, ability to identify the determinants and explain them adequately	A fair understanding of the case, ability to identify the determinants	An minimal understanding of the case, somewhat able to identify determinants	An minimal understanding of the case,	Little or no understanding of the case
<b>(B) Presentation Quality as a whole</b>	Outstanding organization of the presentation, exceptionally clear presentation combined with creative use of visual aids	Exceptionally well structured, exceptionally clear presentation combined with visual aids	Well structured, exceptionally clear presentation combined with good use of visual aids	Very Clear presentation, combined with good use of visual aids	Well organized presentation, combined with competent use of visual aids	Manage to convey the ideas adequately	Some difficulty in expressing ideas, acceptable	Difficulty in explaining	poorly constructed and unable to convey ideas
<b>(C) Participation and conduct in class</b>	90% attendance or more, active participation in class and excellent conduct overall	90% attendance or more, good participation in class and very good conduct overall	80% - 90% attendance, active participation in class and excellent conduct overall	80% - 90% attendance, good participation in class and very good conduct overall	70% -80% attendance, active participation in class and excellent conduct overall	70% -80% attendance, good participation in class and very good conduct overall	50% - 70% attendance	50% - 70% attendance	50% attendance or less

<b>Year of Assessment: 2021-22</b>	<b>USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture</b>									
<b>Year &amp; Sem</b>	<b>Subject:</b>	<b>University Subject Code</b>	<b>Sessional Marks:</b>	<b>Exercise: Marks out of</b>	<b>Credits</b>	<b>Date of submission</b>				
<b>SECOND YEAR - SEM 4</b>	<b>History</b>		<b>50</b>	<b>50</b>	<b>1HU + 1CP</b>					
<b>Exercise: Title</b>	Essay									
<b>Exercise Note / Task</b>	The student will be evaluated on the idea that they will put forth in the paper. An interim discussion will be to assist the student to articulate the idea.									
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>	
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>	
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0	
<b>Area of Evaluation</b>										
<b>Discussion through references</b>	Innovative. Experimental and Bold Clarity. Expressive of relevance.	Very impressive. Highly demonstrative.	Impressive attempt to go beyond requirement. Excellent presentation of ideas.	Demonstrative. Very good attempt to present ideas.	Has gone beyond the requirement. More than adequate attempt to present ideas.	Attempts to express and go beyond the requirement. Just adequate	No further enquiry. Barely encourages a discussion. Needs clarity	No further enquiry. Does not encourage a discussion	Does not complete the assignment	
<b>Analysis and Ideas</b>	Innovative. Experimental and Bold Clarity.	Very impressive. Highly demonstrative.	Excellent presentation of ideas.	Very good attempt to present ideas.	More than adequate attempt to present ideas.	Just adequate attempt to present ideas.	No further enquiry.	No further enquiry.	Does not complete the assignment	
<b>Participation in Studio</b>	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes	

CO-PO mapping									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Students will acquire a conceptual vocabulary of cultural urbanism	2	2	1	2	2	3	3	2
CO2	Students will learn to examine contemporary urban processes and debates through a cultural theory framework.	3	1	1	3	2	3	2	2
CO3	Students will be encouraged to read their own city from the themes introduced in the course	2	0	0	2	2	3	3	2
CO4	Understanding architecture as an outcome of socio cultural processes	2	2	1	2	0	3	3	3
CO5	Analysing historical ideas and their implications on architectural form	1	2	0	0	1	3	2	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation



<b>COURSE CODE</b>	BARC403,404,407,408	<b>CREDITS</b>	4+1ABC+1TOS+1ABS
<b>COURSE NAME</b>	Tech Studio (Architectural Representation and Detailing IX, Construction, TO, Services)	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Chaarvi, Dharmesh, Kimaya, Mamta, Minal, Shuch,i Vikram, Karan, Aishwarya	<b>EXAM SCHEME</b>	Internal 50 Marks
<b>CLASS DAY/TIME</b>	Thursday 08:00-03:00	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	To impart documentation skills through observation.  To equip learner with the ability to apply learnings from observations into design
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<b>COURSE METHODOLOGY</b>	Lectures Documentation and analysis exercises Studio for application of learnings into design
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	25/11/21	Review of Wall Sections		
2	02/12/21	Review of Connected Wall Sections		
3	09/12/21	Design Development 1		
4	16/12/21	<i>Design Development 2</i>		
5	23/12//21	Design Development 3		
6	06/01/22	Resolution Studio 11	Plans and Sections	10
7	13/01/22	Resolution Studio 2	Structural Design	10
8	20/01/22	Site Visit (RCC Casting)		10
9	03/02/22	Resolution Studio 3	Site visit learnings application to design	10
10	124/02/22	Resolution Studio Final Grading	Final drawings	10
11	03/03/22	Construction Test	Class test	50

<b>LEARNING OUTCOMES</b>	skills of documentation process through observations, surveying, measured drawings, sketches and documentation photography oriented towards drawing and representation of the construction components
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<b>READING LIST/ REFERENCES</b>	-Barry; Introduction & Advanced Construction; Chudley; Mitchel; Ching;
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – Architectural Representation and Detailing

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their

own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Representation and Detailing**  
**Course Code: BARC 407**

**Sem 4**

**Second Year**

**Course Objectives:**

- To enable the students with representation skills of composition and software.
- To create presentation drawings for the resolved design schemes.
- To learn a software that will aid in creating a working drawing.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Ability to observe, comprehend the tectonic forms within the environmental and cultural context; learning to collaborate as working groups.
CO2	Creating a collective exhibit (online), representing learnings of observed
CO3	Intuitive understanding of structures through physical
CO4	Comprehension that architectural design is a continuous process and includes its resolved workable solutions.

**Rubrics:**

Year of Assessment: 2018-2019	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	University Subject Code	Sessional Marks:	Exercise: Marks out of	Credits	Date of submission			
<b>SECOND YEAR - SEM 4</b>	<b>Arch Representation &amp; Detailing</b>	<b>BARC 407</b>	<b>100</b>	<b>100</b>	<b>4 + 1 Building Services</b>				
<b>Exercise: Title</b>	Creation of Representation drawings								
<b>Exercise Note / Task</b>	To make presentation drawings for the resolved AD project of the previous semester.								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -4</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3
<b>Area of Evaluation</b>									
<b>Representation through drawings</b>	Innovative. Experimental and Bold Clarity. Expressive of relevance.	Very impressive. Highly demonstrative.	Impressive attempt to go beyond requirement. Excellent presentation of ideas.	Demonstrative. Very good attempt to present ideas.	Has gone beyond the requirement. More than adequate attempt to present ideas.	Attempts to express and go beyond the requirement. Just adequate	No further enquiry. Barely encourages a discussion. Needs clarity	No further enquiry. Does not encourage a discussion	Does not complete the assignment
<b>Ideas for synthesis drawings</b>	Innovative. Experimental and Bold Clarity.	Very impressive. Highly demonstrative.	Excellent presentation of ideas.	Very good attempt to present ideas.	More than adequate attempt to present ideas.	Just adequate attempt to present ideas.	No further enquiry.	No further enquiry.	Does not complete the assignment
<b>Participation in Studio</b>	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes

CO-PO mapping for a course of "UG program"									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Ability to observe, comprehend the tectonic forms within the environmental and cultural context; learning to collaborate as working groups.	3	3	2	3	3	3	3	3
CO2	Creating a collective exhibit, representing learnings of observed	3	2	2	3	3	3	3	3
CO3	Intuitive understanding of structures through physical	3	3	2	3	3	3	3	3
CO4	Comprehension that architectural design is a continuous process and includes its resolved workable solutions.	2	3	2	3	3	3	3	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high)  
 Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	409	<b>CREDITS</b>	2
<b>COURSE NAME</b>	Architectural Theory 2	<b>SESSIONAL MARKS</b>	Internal - 50
<b>FACULTY</b>	Ginella George Rohan Shivkumar, Ankush C.	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Tuesday / 1.20-3.00 pm	<b>NON-CLASS TIME</b>	One hour per week

<b>PEDAGOGIC INTENT</b>	The Theory of Design Course provides a space to enable the students with critical thinking skills across the five years of architecture school. It provides a space for the student to consider the relationship between the 'self' and the frameworks through which it is constructed, and the choices made with respect to design. These are naturally not mutually exclusive and the attempt is to constantly create a dialectical relationship between the concepts that shaped the object and the nature and presence of the object itself. The attempt would be to create an unstable field within which questions and concerns can oscillate constantly critiquing each other.
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<b>COURSE METHODOLOGY</b>	The Architectural Theory course in the second year primarily focuses in the ideas of the modern movement. The course in the third semester will trace ideas that have shaped architectural thinking over the past 150 years around the world. This will extend into the fourth semester. While architecture will be the primary discipline that will be looked at in this course, the objects will be placed in conceptual, cultural and historical context through other references that may come from literature, visual art or film. Relevant readings will also be interspersed through the course.
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LECT	DATE	TEACHING CONTENT
1	23.11.2021	Frank Lloyd Wright The Myth of the American Landscape
2	30.11.2021	The Architecture of Capital. Choices. Circumstances. The Chicago Skyscraper
3	07.12.2021	Italian Futurism
4	14.12.2021	The Dutch Avant-Garde
5	21.12.2021	German Expressionism
6	04.01.2022	New Objectivity, De Stijl, Bauhaus
7	11.01.2022	Soviet Avant Garde
8	18.01.2022	Modernist Utopias, CIAM
9	25.01.2022	Building Nationalist Mythologies, Hitler, Stalin, Mussolin
10	01.02.2022	Le Corbusier
11	08.02.2022	Mies Van der Rohe
12	15.02.2022	The International Style
13	22.02.2022	Bombay Modern
14	01.03.2022	Brazil Modern
15	08.03.2022	Discussion
16	15.03.2022	Assignment Submission

<b>LEARNING OUTCOMES</b>	1. To critically analyse and take a position with respect to acts of design
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	2. To engage with the ideas and concepts that have shaped architectural thinking.
<b>READING LIST/ REFERENCES</b>	<ol style="list-style-type: none"> <li>1. Le Corbusier. Toward an Architecture. Translated by John Goodman. Los Angeles: Getty Research Institute (2007)</li> <li>2. Prakash, Vikramaditya. Chandigarh's Le Corbusier: The Struggle for Modernity in Postcolonial India, University of Washington Press (2002)</li> <li>3. Cumming, Elizabeth. The Arts and Crafts Movement (World of Art), Thames &amp; Hudson (1991)</li> <li>4. Rao, Nikhil. House, but No Garden: Apartment Living in Bombay's Suburbs, 1898-1964, University of Minnesota Press (2013)</li> <li>5. Frampton, Kenneth. Modern Architecture: A Critical History, Thames &amp; Hudson Ltd; 2nd Revised edition (1985)</li> </ol>

**CO-PO mapped syllabi of B.Arch Course 2021-2022 – Architectural Theory 2**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Theory 2**

**Course Code: BARC 409**

**Sem 4**

**Second Year**

**Course Objectives:**

- To enable the students with critical thinking skills.
- To consider the relationship between the ‘self’ and the frameworks through which it is constructed, and the choices made with respect to design.
- To create a dialectical relationship between the concepts that shaped the object and the nature and presence of the object itself.
- To create an unstable field within which questions and concerns can oscillate constantly critiquing each other.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Understanding the ideas and concepts that have shaped architectural thinking
CO2	Analysing and taking a position with respect to acts of design
CO3	Applying the learning by placing the built object in conceptual, cultural and historical context

**Rubrics:**

<b>Year of Assessment: 2021-2022</b>	<b>USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture</b>									
<b>Year &amp; Sem</b>	<b>Subject:</b>	<b>University Subject Code</b>	<b>Sessional Marks: max 100</b>	<b>Exercise: Marks out of</b>	<b>Credits</b>	<b>Date of submission</b>				
<b>SECOND YEAR - SEM 4</b>	<b>Arch Theory 2</b>	<b>BARC 409</b>	<b>50</b>	<b>50</b>	<b>2</b>					
<b>Exercise: Title</b>	Constellation of Ideas									
<b>Exercise Note / Task</b>	Students will be assigned to every lecture to respond to the lecture in the following class with two images each. The student through these two images will speak how they have referenced an idea discussed in the class. A wall of images will be built through the semester.									
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>	
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% - 55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>	
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0	
<b>Area of Evaluation</b>										
<b>Discussion of structure</b>	Innovative. Experimental and Bold Clarity. Expressive of relevance.	Very impressive . Highly demonstrative.	Impressive attempt to go beyond requirement . Excellent presentation of ideas.	Demonstrative. Very good attempt to present ideas.	Has gone beyond the requirement . More than adequate attempt to present ideas.	Attempts to express and go beyond the requirement . Just adequate	No further enquiry. Barely encourages a discussion. Needs clarity	No further enquiry. Does not encourage a discussion	Does not complete the assignment	
<b>Analysis and Ideas</b>	Innovative. Experimental and Bold Clarity.	Very impressive . Highly demonstrative.	Excellent presentation of ideas.	Very good attempt to present ideas.	More than adequate attempt to present ideas.	Just adequate attempt to present ideas.	No further enquiry.	No further enquiry.	Does not complete the assignment	
<b>Participation in Studio</b>	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes	

COPO Mapping Setup for Sem 4

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Understanding the ideas and concepts that have shaped architectural thinking	1	3	3	0	0	3	3	0
CO2	Analysing and taking a position with respect to acts of design	1	3	2	0	0	3	3	2
CO3	Applying the learning by placing the built object in conceptual, cultural and historical context	0	0	1	0	1	3	3	0

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 420	<b>CREDITS</b>	2(Tectonics) + 1(History)
<b>COURSE NAME</b>	College Projects 4	<b>SESSIONAL MARKS</b>	Internal - 100
<b>FACULTY</b>	Rutika Parulkar , Sanaeya Vandrewala , Sarah George Ginella George	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Monday / 9.40-11.20am, Wednesday / 1.20-3.00pm	<b>NON-CLASS TIME</b>	

**Course 1: History**

<b>COURSE CODE</b>	BARC 420	<b>CREDITS</b>	2 = 1HU + 1CP
<b>COURSE NAME</b>	College Projects 4 (History)	<b>SESSIONAL MARKS</b>	50 marks
<b>FACULTY</b>	Rutika Parulkar , Sanaeya Vandrewala , Sarah George	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Wednesday / 1.20-3.00pm	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	Studying and situating the changes spurred on by new materials, new technologies, changing political situations, and changing aesthetic and religious ideals, architectonics and resultant architecture. To explore the effect of these changes, spelled out differently in different times, have always challenged the norm in a way that can be called as modern for that time
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<b>COURSE METHODOLOGY</b>	Various mediums will be used to explain the concepts, like videos, presentation, documentaries and discussions to understand the different aspects. The main lens through which the course will be studied are the tenets of Power and authority along with the paradigm of superlatives.
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WEEK	DATE	TEACHING CONTENT
1	24 <sup>th</sup> Nov	City states & colonies
2	1 <sup>st</sup> Dec	The classical Greece – Situating the context
3	8 Dec	Greek society, religion and culture
4	15 Dec	Intro to assignment and working session
5	22 Dec	Exam week
6	29 Dec	Christmas break
7	5 Jan	Greek Temples – Materials as determinants
8	12 Jan	Greek Architects and the Space – Architecture at its Zenith
9	19 <sup>th</sup> Jan	Beyond Europe- outpost colonies across geographies
10	26 Jan	Holiday
11	2 Feb	Founding of Rome and Roman Engineering
12	9 Feb	
13	16 <sup>th</sup> Feb	Elective week
14	23 Feb	Creation of Icon – Colosseum
15	2 March	Restitution & Repatriation
16	9 March	Final presentation/submission
17	16 March	Final presentation/submission

<b>LEARNING OUTCOMES</b>	A deeper understanding in History through questions form, space, value systems, existing knowledge systems. To help students understand the manner in which architectural production is triangulated between exigencies of time and location
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<b>READING LIST/ REFERENCES</b>	D.K.Ching, Vikramaditya Prakash, <i>The Global History of Architecture</i> , Dora P.Crouch , <i>History of Architecture – Stonehenge to skyscrapers</i> ,Bill Risebero , <i>Story of Western Architecture</i> , Arthur Cotterell , <i>The Encyclopedia of ancient Civilizations</i> Henri Sterlin , <i>GREECE – From Mycenae to the Parthenon</i>
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**Course 2: Tectonic Studies**

<b>COURSE CODE</b>	BARC 320	<b>CREDITS</b>	2 CP
<b>COURSE NAME</b>	College Projects 4 (Tectonics)	<b>SESSIONAL MARKS</b>	Internal - 50
<b>FACULTY</b>	Rutika Parulkar, Ginella George	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Wednesday / 1.20-3.00pm	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	The main Tectonic factors in architecture through object, details, joint, material, construction, structure, and interaction of all of the above. Priority given to space by reconsideration of constructional and structural modes. To develop an understanding towards the expressive potential of structure.
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<b>COURSE METHODOLOGY</b>	The students will be introduced to different elements of making and the next lecture will be presentations by students which will be in format of a Pecha Kucha series. The students will present case studies in a specific given time and template followed by discussion in class.
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LECT	DATE	TEACHING CONTENT
1	22-11-2021	Technique, Technology, Tectonics
2	29-11-2021	Building, Dwelling, Being
3	06-12-2021	Elements and the purpose of making
4	13-12-2021	Element 1: Light
5	20-12-2021	Exam week
6	27-12-2021	Christmas Break
7	03-01-2022	Presentation by students (Pecha Kucha)
8	10-01-2022	Element 2: Scale
9	17-01-2022	Presentation by students (Pecha Kucha)
10	24-01-2022	Element 3: Material and Detail -
11	31-01-2022	Presentation by students (Pecha Kucha)
12	07-02-2022	Element 4: Form and Structure
13	14-02-2022	Presentation by students (Pecha Kucha)
14	21-02-2022	Elective Week
15	28-02-2022	Element 5 : Construct and Context
16	07-03-2022	Presentation by students (Pecha Kucha)
17	14-03-2022	Assignment Submission

<b>LEARNING OUTCOMES</b>	The students will learn how tectonics plays an important role in shaping our built environment and has an impact on the way spaces are made and experienced.
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The students will also through these lectures explore how different factors of Tectonics has led to an impact on spatial organization and experience in architecture creating 'Poetics of Construction'

## CO-PO mapped syllabi of B.Arch Course 2021-2022\_College Projects 4

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to de-layer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity.



6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: College Projects 4**                      **Sem: 4**                      **Second Year**  
**University Course Code: BARC 420**

**Course 1: College Projects (History)**                      **Sem: 4**                      **Second Year**

**Course Objectives:**

- To create frameworks to enable the student to deal with the shifting scales in the historiography of the historical object
- To understand the constellation of ideas discussed in the earlier semesters to trace and write the history of a built object.
- To understand and analyze the built object through various thoughts and responses.

**Course 2: College Projects (Tectonic)**                      **Sem: 4**                      **Second Year**

**Course Objectives:**

- To understand architectural form through its tectonic and physical aspects.
- To analyse an architectural object.

**Course Outcomes (CO): (Combined Course outcomes for Tectonic studies and History)**

Course Outcome (Co)	Description
CO1	Understanding architecture as an outcome of socio cultural processes
CO2	Analysing historical ideas and their implications on architectural form
CO3	Adopting the modes of production as a chronological system to discuss the ideas that lead to a production of architecture
CO4	Understanding the making of an architectural object through details, material and structure
CO5	Analysing the expression of an architectural object

**Rubrics 1 (History):**

Year of Assessment: 2021- 2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	University Subject Code	Sessional Marks: max 100		Exercise 01: Marks out of	Credits	Date of submission		
SECOND YEAR - SEM 4	College Projects 4 (History)	BARC 420	50		50	1CP + 1HU			
Exercise: Title	Essay								
Exercise Note / Task	The student will be evaluated on the idea that they will put forth in the paper. An interim discussion will be to assist the student to articulate the idea.								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
Discussion through references	Innovative. Experimental and Bold Clarity. Expressive of relevance.	Very impressive . Highly demonstrative.	Impressive attempt to go beyond requirement. Excellent presentation of ideas.	Demonstrative. Very good attempt to present ideas.	Has gone beyond the requirement. More than adequate attempt to present ideas.	Attempts to express and go beyond the requirement. Just adequate	No further enquiry. Barely encourages a discussion. Needs clarity	No further enquiry. Does not encourage a discussion	Does not complete the assignment
Analysis and Ideas	Innovative. Experimental and Bold Clarity.	Very impressive . Highly demonstrative.	Excellent presentation of ideas.	Very good attempt to present ideas.	More than adequate attempt to present ideas.	Just adequate attempt to present ideas.	No further enquiry.	No further enquiry.	Does not complete the assignment
Participation in Studio	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes

Rubrics 2 (Tectonics):

Year of Assessment: 2021- 2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture									
Year & Sem	Subject:	University Subject Code	Sessional Marks: max 100		Exercise 01: Marks out of	Credits	Date of submission			
SECOND YEAR - SEM 4	College Projects 3 ( Tectonics)	BARC 420	50		50	2CP				
Exercise: Title	Essay									
Exercise Note / Task	The student will be evaluated on the idea that they will put forth in the paper. An interim discussion will be to assist the student to articulate the idea.									
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail	
Grade	O++	O+	O	A	B	C	D	E	F	
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% - 40%	
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0	
Area of Evaluation										
<b>Writing</b>	1) Extremely articulate in framing the area for inquiry. 2) Very clear structure for presentation. 3) Well researched	1) Very articulate in framing the area for inquiry. 2) Clear structure for presentation. 3) Well researched	1)Clear and Articulate in framing the area for inquiry. 2) Well researched structure for presentation .	1) There is clarity in the area of inquiry 2) Research and structure for presentation is fairly good.	1) The area of inquiry is fairly good 2) Research and structure for presentation can be better.	1) The area of inquiry is good 2) Research and structure for presentation is fair.	1) There is clarity in the area of inquiry 2) Research and structure for presentation is found lacking	1)There is potential for an area of inquiry but needs more clarity. 2) No research and structure for presentation	Non submission	
<b>Participation in Studio</b>	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes	

COPO Mapping Setup for Sem 4

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Understanding architecture as an outcome of socio cultural processes	1	1	3	2	2	3	3	3
CO2	Analysing historical ideas and their implications on architectural form	1	2	0	1	0	3	3	1
CO3	Adopting the modes of production as a chronological system to discuss the ideas that lead to a production of architecture	0	2	0	0	0	1	1	0
CO4	Understanding the making of an architectural object through details, material and structure	3	3	3	1	0	3	3	2
CO5	Analysing the expression of an architectural object	3	3	3	2	1	3	3	3

1 – Slight (Low) Correlation    2- Moderate (Medium) Correlation    3- Substantial (high) Correlation    0 – No Correlation

# Program Specific Objectives

# Third Year

1. At third year, owing to the learning trajectories from previous years, students are enabled to position themselves concerning the role of architecture in society through understanding of cultural, socio-economic and environmental networks at the neighborhood levels.
2. Courses are designed to integrate the design and technology holistically through design processes, analytical methods and technological resolution through a fine set of resolved and detailed drawings.
3. It enables a student to develop his/her own personalized toolkit and technique for design thinking for architecture.
4. The courses in the third year help develop questions around the self and the relation with society. It is made evident here the shifting roles that the architect happens to play in order to fulfill the desired outcome.

# Third Year

## Pedagogic Intent

Primary Dialectical Questions : Self - Other / Individual - Collective / Technical - Social

In the Third Year, the focus is on exploring the Identity of the Self. Identity here is not imagined as a fixed and stable entity, but rather as a mode through which one participates in the world. The identity of the architect, the role she plays in the shaping of value systems and built form here are central questions. As the Third Year is also seen as the end of Stage 1 of a student's architectural education by the Council of Architecture, this is also the space where all the different aspects of the act of architecture from conceptual explorations, contextual responses, programmatic strategies, diagramming and detailing have to be demonstrated in a holistic manner. Having given an opportunity to evolve their own trajectories of learning in the second year, the nature of the questions asked by the course focus on challenging the students to arrive upon their own position concerning the role of architecture in society. The Third year broadens the scope to include questions of socioeconomic structures, power and value systems.

## Design Studios

Courses: Architectural Design, Allied Design,

The Third Year Design Studio is the space where the student is asked to demonstrate her position with respect to the role that architecture can play in society. As such it uses the idea of the Institution to provoke students to meditate on the nature of identity, value systems of society, institutional systems and structures and their architectural manifestations. The Third Year studio therefore also wants the students to seriously think about their own identities as citizens and as architects and the value systems that they as architects would like to engage with. The projects are programmatic investigations as much as they are architectonic explorations. The students explore the idea of the Diagram as the distillation of the architectural idea. The first projects investigate

institutions in and around the city of Mumbai, while the second semester projects are based on a study trip. In both cases the role of the institution within its context is investigated through the value systems it represents, the architecture itself. Students are encouraged to critically examine both and are asked to arrive upon a position from where they can relook at the programming and architecture of the institution. Over the past few years institutional investigations have explored Institutions of the Democratic State, and Institutions of Faith, or community-based institutions around the country.

The Allied Design Studio introduces students to the fields of ecology and landscape architecture. The studio is curated with the intent to inculcate sensitivity in the students to discern the interconnected ecological systems and to be able to read the various landscape entities (both biotic and abiotic), their interrelationships and influences in shaping the place. The studio also looks at exploring this understanding to allow for the students to plan and design experiential landscape spaces (both independent and in conjunction with architecture). In the odd semester, emphasis is given to architectural and spatial understanding of landscape planning and design focusing on smaller scales that are experienced immediately outside the architectural footprint. In the second semester the architectural design studio sites and the students' architectural design interventions are integrated into the allied design studio space to extend to landscape programmatic investigations and design expressions. The Allied Design studio exercises deal with hands-on interventions to understand and work with topographic tectonics, environmental indicators and to equip the student to be able to respond to them through a series of landscape-oriented operations.

## The Technology and Representation Studios

*Context and Systemic Questions*

Courses: Technology Studio, Technology Lecture 1, Technology Lecture 2, Tectonic Studies, Theory of Structures

The Third Year Technology Studio focuses on the integration of the systems learnt in the previous semesters towards design. A student is exposed to different structural systems, construction methodologies and the performances of archetypes (tectonic forms, systems, material usages, economics and ecological/ cultural values). This includes understanding the relationship of organisational diagramming to structural systems and details. An important mode of learning in this semester involves case studies of buildings for choices of structure, organisational systems and material systems towards building expression. Live visits to building sites are also integral to the learning. In the Sixth semester this is done through a studio that resolves design ideas towards execution drawings by the making of detailed working drawings, resolving questions of climate control, building services, quantification, etc. The studio is also interested in introducing students to new computer aided design and representation techniques like BIM.

## The Study Trip

The Third Year study trip is interested in understanding the relationship of Institutional systems and their architecture and the way they emerge from and engage with community structures, value systems, histories and the everyday life of people. Like the Second Year design studio, there is a conscious attempt at exploring contexts that have often lain outside the discourse of mainstream architectural thought. The study trip uses a variety of different modes of reading the contexts including observation, interviews and institutional analysis. These are compiled together in an exhibition that not only adds to the repository of architectural knowledge but also becomes a space for the exploration of new and experimental modes of architectural representation.

## Architectural Theory

The course intends to expose students to the concerns / concepts / methods and tools of cultural practices and allow them to analyse them critically with respect to their contexts. The focus of the year is on late-twentieth century cultural practices and attempts to bridge disciplines through common concerns. The year is divided into two semesters. The 5th semester traces the trajectory of architecture across the second half of the twentieth century to contemporary times. The next semester begins with keywords around themes of 'Reconfiguring Modernity'.

Discussions are encouraged through selected readings and projects. The attempt is to allow students to explore the relationship between thought and practice in cultural works, but through the particularity of the here and now.

## History Course

The fifth semester looks at applying the constellation of ideas, discussed in the earlier four semesters, to trace and write the history of a built object in the city of Mumbai/their place of residence. It is hoped that through the exercise, the student is able to deal with shifting scales in the historiography of the historical object.

Tenet Of Interculture

## Humanities Courses

The Third Year course will introduce the concept of social groups and interests (organizations, associations, etc) to understand social action. The intention is to shift inquiry from built space to the process of its production, and to grasp the contested nature of spatial production. The city of Mumbai will be the main object of investigation.

# Semester 5

## Scheme of Teaching and Examinations

### Scheme of Teaching and Examinations Bachelor of Architecture (B. Arch.) Semester V

Semester V Exam conducted by individual colleges		Teaching Scheme		Credits		
Sub. No.	SUBJECTS	Lecture	Studio	Theory	Studio	Total
BARC 501	Architectural Design Studio 5		8		8	8
BARC 502	Allied Design Studio 5		3		3	3
BARC 503	Architectural Building Construction 5	3	3 classes of technology studio	3	1	4
BARC 504	Theory & Design of Structures 5	2		2	1	3
BARC 508	Architectural Building Services 3	2		2	1	3
BARC 505	Humanities 5	3		3		3
BARC 507	Architectural Representation & Detailing 5	2	2	2	2	4
BARC 509	Architectural Theory 3	2		2		2
BARP 520	College projects 5		3		3	3
BARE 521	Elective 5		3		3	3
	Total	14	22	14	22	36

Semester V Exam Exam conducted by individual colleges		Examination Scheme			
Sub. No.	SUBJECTS	Theor y (paper )	Internal	External viva	Total
BARC 501	Architectural Design Studio 5		100	100	200
BARC 502	Allied Design Studio 5		100		100
BARC 503	Architectural Building Construction 5	50	50		100
BARC 504	Theory & Design of Structures 5	50	50		100
BARC 508	Architectural Building Services 3	50	50		100
BARC 505	Humanities 5	50	50		100
BARC 507	Architectural Representation & Detailing 5		100		100
BARC 509	Architectural Theory 3		50		50
BARP 520	College projects 5		100		100
BARE 521	Elective 5		100		100
	Total	200	750	100	1050

# Semester 5

# Semester 5

## Time-Table

	TECTONIC STUDIES		ARCHITECTURAL DESIGN		TECHNOLOGY STUDIO: ARD/ABC/ABS/TOS		ALLIED DESIGN		ARCHITECTURAL DESIGN		THEORY AND DESIGN OF STRUCTURES	
9-9-50	BARP 520	2 (1 CP+1 EXTRA)	BARC 501	4 OF 8	BARC 503, BARC 504, BARC 508, BARC 507	3 (1 ABC, 1 TOS, 1 ABS+ 4 ARD)	BARC 502	3 + 1 EXTRA	BARC 501	4 OF 8	BARC 504	2
9.50-10.40	GEORGE	SWATI	ROHAN	JUDE	MINNAL	AISNLEY	JUDE	SANDEEP	ROHAN	JUDE	BHARGAV	NEERAJ
10.40-11.30	<b>TECHNOLOGY LECTURE (ABS)</b>		GEORGE	APURVA P	JIMMY	NNEERAJ	RUTIKA	SWATI	GEORGE	APURVA P		
	BARC 508	2	SHIHLPA G	VISHAL	DHARMESH	KIMAYA	SANJUNKTA		SHIHLPA G	VISHAL		
11.30-12.20	MINAL	SWATI	GAURAV		SHANTANU		SHRUTI		GAURAV			
12.20-1.20	[Blank]											
1.20-2.10	<b>ARCHITECTURE THEORY</b>		<b>TECHNOLOGY LECTURE (ABC)</b>				<b>HUMANITIES</b>		<b>HISTORY - HUMANITIES</b>			
	BARC 509	2	BARC 503	3			BARC 505	3	BARP 520	2 CP		
2.10-3.00	ROHAN	SHIRISH	JIMMY	NEERAJ			HUSSAIN	SHHWETA	GINELLA	SARA		
3.00-3.50	[Blank]											

<b>COURSE CODE</b>	<b>BARC 501</b>	<b>CREDITS</b>	<b>8</b>
<b>COURSE NAME</b>	<b>ARCHITECTURAL DESIGN</b>	<b>SESSIONAL MARKS</b>	<b>100</b>
<b>FACULTY</b>	Rohan Jude George Apurva P Quaid Shilpa G Vishal	<b>EXAM SCHEME</b>	<b>100</b>
<b>CLASS DAY/TIME</b>	<b>Tuesday and Friday (8.00-11.20)</b>	<b>NON-CLASS TIME</b>	<b>7 hours</b>

<b>PEDAGOGIC INTENT</b>	<p><b>An Architecture for Care</b></p> <p><b>Institutions of Citizenship</b></p> <p>In the third year at the KRVA we are interested in exploring the architecture of institutions. Institutions as we know are integrally linked to the way Identity is constructed. As identities shift and morph so do the institutions that shape them. Given in this formulation is the presumption that identities are not fixed- they are malleable and mutable. We inhabit multiple identities at the same time. We are citizens, Muslims, brothers, lovers, teachers,- we are all of these simultaneously and we navigate between them constantly, deploying one, sometimes denying the other.</p> <p>This semester we will be examine the architecture of one such identity, and the institutional system through which we perform that identity- that of being a 'Citizen'. This identity is constructed by the nation-state through its legislation and documents including the Constitution. It guarantees to the citizen the right to Justice, Freedom, Equality and Fraternity. These are the value systems upon which the nation state is built.</p> <p>These ideas are not mere abstractions but provide us with guiding principles that determine the value of our actions and the institutions that we build. As much as we shape these institutions, they also shape us. Our bodies are implicated in performances that mark us in the discourse of citizenship. These discourses do not only come from 'top-down' but are internalised within the citizen. The citizens body becomes a metonym for the body of the nation. Its health and well-being is mirrored in the health of the nation.</p> <p><b>Inventing the Citizen</b></p> <p>In the early years of Indian modernity, we had to invent this body of the citizen. This was done by projecting the image of the ideal citizen, creating imaginations of a national community, and by constructing elaborate rituals and monuments through which the modern, democratic, nation could be made- and performed. We continue to perform our citizenship when we vote, raise the flag, sing the national anthem. These rituals are made to conjoin us in a common cause. In the early years this national imagination has to address the presence of other identities- the complex and varied histories, the many geographies and identities that had been cobbled together under the national imagination. The solution was to construct an abstract idea of the citizen based on humanistic and rationalist ideas that were felt to override other embedded identities. 'Unity in Diversity' was the byline proclaimed across national integration propaganda. While the embrace of rationalist modernism and its institutions attempted to counter myth and superstition with a faith in scientific thought, there was also an attempt to construct a common and shared past of multicultural tolerance upon which the new nation could construct its own identity.</p> <p><b>A Healthy Body is a Healthy Nation</b></p> <p>If the body of the citizens is metonymically linked to the body of the nation, the health of this body is representative of the health of the nation-state- or to care for the body of the citizen was to care for the country. Many of the institutions of the newly independent state attempted to do this. They included institutions for sports and other physical activities, but also an elaborate attempt to create a state supported health care system. Recognising that health care was a service necessary that had to be affordable for all of the citizens regardless of caste and class differences, it was considered necessary to make health care affordable to all.</p> <p>Modernist tenets of universality and efficiency seemed to provide the best model to build these new institutions. These buildings were prosthetics attached to the machine-like body of the citizen as curative devices. The body of the patient was to be administered and treated as a contraption which needed repair. This was an imagination that differed from the previous imagination of the hospital as a space of refuge- a place of rest in well ventilated and relaxing surroundings. Here the body of the patient was to recover because of the salubrious environment provided .</p> <p>In the early years of the nation state, the faith in the scientific replaced this imagination. With the care of the body becoming more and more specialised the architecture too became more like an apparatus. Generic, anonymous, monstrous concrete mega structures dotted cities around the country dictated more by bureaucratic processes than by the needs and desires the communities they purported to serve. Yet, this apparatus believed that it was catering to the making and care of the citizen. These were infrastructures that were seen as integral to creating a 'well-being' among citizens. Evoking the fourth pillar of the principles in the constitution 'Fraternity' these were instruments for caring, for 'brotherhood', for the health of ones fellow citizen.</p> <p><b>Citizen to Consumer</b></p> <p>With the collapse of the socialist state this infrastructure began a slow process of disintegration. With private investment in health care, the public service of healthcare started to seem like a relic of the past. Private enterprise was seen to be far more agile in sourcing new technologies in the competitive environment of the market that could be catalysts to reinvent the infrastructure of health care. But private entrepreneurs are not necessarily interested in constitutional imaginations of fraternity. Their intention is to make a profit. As a result health care started becoming more unaffordable for the vast majority of the country. With little or no investment in the infrastructure for health care the older systems started feeling the strain. Public health infrastructure was ignored, while private hospitals became spectacles of high-tech health care for the rich. India even started becoming a popular destination for medical tourism, recognising that there was no dearth of highly trained medical professionals in the country. Yet, for the poorest of the poor health care was relegated to a poorly funded decrepit system.</p> <p><b>The Aftermath of the Pandemic</b></p> <p>While this gap has been increasing, it is the pandemic that has perhaps brought this schism to the forefront. While there have been many instances of the apathy of institutional systems, as the disaster brought out the worst tendencies in many of us to disparage the 'other', there were also many incidences that showed us the possibility of empathy among us, a way in which we reached out to help those in need. In the horrific images that we have seen on our screens, in the anxiety that we have felt, in the many losses that have cut too close to us, in the callousness of the spaces of health care, we have felt a deep sense of helplessness and anger. As architects we have to wonder where do we find a way to contribute. How do we find ways of participating in making the world that we live in more empathetic, comfortable, beautiful? How can we take the spaces in which the most vulnerable of us are placed and make them places of compassion and love?</p> <p>In the Third Year Design Studio we hope to explore the architecture of the infrastructure of health care for the citizen. The World Health Organization defines health as 'a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity'. Taking from this, and learning from the the experience of the pandemic, we hope to evolve a programming and architectonic strategy that addresses the health needs of a community. We shall start by examining the health care infrastructure in the neighbourhoods that the students live in. We shall ask the question, what will the aftermath of the pandemic be in the way that we imagine health care for the citizen? We shall look at how the state imagines the delivery of health care, the various levels of institutions and infrastructure (formal or informal), and their architectural typologies. We shall also study the nature of these spaces as they are experienced in the everyday lives of citizens. This will then lead to the development of a site , programme and architectural strategy for a Neighbourhood Health Centre. This Health Centre will be administered under the State, but will respond to the specific local conditions of the neighbourhoods that the students live in.</p>
	<p><b>COURSE METHODOLOGY</b></p> <p>This is a studio based course. A project proposal is given to the students at he beginning of the semester. The student evolve a solution to the project across the semester with the help of one guide woh is assigned to them. There are periodic juries held across the semester. There is a final external jury at the end of the semester.</p>

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	15 June	Introduction		
	18 June	Study of Neighbourhood		
2	22 June	Learning Environments		
	25 June	Studio		
3	29 June	Studio		
	2 July	Studio		
4	6 July	Concept Jury	Presentations	20%
	9 July	Studio		
5	12 July	Studio		
	16 July	Studio		
6	20 July	Studio		
	23 July	Studio		
7	27 July	Mid Term Jury	Design Development	20%
	30 July	Studio		
8	3 August	Studio		
	6 August	Holiday		
9	10 August	Studio		
	13 August	Studio		
10	16 August	HOLIDAY		
	20 August	Studio		
11	24 August	Studio		
	27 August	Pre Final	Resolved Plans and Sections	20%
12	31 August	Studio		
	3 September	Studio		
13	7 September	Studio		
	10 September	HOLIDAY		
14	14 September	Studio		
	17 September	Studio		
15	21 September	Studio		
	24 September	Studio		
16	1 October	Final Jury	Presentationn Drawings	40%

<b>LEARNING OUTCOMES</b>	<ul style="list-style-type: none"> <li>To enable students to understand programme evolution and institutional structures</li> <li>To enable students to arrive upon architectural ideas that are able to address institutional mandates and urban contexts</li> <li>To enable students ot evolve their own positions and processes towards the design of a building.</li> </ul>
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## CO-PO mapped syllabi of B.Arch Course 2021-2022

### Architectural Design

#### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

#### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delay the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

#### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).

4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Design**

**Sem: 5**

**Third Year**

**Course Code - BARC 501**

#### Course Objectives:

- To enable students to understand programme evolution and institutional structures
- To enable students to arrive upon architectural ideas that are able to address institutional mandates and urban contexts
- To enable students to evolve their own positions and processes towards the design of a building.
- To enable students to resolve architectural ideas with technical resolution and details.
- To be able to present and communicate their projects successfully.

#### Course Outcomes (CO):

Course Outcome (Co)	Description
CO1	Understand and evaluate institutional systems and architecture at strengthening and safeguarding the interests of the collective
CO2	Analyse and Apply critical thinking to the design of institutions in a particular context and their architecture
CO3	Create one's own process for the development of the design.
CO4	Create programmatic and spatial strategies for the design of an institutional building that incorporates technical knowledge learned in other courses
CO5	Create and present a well resolved design project



Year of Assessment :	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject: Technical Studio	University Subject Code	Sessional Marks: 100		Credits	Date of submission			
3 Year, 5 Semester	Architectural Design	BARC 501	100		8	1 October 2021			
Exercise: Title	An Architecture for Care								
Exercise Note / Task	Final Jury with sheets, models and presentation								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
<b>Attendance and participation in the studio</b>	95% to 100% attendance and extremely participative alongwith taking complete responsibility of the studio assignments	90% to 95% attendance and visibly very participative alongwith sharing responsibilities of studio assignments	85% to 90% attendance and visibly participative alongwith sharing responsibilities of studio assignments	75% to 85% attendance and participative alongwith sharing responsibilities of studio assignments only when asked	70% to 75% attendance and participative alongwith sharing responsibilities of studio assignments only when asked	65% to 70% attendance and less participative alongwith sharing responsibilities of studio assignments only when asked	55% to 65% attendance and participative in the studio only when asked	50% to 55% attendance and not participative in the studio	Below 50% attendance and mostly absent in the studio
<b>Proactiveness while on the study trip / site visit and pitching in completing the study post the visit.</b>	Extremely active at organizing group work and preparing supreme quality drawings	Moderately extreme active at organizing group work and preparing supreme quality drawings	Less moderately extreme active at organizing group work and preparing supreme quality drawings	Highly moderately active at organizing group work and preparing supreme quality drawings	Just active at organizing group work and preparing moderate quality drawings	Seldom activeness at organizing group work and preparing satisfactory quality drawings	Not organizing group work and preparing satisfactory quality drawings	No active participation in class	Disinterested
<b>Contextualization of the design concept and resolution of building</b>	Par excellence accuracy and at contextualization of the design intent along with exceptional understanding of structure and services	Outstanding performance at contextualization of the design intent with excellent understanding of technology subjects	Greater excellence at contextualization of the design intent, with skilled design prowess including understanding of technical subjects	Excellence of contextualization of the design intent, align with interesting design choices and resolution	Very good accuracy at contextualization of the design intent building design and resolution skills	Good contextualization of the design intent, along with good building design and resolution skills	Fair contextualization of the design intent, average building design and resolution skills	Satisfactorily contextualization of the design intent, with average building design and resolution skills	Below average contextualization and understanding of the design intent, and below average design skills and technical understanding.

COPO Mapping Setup for Sem 5

CO-PO mapping for a course of "UG program"									
Sr. No.	CO description	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	Understand and evaluate institutional systems and architecture at strengthening and safeguarding the interests of the collective	3	0	0	2	3	0	3	0
CO2	Analyse and Apply critical thinking to the design of institutions in a particular context and their architecture	2	2	2	2	0	1	3	0
CO3	Create one's own process for the development of the design.	0	3	3	0	0	2	1	0
CO4	Create programmatic and spatial strategies for the design of an institutional building that incorporates technical knowledge learned in other	0	3	3	0	0	1	2	0
CO5	Create and present a well resolved design project	0	2	1	0	2	0	0	1

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 502	<b>CREDITS</b>	3+1 (extra)
<b>COURSE NAME</b>	ALLIED DESIGN 5- Landscape Studio	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Jude D, Rutika P, Sanyukta J, Sandeep M, Shruti S, Swati S	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Thursday/ 8.00 – 11.20 pm	<b>NON-CLASS TIME</b>	-

<b>PEDAGOGIC INTENT</b>	The course aims at introducing the students to the dual aspects of landscape architecture- sensitivity to discern interconnected ecological systems and the various landscape entities (both biotic and abiotic), their interrelationships and influences in shaping the place and understanding the experiential and spatial quality of landscape spaces (independently and in conjunction with architecture). The studio encourages the students to explore this understanding to document, analyse, respond, and design experiential landscape spaces.
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<b>COURSE METHOD</b>	<p>The Studio takes various approaches of pedagogy: The initial few weeks (project 1a) take on a 'constructivist approach'-One where the learners are provided the opportunity to construct their own sense of what is being learned by building internal connections or relationships among the ideas being taught.</p> <p>The classroom space will then be divided into a series of structured 'case-study' based lectures by the faculty members and into studio spaces wherein a series of exercises will be taken up of varying complexities and engagements. The project 1b is designed on the principles of 'reflective pedagogy' allowing for the students to learn from their decisions in approaching the exercise.</p> <p>The final project (2) is intended to be collaborative in nature wherein the students will apply their learnings through the past classes, in developing a landscape response to their AD Studio project in collaboration with their studio mentors. This will happen through an 'inquiry-based approach' of understanding the site context, the architectural brief developed and the stakeholders for the project.</p>
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LECT	DATE	TEACHING CONTENT
1	17.06.2021	Introduction to the Course Introduction to Project 1a-'Drawing Narratives'
2	24.06.2021	Lecture about Representation. Class discussion in Mentor-Mentee Groups
3	01.07.2021	Introduction of Project 1b - Explorations inSpace: Binary Responses
4	08.07.2021	Class Discussion in Mentor-MenteeGroups
5	15.07.2021	Introduction to PechaKucha Series-'Reading Landscapes' Lecture on Site Analysis I
6	22.07.2021	PechaKucha Series-StudentsPresentations 1 Faculty Lecture: Healing Environments  Introduction to Project 2: Public SpaceDesign Class Discussion in Mentor-MenteeGroups
7	29.07.2021	PechaKucha Series-StudentsPresentations 2 Faculty Lecture: Site Analysis II Class Discussion in Mentor-MenteeGroups
8	05.08.2021	PechaKucha Series-StudentsPresentations 3 Faculty Lecture-Landscape Architecture-Site Learnings Class Discussion in Mentor-MenteeGroups
9	19.08.2021	PechaKucha Series-StudentsPresentations 4 Faculty Lecture- Materiality Class Discussion in Mentor-MenteeGroups
10	26.08.2021	PechaKucha Series-StudentsPresentations 5 Faculty Lecture- Lighting Intent Class Discussion in Mentor-Mentee Groups
11	02.09.2021	PechaKucha Series-StudentsPresentations 6 Faculty Lecture- Planting Intent Class Discussion in Mentor-Mentee Groups
12	09.09.2021	PechaKucha Series-StudentsPresentations 7 Class discussion in Mentor-MenteeGroups
13	16.09.2021	PechaKucha Series-StudentsPresentations 8 Faculty Lecture- Water ManagementStrategy Class Discussion in Mentor-MenteeGroups
14	23.09.2021	Class Discussion in Mentor-MenteeGroups
15	29.09.2021	Final Jury /Presentation/Submission
16	07.09.2021	Condonation Week and Final Review Marking

<b>LEARNING OUTCOMES</b>	<ul style="list-style-type: none"> <li>● Be able to discern natural processes and their inter-dependencies.</li> <li>● Identify ways of seeing and documenting un-built entities (both anthropogenic and natural).</li> <li>● Learn to represent unbuilt spaces and experiences through the medium of drawing.</li> <li>● Analyze and integrate the observations from the contexts with the help of case studies.</li> <li>● Develop landscape interventions that respond to the site and architectural contexts.</li> </ul>
<b>READING LIST/ REFERENCES</b>	<p>Form and Fabric in Landscape Architecture: A Visual Introduction, Catherine Dee  Landscape Graphics by Grant W. Reid  Landscape as Inspiration by Hans Dieter Schaal  Landscape of Memory and Experience - Jan Birksted  Landscape of Man</p> <p>The Poetics of Gardens by Charles Moore, William Mitchell and William Turnbull Jr  Digital Drawing for Landscape: Bradley Cantrell  Site Planning by Kevin Lynch  Landscape Architecture in India, A Reader: Mohammad Shaheer(Editor), Geeta Wahi Dua (Editor), Adit Pal (Editor)  Tracing Narratives: Indian Landscape Design- LEAF, Ahmedabad</p>

## CO-PO mapped syllabi of B.Arch Course 2021 -2022– Allied Design

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete.
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective).
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Allied Design**  
**Course Code: BARC 502**

**Sem 5**

**Year Third Year**

**Course Objectives:**

The course aims at introducing the students to the dual aspects of landscape architecture- sensitivity to discern interconnected ecological systems and the various landscape entities (both biotic and abiotic), their interrelationships and influences in shaping the place and understanding the experiential and spatial quality of landscape spaces (independently and in conjunction with architecture). The studio encourages the students to explore this understanding to document, analyse, respond, and design experiential landscape spaces.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To apply ways of seeing and representing un-built entities (both anthropogenic and natural) and their experiential qualities.
CO2	To understand the broader sense of the relationship between the built environment and the larger ecological region.
CO3	To explore 'Landscape Projects + Practices' as part of a series of student's presentations and discussion in order to expose them to various possibilities in the purview of landscape architecture
CO4	To analyze and integrate the observations from the contexts into their design programmes.
CO5	To develop the ability to conceive and demonstrate landscape interventions that respond to the site and architectural contexts.

**Rubrics:**

Year of Assessment : 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem:	Subject:	University Subject Code	Sessional Marks	Exercise 01 - Marks out of	Credits	Date of submission			
<b>THIRD YEAR - SEM 5</b>	<b>Allied Design</b>	<b>BARC 502</b>	<b>100</b>	<b>100</b>	<b>3 + 1 (extra)</b>				
<b>Exercise: Title</b>	Emphasis on architectural and spatial understanding of landscape focusing on smaller scales that are experienced immediately outside the architectural footprint.								
<b>Exercise Note / Task</b>	A 'constructivist approach'-One where the learners are provided the opportunity to construct their own sense of what is being learned by building internal connections or relationships among the ideas being taught. The exercise is designed on the principles of 'reflective pedagogy' allowing for the students to learn from their decisions in approaching the exercise.  The exercise is intended to be collaborative in nature wherein the students will apply their learnings through the past classes, in developing a landscape response to their AD Studio project in collaboration with their studio mentors. This will happen through an 'inquiry-based approach' of understanding the site context, the architectural brief developed and the stakeholders for the project.								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% - 55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Attendance and participation	100 to 95% very active presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence
Data Gathering/ monitoring and collating	Showcasing all adopted tools, and frameworks to develop a methodology to critique and analyze the data collected	Showcasing well outstanding insights adopted tools, and frameworks to develop a methodology to critique and analyse the data collected	Showcasing outstanding insights using tools, and frameworks to develop a methodology to critique and analyse the data collected	Showcasing excellent insights using adopted tools, and frameworks to develop a methodology to critique and analyse the data collected	Showcasing very good insights using adopted tools, and frameworks to develop a methodology to critique and analyse the data collected	Showcasing good insights using adopted tools, and frameworks to develop a methodology to critique and analyse the data collected	Showcasing fair insights using adopted tools, and frameworks to develop a methodology to critique and analyse the data collected	Generic methods of analysis	Not informed process of adaptation of tools and frameworks
Depth of Inquiry and ability to generate	Exceptional analytical drawings and clarity	Well-curated outstanding analytical	Very well curated outstanding analytical	Excellent curation using outstanding	Very Good curation using outstanding	Good curation using outstanding	Fair curation using outstanding	Basic level of inquiry incorporating the	Arbitrary and Adhoc Inquiry

analytical drawings	in explaining the concept and design intent	drawings and clarity in explaining the concept and design intent	drawings and clarity in explaining the concept and design intent	analytical drawings and clarity in explaining the concept and design intent	analytical drawings and clarity in explaining the concept and design intent	analytical drawings and clarity in explaining the concept and design intent	analytical drawings and clarity in explaining the concept and design intent	minimum requirements	
Representation Technique and final submission	Very well-formatted presentation of case studies explaining concepts, the process adopted using diagrams, sketches, and assessment	Well-formatted presentation of case studies explaining concepts, and processes adopted using diagrams, sketches, and assessment	Clear formatted presentation of case studies explaining concepts, processes adopted using diagrams, sketches, and assessment	Very good formatted presentation of case studies explaining concepts, the process adopted using diagrams, sketches, and assessment	Good formatted presentation of case studies explaining concepts, the process adopted using diagrams, sketches, and assessment	Fairly formatted presentation of case studies explaining concepts, the process adopted using diagrams, sketches, and assessment	Barely managed to get clarity of intent and study using poor diagrams and sketches	Less clarity in terms of ideas and processes to be followed	Absolutely no clarity of thought and understanding of the subject

CO-PO mapping									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To apply ways of seeing and representing un-built entities (both anthropogenic and natural) and their experiential qualities.	2	1	2	2	1	2	3	3
CO2	To understand the broader sense of the relationship between the built environment and the larger ecological region.	1	2	1	1	2	2	3	2
CO3	To explore 'Landscape Projects + Practices' as part of a series of student's presentations and discussion in order to expose them to various possibilities in the purview of landscape architecture	2	3	1	1	0	2	0	0
CO4	To analyze and integrate the observations from the contexts into their design programmes.	2	1	1	1	2	3	2	3
CO5	To develop the ability to conceive and demonstrate landscape interventions that respond to the site and architectural contexts.	2	3	3	2	1	3	3	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC503	<b>CREDITS</b>	3 Lectures + 1 Studio
<b>COURSE NAME</b>	Architectural Building Construction and Materials 5	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Jimmy, Neeraj	<b>EXAM SCHEME</b>	Theory- 50 marks
<b>CLASS DAY/TIME</b>	Tuesday 01.20-3:00	<b>NON-CLASS TIME</b>	12

<b>PEDAGOGIC INTENT</b>	The intent as per the construction learning curve is to introduce and help students understand structures of institution typology as last year the same was on housing and domesticity. Planning, structural system design, scale, fenestrations and skins that lend specific identity/ character to Institutional buildings shall be addressed in both resolution as well as detailing.
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<b>COURSE METHODOLOGY</b>	Students are to be made well versed with analytical as well as detailing skills of the institution typology through the site and case studies whereby all aspects of structure and skin are understood well in detail so as the same may help the student in understanding the resolution as well as detailing of renowned Institutional structures. <i>Learnings from the lecture courses shall be applied in specific exercises in the Technology Studio for studio credits and marking.</i>
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Lecture

<b>COURSE CODE</b>	BARC503	<b>CREDITS</b>	3
<b>COURSE NAME</b>	Architectural Building Construction and Materials 5	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Jimmy, Neeraj	<b>EXAM SCHEME</b>	Theory- 50 marks
<b>CLASS DAY/TIME</b>	Tuesday 01.20-3:00	<b>NON-CLASS TIME</b>	12

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	29/06/2021	Introduction to Specification and BOQs		
2	06/07/2021	Types of Specifications		
3	13/07/2021	Subterranean framed structure systems		
4	20/07/2021	Shallow basement and retaining walls		
5	27/07/2021	Framed RCC structural system		
6	03/08/2020	Designing in structural steel		
7	10/08/2021	Metal floor systems		
8	17/08/2021	Advanced Slab Systems 1		
9	24/08/2021	Advanced Slab Systems 2		
10	01/09/2021	Lightweight steel roof above large spans		
11	08/09/2021	RCC and steel stairs and ramps		
12	15/09/2021	Skins and fenestrations		

Studio

<b>COURSE CODE</b>	BARC 507	<b>CREDITS</b>	6 (4ARD + 1 ABS + 1 ABC + 1 TOS)
<b>COURSE NAME</b>	Architectural Representation and Detailing 5	<b>SESSIONAL MARKS</b>	150 (later converted to 100)
<b>FACULTY</b>	Minal. Y, Jamshed B., Ainsley L., Kimaya K., Vikram P., Dharmesh M., Neeraj V., Shantanu K.	<b>EXAM SCHEME</b>	Sessional both internal and external
<b>CLASS DAY/TIME</b>	Wed – 9.00 -3.50 pm	<b>NON-CLASS TIME</b>	5 hrs

<b>PEDAGOGIC INTENT</b>	The subject is an attempt to bring about a detailed resolution of design through technical representation of acquired knowledge of construction, services, building material and computing thereby leading to preparation of a fine set of working drawings, very relevant for good practice
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<b>COURSE METHODS</b>	It's a working studio and one-to-one interaction with respective faculty who have been assigned to guide them to resolve their projects.
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	DATE	TEACHING CONTENT	MARKING WEIGHTAGE	ASSIGNMENTS
1 <sup>st</sup> WEEK	30/6/21	Introduction + Design development		
2 <sup>nd</sup> WEEK	7/7/21	Lecture by Ainsley on spatial understanding and DD + Studio		
3 <sup>rd</sup> WEEK	14/7/21	SUBMISSION	10 ARD + 10 TOS +5 ABC + 5 ABS	Sketch plans, sections based on concept, climate, material, systems and site strategies
4 <sup>th</sup> WEEK	21/7/21	Lecture by Kimaya on Climate responsive architecture + Design resolution		Site strategies
5 <sup>th</sup> WEEK	28/7/21	Lecture by Minal as Services and systems as design drivers + Design resolutions	-----	Ground floor plan
	4/8/21	Lecture by Dharmesh + Design resolutions		LP, CP, FP and SP
6 <sup>th</sup> WEEK	11/8/21	SUBMISSION	10 ARD + 10 ABS	LP, CP, FP and SP + BOQ till plinth
7 <sup>th</sup> WEEK	18/8/21	Lecture by Neeraj	10 ARD + 10 ABS	Detailed floor plans with structural and fenestration system + acoustic resolution
8 <sup>th</sup> WEEK	25/8/21	Lecture by Shantanu	-----	Elevations and sound lines
	1/9/21	Midterm compilation		Acoustical resolution with RT
9 <sup>th</sup> WEEK	8/9/21	SUBMISSION	20 ARD + 10 TOS + 10 ABS	Section and elevations, 3D, BOQ till superstructure
10 <sup>th</sup> WK	15/9/21	Review of swap portfolio	20 ARD	SWAP & midterm marking
11 <sup>th</sup> WK	22/9/21	Review on detail (strip wall section)-1	10 ARD + 10 ABC	Strip wall detailed section
12 <sup>th</sup> WK	29/9/21	Review of advanced roof/floor system 2	10 ARD + 10 ABC	Advanced roof/floor sys.
13 <sup>th</sup> WK	6/10/21	Review of toilet details 3	10 ARD + 20 ABS	Toilet detail submission
14 <sup>th</sup> WK	13/10/21	Review of details 4	10 ARD + 10 ABC	Staircase/canopy/ramp
15 <sup>th</sup> WK	16/3/22	Review of Synthesis drawing	30 ARD	Synthesis drawing
				ABS – 50 MARKS
				ABC – 50 MARKS
				TOS -30 MARKS
				ARD - 150

<b>LEARNING OUTCOMES</b>	Students should have derived the ability to resolve structure through innovation, understand the strengths and limitations of the material adopted for structure along with detailing of the skin to help understand design criteria, material application and market practices of the systems adopted in an organised manner.
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<b>READING LIST/ REFERENCES</b>	<b>Building Construction Handbook by Chudley &amp; Greeno, Advanced Construction by Barry, Structure and fabric part II by Mitchell</b>
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**CO-PO mapped syllabi of B.Arch Course 2021-2022 – Architectural Building Construction and Materials 5**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognise and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete)
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Building Construction and Materials 5**

**Course Code: BARC503**

**Sem 5**

**Third Year**

**Course Objectives:**

- The intent as per the construction learning curve is to introduce and help students understand structures of Institution typology as last year the same was on housing and domesticity.
- Planning, structural system design, scale, fenestrations, and skins that lend specific identity/character to Institutional buildings shall be addressed in both resolution as well as detailing.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Analyze and evaluate the structural system designs and materials used in institutional buildings, including their impact on the overall building performance and functionality in a technical sense.
CO2	Design advanced slabs and lightweight skin systems for RCC and MS framed buildings, incorporating sustainable and efficient strategies.
CO3	Understand comprehensive details for institutional building elements such as cores, fenestrations, cladding, and curtain wall systems, considering both functional and aesthetic aspects.
CO4	Develop a perspective on the importance of technical knowledge and its application with respect to the role of an architect as a professional and the ability to empathetically communicate with all stakeholders.

Rubrics:

Year of Assessment : 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 100	Exercise 01: Marks out of	Credits	Date of submission	Upgrade 01	Upgrade 02
THIRD YEAR - SEM 5	ABCM5	TLC033	503	100	100	4	Multiple		
Exercise: Title	Structural resolution of Architectural Design project from Sem 4								
Exercise Note / Task	Portfolio submission by students								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% -40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
Depth of Inquiry and ability to generate analytical drawings	Exceptional analytical drawings and clarity in explaining the concept and architectural design intent	Well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Excellent curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
Data Gathering/ monitoring and collating	Showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing well outstanding insights adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing Outstanding insights using tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Generic methods of analysis	Not informed process of adaptation of tools and frameworks

Representation Technique and final submission	Very well formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Well formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Clear formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Very good formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Good formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Fairly formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Barely managed to get clarity of intent and study using poor diagrams and sketches	Less clarity in terms of ideas and processes to be followed	Absolute no clarity of thought and understanding of the subject
Ability to demonstrate the Learnings from the discussions conducted in class	Showcasing 100% ability to translate theoretical knowledge into practice	Showcasing 90% ability to translate theoretical knowledge into practice	Showcasing 80% ability to translate theoretical knowledge into practice	Showcasing 70% ability to translate theoretical knowledge into practice	Showcasing 65% ability to translate theoretical knowledge into practice	Showcasing 60% ability to translate theoretical knowledge into practice	Showcasing 55% ability to translate theoretical knowledge into practice	Showcasing 50% ability to translate theoretical knowledge into practice	Zero understanding and application of theoretical knowledge
Attendance and participation in the discussions	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence



CO-PO mapping for a course of "UG program" Architectural Building Construction and Materials 4									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Analyze and evaluate the structural system designs and materials used in institutional buildings, including their impact on the overall building performance and functionality in a technical sense.	1	0	0	1	0	2	3	0
CO2	Design advanced slabs and lightweight skin systems for RCC and MS framed buildings, incorporating sustainable and efficient strategies.	2	3	3	0	0	0	2	0
CO3	Understand comprehensive details for institutional building elements such as cores, fenestrations, cladding, and curtain wall systems, considering both functional and aesthetic aspects.	2	3	3	0	0	0	2	0
CO4	Develop a perspective on the importance of technical knowledge and its application with respect to the role of an architect as a professional and the ability to empathetically communicate with all stakeholders.	3	1	2	3	3	2	1	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>BARC 504</b>	COURSE NAME	Theory and Design of Structure - 5		SEMESTER	Sem 5	CREDITS	3 (2 TOS + 1 Technology Studio)	
	FACULTY	Bhargav Kolapkar, Neeraj Vakharia		SESSIONAL MARKS	50	SCHEME OF EXAMINATION	Theory - 50 (Internal)	
	TIME	Saturday ( 09.00 – 11.30 )		TEACHING HOURS	26 Hours	TIME REQUIRED OUTSIDE OF CLASS	None	
UNIVERSITY COURSE DESCRIPTION	1. Understanding steel table and readily available steel sections in market. 2. Understanding connections: Riveted , welded, and bolted for steel framed building, trusses etc 3. Design of tension members in trusses 4. Design compression members in trusses and columns 5. Design of beams 6. Design of foundations, slab base, gusseted base and grillage							
PEDAGOGIC INTENT	To develop solid background on the principles of structural design with emphasis on concepts in analysis and hands-on steel design at element and structure level and to develop an understanding of real-world steel design challenges.							
METHOD	Interactive lectures with audio-visual aids and case-studies aimed at stimulating students to think, ask questions and pursue practical solutions to design problems. Proactive learning through customized assignments.							
SCHEDULE	DAY	DATE	TEACHING CONTENT	MARKING DISTRIBUTION				
week 1	Saturday	10 July 2021	Introduction to design of steel structures, steel table	4				
week 2	Saturday	24 July 2021	Steel table, basic design concepts, limit states method of design	2				
week 3	Saturday	7 Aug 2021	Design of tension members in trusses	11				
week 4	Saturday	21 Aug 2021	Design of tension members in trusses, design of compression members	11				
week 5	Saturday	4 Sept 2021	Design of compression members in trusses and columns	3				
week 6	Saturday	18 Sept 2021	Design of Beams	12				
week 7	Saturday	09 Oct 2021	Design of Beams	4				
week 8	Saturday	23 Oct 2021	Class Test	7				
week 9	Saturday	30 Oct 2021	Revision	6				
EVALUATION CRITERIA	The students are evaluated based on their understanding of the behaviour and design of various steel structural elements & connections based on their performance in assignments & exams and participation during lectures.							
LEARNING OUTCOMES	By the end of this course, students are expected to comprehend steel table and know commonly used steel sections in practice, understand the behaviour of various members in a steel structure and work out their preliminary sizes, and understand the fundamentals of connection design.							
READING LIST	Design of Steel Structures by N. Subramanian, Design of Steel Structures by S.K. Duggal, Steel Structures: Design & Behavior by C. Salmon, J. Johnson & F. Malhas							

## CO-PO mapped syllabi of B.Arch Course 2021-2022 – *Theory and Design of Structures 5*

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Theory and Design of Structures 5**

**Course Code: BARC 504**

**Sem 5**

**Name - 3rd Year**

**Course Objectives:**

- To develop a sound understanding of the principles of structural steel design with emphasis on design at the member level using a fusion of theoretical concepts and practical design examples.
- To encourage and enable students to use steel members and systems in their design projects.

**Course Outcomes (CO):**

Course Outcome (CO)	Description
CO1	Introduction to steel as a structural material, its inherent properties, advantages, and shortcomings.
CO2	Develop an intuitive understanding of the flow of loads in a steel structure and the nature of stresses in various members.
CO3	Understand the behavior of typical members in a steel structure and work out their preliminary sizes, fundamentals of connection design
CO4	Develop a perspective on the importance of technical knowledge and its application with respect to the role of an architect as a professional.

**Rubrics:**

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 100	Exercise 01 & 02: Marks out of	Credits	Date of submission		
THIRD YEAR - SEM 5	Theory and Design of Structures 5	BARC 504	BARC 504	50	50	3 (2TOS +1 Technology Studio)			
Exercise: Title	Steel as a structural material								
Exercise Note / Task	Assignment + Test								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Data Gathering/ monitoring and collating	All data to be collected from reliable sources with references included in the reports. Exceptional in showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected.	All data to be collected from reliable sources with references included in the reports. Showcasing well outstanding insights adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing Outstanding insights using tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with most references included in the reports. Showcasing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Data collected is from adequate sources with most references included in the reports. Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Data collected is from adequate sources with most references included in the reports. Showcasing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Generic methods of analysis	Not informed process of adaptation of tools and frameworks
Depth of Inquiry and ability to generate analytical drawings	Exceptional analytical drawings and clarity in explaining the concept and architectural design intent	Well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Excellent curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
In-depth understanding a theory and its application in the architectural field	Exceptional analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic	Well curated outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the	Very well curated outstanding analytical drawings and clarity in explaining the concept, architectural design intent	Excellent curation using outstanding analytical drawings and clarity in explaining the concept, architectural design intent	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent.	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent.	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry

	articulation that allows for the identified architectural expression.	tectonic articulation that allows for the identified architectural expression.	and the tectonic articulation that allows for the identified architectural expression.	and the tectonic articulation.					
<b>Representation Technique and final submission</b>	Very well formatted presentation explaining concepts, process adopted using various tools and techniques	Well formatted presentation explaining concepts, process adopted using various tools and techniques	Clear formatted presentation explaining concepts, process adopted using various tools and techniques	Very good formatted presentation explaining concepts, process adopted using various tools and techniques	Good formatted presentation explaining concepts, process adopted using various tools and techniques	Fairly formatted presentation explaining concepts, process adopted using various tools and techniques	Barely managed to get clarity of intent and study using poor diagrams and sketches	Less clarity in terms of ideas and processes to be followed	Absolute no clarity of thought and understanding of the subject
<b>Ability to demonstrate the Learnings from the discussions conducted in class</b>	Showcasing 100% ability to translate theoretical knowledge into practice	Showcasing 90% ability to translate theoretical knowledge into practice	Showcasing 80% ability to translate theoretical knowledge into practice	Showcasing 70% ability to translate theoretical knowledge into practice	Showcasing 65% ability to translate theoretical knowledge into practice	Showcasing 60% ability to translate theoretical knowledge into practice	Showcasing 55% ability to translate theoretical knowledge into practice	Showcasing 50% ability to translate theoretical knowledge into practice	Zero understanding and application of theoretical knowledge
<b>Attendance and participation in the discussions</b>	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence

CO-PO mapping for a course on “Theory and Design of Structures 5”

Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Introduction to steel as a structural material, its inherent properties, advantages, and shortcomings.	1	1	3	1	0	3	2	3
CO2	Develop an intuitive understanding of the flow of loads in a steel structure and the nature of stresses in various members.	3	3	1	3	1	1	2	2
CO 3	Understand the behavior of typical members in a steel structure and work out their preliminary sizes, fundamentals of connection design	2	2	1	2	0	0	2	0
CO4	Develop a perspective on the importance of technical knowledge and its application with respect to the role of an architect as a professional.	3	2	1	3	3	1	2	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 508	<b>CREDITS</b>	3 (2 Lectures + 1 Studio)
<b>COURSE NAME</b>	Architectural Building Services 3	<b>SESSIONAL MARKS</b>	50 marks
<b>FACULTY</b>	M. Yerramshetty, Swati Seshadri	<b>EXAM SCHEME</b>	Theory - 50 marks
<b>CLASS DAY/TIME</b>	Monday - 9.40 -11.20	<b>NON-CLASS TIME</b>	3 Hrs

**PEDAGOGIC INTENT** - The Architectural Building Services course in this semester intends to develop technical and scientific know-how of a building by introducing the active infrastructure systems to make a building efficient, comfortable, convenient from the visual and acoustic aspect. Taking cues from renewability and regenerative concepts, this course introduces energy efficient building systems and components.

**COURSE METHODS** - Case study. Audio - visual presentation, discussion, debates, and exercise based on architectural design

**Lecture**

<b>COURSE CODE</b>	BARC 508	<b>CREDITS</b>	3 (2 Lectures + 1 Studio)
<b>COURSE NAME</b>	Architectural Building Services 3	<b>SESSIONAL MARKS</b>	50 marks
<b>FACULTY</b>	M. Yerramshetty, Swati Seshadri	<b>EXAM SCHEME</b>	Theory - 50 marks
<b>CLASS DAY/TIME</b>	Monday - 9.40 -11.20	<b>NON-CLASS TIME</b>	3 Hrs

LECT	DATE	TEACHING CONTENT
1	19/6/2021	Introduction to third year syllabus, Acoustics, and brief revision of last year.
2	26/6/2021	Planning aspects of various typology of congregation spaces at site as well as at neighbourhood level. History of Auditoriums, design criteria and terminology
4	05/7/2021	Planning aspects of congregation spaces especially auditorium and showcasing case studies
5	12/7/2021	Acoustics - Reverberation, calculation, theory of acoustics, defects in auditorium and elimination strategies, material use and their installation
6	16/7/2021	Acoustic theory continues.
7	23/7/2021	Case study presentation on acoustics and auditorium planning
	30/7/2021	Electricity - generation, transfer, distribution at city and site level, sustainable and safety measures to be considered at design level, electricity usage calculations.
8	05/8/2021	Electricity continues
9	12/8/2021	Electricity resolution for their design
10	19/8/2021	lighting design - lights in architecture, design consideration for lighting an area, different terminology, daylight, different systems of lighting, setting illuminance level, calculating fixtures, light categories, and their fixtures
11	26/8/2021	Lighting continues
12	02/9/2021	Electricity/ lighting design of their tech studio
13	09/9/2022	Case study presentation
14	16/9/2022	Electricity/ lighting design of their tech studio Revision
15	23/9/2022	Electricity/ lighting design of their tech studio
16	30/9/2022	Revision

**LEARNING OUTCOMES** - 1) The intent is to help students to understand the importance of Daylight and orientation and when and how to enhance the ambience of any space with artificial lighting. 2) Energy used in these applications and the methods to minimize energy expenditure by way of architectural strategies and using correct lights and luminaires 3) Electrical distribution, locations and spaces required for clean and maintenance easy installation but also the safety of the building and people 4) Representational Drawing for electrical and lighting layout 5) Acoustics for different buildings - preparing drawings and presentation of case studies.

**REFERENCES /READING LIST** - B 3095 - Acoustics in the Built Environment, B 3034 -Architectural Acoustics: principles and practice, B 2478 - Acoustical Designing in Architecture, B 1542 -Noise Control in the Built Environment, B 7 - Architectural Acoustics, B 20 -Detailing for Acoustics, B 1837 -Light: the shape of space: designing with space and light, B 39 -Architectural Lighting Design, B 1298 -Architectural Lighting Design, B 1289 - Design of Electrical Services for Buildings, B 2665 -Design of Electrical Services for Buildings, B 4539 -Electricity, B 1649 - Electrical System for Architects.

**Studio**

<b>COURSE CODE</b>	BARC -508	<b>CREDITS</b>	4 (3ARD + 1 ABS + 1 ABC + 1 TOS)
<b>COURSE NAME</b>	Architectural Building Services 3	<b>SESSIONAL MARKS</b>	150 (later converted to 100)
<b>FACULTY</b>	Minal. Y, Jamshed B., Ainsley L., Kimaya K., Vikram P., Dharmesh M., Neeraj V., Shantanu K.	<b>EXAM SCHEME</b>	Sessional both internal and external
<b>CLASS DAY/TIME</b>	Wednesday - 8.00 -3.50 pm	<b>NON-CLASS TIME</b>	5 hrs

	DATE	TEACHING CONTENT	MARKING WEIGHTAGE	ASSIGNMENTS
1 <sup>st</sup> WEEK	30/6/21	Introduction + Design development		
2 <sup>nd</sup> WEEK	7/7/21	Lecture by Ainsley on spatial understanding and DD + Studio		
3 <sup>rd</sup> WEEK	14/7/21	<b>SUBMISSION</b>	<b>10 ARD + 10 TOS + 5 ABC + 5 ABS</b>	Sketch plans, sections based on concept, climate, material, systems and site strategies
4 <sup>th</sup> WEEK	21/7/21	Lecture by Kimaya on Climate responsive architecture + Design resolution		Site strategies
5 <sup>th</sup> WEEK	28/7/21	Lecture by Minal as Services and systems as design drivers + Design resolutions	-----	Ground floor plan
	4/8/21	Lecture by Dharmesh + Design resolutions		LP, CP, FP and SP
6 <sup>th</sup> WEEK	11/8/21	<b>SUBMISSION</b>	<b>10 ARD + 10 ABS</b>	LP, CP, FP and SP + BOQ till plinth
7 <sup>th</sup> WEEK	18/8/21	Lecture by Neeraj	<b>10 ARD + 10 ABS</b>	Detailed floor plans with structural and fenestration system + acoustic resolution
8 <sup>th</sup> WEEK	25/8/21	Lecture by Shantanu	-----	Elevations and sound lines
	1/9/21	<b>Midterm compilation</b>		Acoustical resolution with RT
9 <sup>th</sup> WEEK	8/9/21	<b>SUBMISSION</b>	<b>20 ARD + 10 TOS + 10 ABS</b>	Section and elevations, 3D, BOQ till superstructure
10 <sup>th</sup> WK	15/9/21	Review of swap portfolio	<b>20 ARD</b>	SWAP & midterm marking
11 <sup>th</sup> WK	22/9/21	Review on detail (strip wall section)-1	<b>10 ARD + 10 ABC</b>	Strip wall detailed section
12 <sup>th</sup> WK	29/9/21	Review of advanced roof/floor system 2	<b>10 ARD + 10 ABC</b>	Advanced roof/floor sys.
13 <sup>th</sup> WK	6/10/21	Review of toilet details 3	<b>10 ARD + 20 ABS</b>	Toilet detail submission
14 <sup>th</sup> WK	13/10/21	Review of details 4	<b>10 ARD + 10 ABC</b>	Staircase/canopy/ramp
15 <sup>th</sup> WK	16/3/22	Review of Synthesis drawing	<b>30 ARD</b>	Synthesis drawing
			ABS - 50 MARKS	
			ABC - 50 MARKS	
			TOS -30 MARKS	
			ARD - 150	

**LEARNING OUTCOMES** A student should be able to resolve his project through a set of well represented working drawings based on the technical knowledge acquired by him over the last two years.

**READING LIST/ REFERENCES** Drawing set of architectural plans, various architects work, case study list provided.

**CO-PO mapped syllabi of B.Arch. Course 21-22 – Architectural Building Services 5**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delay the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. (Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic

systems (Technical / Social)

7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Building Services 3**

**Course Code: BARC 508**

**Sem 5**

**Third Year**

**Course Objectives:**

The Architectural Building Services course in this semester intends to develop technical and scientific know-how of a building by introducing the active infrastructure systems to make a building efficient, comfortable, convenient from the visual and acoustic aspect.

Taking cues from renewability and regenerative concept, this course introduces to energy efficient building systems and components.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To enable students to understand the lighting and acoustic components and workability within a building, with a focus on holistic understanding of materiality, technical details and layout.
CO2	To make the students explore the various techniques of representing the building systems and components, to be executed on their architectural projects and site.
CO3	To analytically arrive at building energy-efficiency by applying alternative and renewable energy sources as well as regenerative systems.

**Rubrics**

Year of Assessment: 21-22	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
THIRD YEAR	Subject: Architectural Building Services	Subject Code	University subject code	Sessional Marks:	Exercise 01: Marks out of	Credits	Date of submission	Upgarde 01	Upgrade 02
5 SEM			BARC 508	50		3	Multiple		
<b>Exercise: Title</b>	Basic Working drawing set, electrical layout								
<b>Exercise Note / Task</b>	Resolution and preparing a set of working drawings for their architectural design project.								

Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
<b>Understanding of systems and their integration with other systems as well as with space</b>	1)Complete understanding of systems 2) its integration with other system 3) its hierarchy in planned space	1)Very good understanding of systems 2) its integration with other and its position in planned space.	Good understanding of systems and its integration and its position in planned space.	Fairly good understanding of systems and its integration and its position in planned space.	1)Understanding of system is seen along with other systems 2) lacking spatial integration.	1)Lesser understanding of system is seen along with other systems 2) lacking spatial integration	1)Poor understanding of system. 2)No understanding of integration with other systems.	Extremely poor understanding of system.	Non-Submission
<b>Representation Technique and final submission</b>	Logical and semantic representation	Logical representation	Good representation in all aspect	Good representation in all aspect	Fairly represented in all aspect	The drawings could be understood	Representation needed clarification	Drawings not clear enough	Non-Submission
<b>Attendance, time management and participation in Studio</b>	Attends 95% of total classes	Attends 90% of total classes	Attends 85 % of total classes	Attends 80% of total classes	Attends 75% of total classes	Attends 70% of total classes	Attends 60% of total classes	Attends 55% of total classes	Attends less than 50% of total classes

**COPPO Mapping**

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To enable students to understand the lighting and acoustic components and workability within a building, with a focus on holistic understanding of materiality, technical details and layout.	2	2	0	2	2	1	2	2
CO2	To make the students explore the various techniques of representing the building systems and components, to be executed on their architectural projects and site.	2	1	1	1	1	2	2	2
CO3	To analytically arrive at building energy-efficiency by applying alternative and renewable energy sources as well as regenerative systems.	1	2	2	1	2	1	2	2

<b>COURSE NAME</b>	Humanities: A Social History of Mumbai	<b>CREDITS</b>	03
<b>SEMESTER</b>	5	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Hussain, Shweta	<b>EXAM SCHEME</b>	Sessionals and exam
<b>TIME</b>	Thursday 1.20 pm	<b>NON-CLASS TIME</b>	2 hours

<b>COURSE DESCRIPTION</b>	The third year humanities course intends to shift inquiry from built space to the process of its production - to grasp the contested nature of spatial processes. The city of Mumbai will be the main object of investigation. In the fifth semester we will explore the social history of early and late colonial period of Mumbai city-region.
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<b>PEDAGOGIC INTENT / LEARNING OBJECTIVES</b>	<p>1) An introduction to Mumbai's growth and transformation through a social-history perspective. The course will provide a critical-historical framework to explore the social and spatial evolution of Mumbai region (MMR), with an emphasis on the highly contested process of spatial production, and the centrality of relations of power and politics in shaping the city.</p> <p>2) A historical overview of the city's physical and demographic growth, economic and social geography, institutional-administrative structure, and urban planning and development policy.</p> <p>3) A critical overview of the processes of urbanization, migration, industrialization - and public policy responses in the form of regional planning, environment conservation, heritage conservation, and policies for public housing, infrastructure and services.</p>
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<b>COURSE METHODOLOGY</b>	The course will be a weekly lecture and discussion seminar, of 2 hours per session. The course is designed as a series of threads or stories about the city, through which the students will be introduced to its various institutions, interest groups, significant events, and spatial developments. The stories will be narrated through lectures, readings and films, and occasionally students will be expected to make presentations.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS
1	10 <sup>th</sup> June	Introduction: the method of social history	
2	17 <sup>th</sup> June	<b>Opium:</b> the shape of trade and commerce	
3	24 <sup>th</sup> June		
4	1 <sup>st</sup> July	<b>Plague:</b> producing the sanitary city	
5	8 <sup>th</sup> July		
6	15 <sup>th</sup> July	<b>Capital:</b> making an <i>Urbs Prima in Indis</i>	
7	22 <sup>nd</sup> July		
8	29 <sup>th</sup> July	<b>Strikes:</b> factories, chawls and working-class neighborhoods	
9	5 <sup>th</sup> Aug		
10	12 <sup>th</sup> Aug	<b>Land:</b> reclamations, surveys, enclosures	
11	19 <sup>th</sup> Aug		
12	26 <sup>th</sup> Aug	<b>Nature:</b> from swamps to nature parks	
13	2 <sup>nd</sup> Sept		
14	9 <sup>th</sup> Sept	Concluding Seminar	

<b>EVALUATION CRITERIA</b>	The main assignment will be a 1500 word article that students will develop through the course by identifying one of the threads explored during the 13 weeks. This will be given 75% of the weight. Class participation will be given 25% of the grade.
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## CO-PO mapped syllabi of B.Arch Course 2021-22 – HUMANITIES SEM 5

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to de-layer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. (Self / Other)



5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Humanities**  
**Course Code: BARC505**  
**Sem 5**

**Course Objectives:**

- 1) An introduction to Mumbai’s growth and transformation through a social-history perspective.
- 2) The course will provide a critical-historical framework to explore the social and spatial evolution of Mumbai region (MMR), through the framework of ‘production of space’
- 3) A historical overview of the city’s physical and demographic growth, economic and social geography, institutional-administrative structure, and urban planning and development policy.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Students will adopt the ‘production of space’ as an analytical tool to study urban phenomena
CO2	To explore Mumbai’s growth and transformation through a social history perspective
CO3	A historical overview of the city’s physical and demographic growth, economic and social geography, institutional-administrative structure, and urban planning and development policy.

**Rubrics:**

Year of Assessment: 2021 - 2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks:	Exercise 01 : Marks out of	Credits	Date of submission		
SECOND YEAR - SEM 3	Hum	BARC505		50	50				
<b>Exercise: Title</b>	Class case study presentations								
<b>Exercise Note / Task</b>	Present a case-study in groups in an audio-visual format								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>(A) Interpretation of Case Study</b>	Excellent understanding of the case, ability to identify the determinants and explain them lucidly, is able to connect the case to contemporary examples	Very good understanding of the case, ability to identify the determinants and explain them well, is able to connect the case to contemporary examples	good understanding of the case, ability to identify the determinants and explain them competently	good understanding of the case, ability to identify the determinants and explain them adequately	A fair understanding of the case, ability to identify the determinants and explain them adequately	A fair understanding of the case, ability to identify the determinants	An minimal understanding of the case, somewhat able to identify determinants	An minimal understanding of the case,	Little or no understanding of the case
<b>(B) Presentation Quality as a whole</b>	Outstanding organization of the presentation, exceptionally clear presentation combined with creative use of visual aids	Exceptionally well structured, exceptionally clear presentation combined with creative use of visual aids	Well structured, exceptionally clear presentation combined with good use of visual aids	Very Clear presentation, combined with good use of visual aids	Well organized presentation, combined with competent use of visual aids	Manage to convey the ideas adequately	Some difficulty in expressing ideas, acceptable	Difficulty in explaining	poorly constructed and unable to convey ideas
<b>(C) Participation and conduct in class</b>	90% attendance or more, active participation in class and excellent conduct overall	90% attendance or more, good participation in class and very good conduct overall	80% - 90% attendance, active participation in class and excellent conduct overall	80% - 90% attendance, good participation in class and very good conduct overall	70% -80% attendance, active participation in class and excellent conduct overall	70% -80% attendance, good participation in class and very good conduct overall	50% - 70% attendance	50% - 70% attendance	50% attendance or less

CO-PO mapping Humanities Sem 1									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Students will adopt the ‘production of space’ as an analytical tool to study urban phenomena	3	2	1	2	2	3	3	0
CO2	To explore Mumbai’s growth and transformation through a social history perspective	3	1	0	3	2	3	3	0
CO3	A historical overview of the city’s physical and demographic growth, economic and social geography, institutional-administrative structure, and urban planning and development policy.	2	1	0	1	2	2	3	1

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC -507	<b>CREDITS</b>	4 ARD (1 ABS + 1 ABC + 1 TOS)
<b>COURSE NAME</b>	Architectural Representation and Detailing 5	<b>SESSIONAL MARKS</b>	150 (later converted to 100)
<b>FACULTY</b>	Minal. Y, Jamshed B., Ainsley L., Kimaya K., Vikram P., Dharmesh M., Neeraj V., Shantanu K.	<b>EXAM SCHEME</b>	Sessional
<b>CLASS DAY/TIME</b>	Wed – 9.00 -3.50 pm	<b>NON-CLASS TIME</b>	5 hrs

<b>PEDAGOGIC INTENT</b>	The subject is an attempt to bring about a detailed resolution of design through technical representation of acquired knowledge of construction, services, building material and computing thereby leading to preparation of a fine set of working drawings, very relevant for good practice
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<b>COURSE METHODS</b>	It's a working studio and one to one interaction with respective faculty who have been assigned to guide them to resolve their projects.
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	DATE	TEACHING CONTENT	MARKING WEIGHTAGE	ASSIGNMENTS
1 <sup>st</sup> WK	30/6/21	Introduction + Design development		
2 <sup>nd</sup> WK	7/7/21	Lecture by Ainsley on spatial understanding and DD + Studio		
3 <sup>rd</sup> WK	14/7/21	<b>SUBMISSION</b>	<b>10 ARD + 10 TOS +5 ABC + 5 ABS</b>	Sketch plans, sections based on concept, climate, material, systems and site strategies
4 <sup>th</sup> WK	21/7/21	Lecture by Kimaya on Climate responsive architecture + Design resolution		Site strategies
5 <sup>th</sup> WK	28/7/21	Lecture by Minal as Services and systems as design drivers + Design resolutions	-----	Ground floor plan
	4/8/21	Lecture by Dharmesh + Design resolutions		LP, CP, FP and SP
6 <sup>th</sup> WK	11/8/21	<b>SUBMISSION</b>	<b>10 ARD + 10 ABS</b>	LP, CP, FP and SP + BOQ till plinth
7 <sup>th</sup> WK	18/8/21	Lecture by Neeraj	<b>20 ARD + 10 ABS</b>	Detailed floor plans with structural and fenestration system + acoustic resolution
8 <sup>th</sup> WK	25/8/21	Lecture by Shantanu	-----	Elevations and sound lines
	1/9/21	<b>Midterm compilation</b>		Acoustical resolution with RT
9 <sup>th</sup> WK	8/9/21	<b>SUBMISSION</b>	<b>20 ARD + 10 TOS + 10 ABS</b>	Section and elevations, 3D, BOQ till superstructure
10 <sup>th</sup> WK	15/9/21	Review of swap portfolio	<b>20 ARD</b>	SWAP & midterm marking
11 <sup>th</sup> WK	22/9/21	Review on detail (strip wall section)-1	<b>10 ARD + 10 ABC</b>	Strip wall detailed section
12 <sup>th</sup> WK	29/9/21	Review of advanced roof/floor system 2	<b>10 ARD + 10 ABC</b>	Advanced roof/floor sys.
13 <sup>th</sup> WK	6/10/21	Review of toilet details 3	<b>10 ARD + 20 ABS</b>	Toilet detail submission
14 <sup>th</sup> WK	13/10/21	Review of details 4	<b>10 ARD + 10 ABC</b>	Staircase/canopy/ramp
15 <sup>th</sup> WK	20/10/22	Review of Synthesis drawing	<b>30 ARD</b>	Synthesis drawing

<b>LEARNING OUTCOMES</b>	A student should be able to resolve his project through a set of well represented working drawings based on the technical knowledge acquired by him over the last two years.
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<b>READING LIST/ REFERENCES</b>	Drawing set of architectural plans, various architects works, case study list provided.
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## CO-PO mapped syllabi of B. Arch Course 21-22 – Architectural Representation and detailing 5

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorize and conceptualize ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive ways of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete.
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. (Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic

systems (Technical / Social)

7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Representation and detailing 5**

**Course Code: BARC 507                      Sem 5                      Third Year**

**Course Objectives:**

The studio looks to blur the lines of *design and making* as two separate modes of knowledge and set up a space for students to have an analytical, questioning attitude towards all aspects of technology. This also encompasses the idea that a student is able to choose correct technology and materials to support it. The subject is an attempt to bring about a detailed resolution of design through technical representation of acquired knowledge of construction, services, building material and computing thereby leading to preparation of a fine set of working drawings and a tender document, very relevant for good practice. Every class shall consist of a lecture of 40 minutes each, one explaining techniques/ criteria/ detailing for preparing of working drawings while the other shall focus on material specification and bill of quantities usually followed by an interaction with respective faculty who have been guiding them to resolve their projects and have assessed their assignments.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Students are enabled to develop and resolve without compromising their design ideas to match the program requirements and operations.
CO2	Students are enabled to choose the correct system from the wide array of structural, infrastructural, envelope systems along with the appropriate construction material and technique to arrive at a design idea.
CO3	To be able to understand material behavioral properties and be able to take informed design decisions based on theoretical knowledge learnt
CO4	To be able to create a detailed portfolio showcasing all design attributes and detailing for execution purposes

**Rubrics:**

Year of Assessment : 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 100	Exercise 01 & 02: Marks out of	Credits	Date of submission		
3rd yr. 5th Sem	ARD		BARC 507	100		4	Multiple		
<b>Exercise: Title</b>	Working drawings and BOQ report								
<b>Exercise Note / Task</b>	To prepare a basic set of working drawings with BOQ report								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% - 55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Choice and integration of various systems such as structural, envelope, materials and services adopted in context of the site and program.	Innovative & outstanding well-developed systems that integrate with program & context and spatial planning with extremely good detailing.	Outstanding developed systems that integrate with program, context and spatial planning with extremely good detailing	Excellent well-developed systems that integrate with program, context and spatial planning with extremely good detailing	Extremely well-developed systems that integrate with program, context and spatial planning with extremely good detailing	Very Well-developed systems that integrate with program, context and spatial planning with extremely good detailing	Good developed systems that integrate with program, context and spatial planning with extremely good detailing	Fairly good developed systems that integrate with program, context and spatial planning with extremely good detailing	Manages to develop systems that integrates with program, context	Absolutely no clarity of systems, or non-submission
<b>Representation Technique and final submission</b>	Very well formatted presentation of working drawings complete with details and BOQ report	Well formatted presentation of working drawings complete with details and BOQ report	Clear formatted presentation working drawings complete with details and BOQ report	Very good formatted presentation of working drawings complete with details and BOQ report	Good formatted presentation of working drawings with some details and BOQ report	Fairly formatted presentation of working drawings with incomplete details and BOQ report	Barely managed to get working drawings complete with no details and BOQ report	Incomplete set of working drawings BOQ report	Absolutely no clarity of thought and understanding of the applied subjects
<b>Ability to demonstrate the Learnings from the discussions conducted in class</b>	Showcasing 100% ability to translate theoretical knowledge into practice	Showcasing 90% ability to translate theoretical knowledge into practice	Showcasing 80% ability to translate theoretical knowledge into practice	Showcasing 70% ability to translate theoretical knowledge into practice	Showcasing 65% ability to translate theoretical knowledge into practice	Showcasing 60% ability to translate theoretical knowledge into practice	Showcasing 55% ability to translate theoretical knowledge into practice	Showcasing 50% ability to translate theoretical knowledge into practice	Zero understanding and application of theoretical knowledge
<b>Attendance, time management and participation in Studio</b>	Attends 95% of total classes	Attends 90% of total classes	Attends 85 % of total classes	Attends 80% of total classes	Attends 75% of total classes	Attends 70% of total classes	Attends 60% of total classes	Attends 55% of total classes	Attends less than 50% of total classes

**COPO Mapping**

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	Students are enabled to develop and resolve without compromising their design ideas to match the program requirements and operations.	2	1	2	2	2	1	3	2
CO2	Students are enabled to choose the correct system from the wide array of structural, infrastructural, envelope systems along with the appropriate construction material and technique to arrive at a design idea.	2	2	2	0	0	1	3	2
CO3	To be able to understand material behavioral properties and be able to take informed design decisions based on theoretical knowledge learnt	1	2	0	2	2	2	3	2
CO4	To be able to create a detailed portfolio showcasing all design attributes and detailing for execution purposes	0	0	0	0	0	2	2	2

## CO-PO mapped syllabi of B.Arch Course -2021-22 Architectural Theory 3

<b>COURSE CODE</b>	BARC 509	<b>CREDITS</b>	2
<b>COURSE NAME</b>	Theory of Design	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Rohan Shirish	<b>EXAM SCHEME</b>	Internal
<b>CLASS DAY/TIME</b>	Monday (1.20-3.00)	<b>NON-CLASS TIME</b>	-

<b>PEDAGOGIC INTENT</b>	<p><i>The Theory of Design Course at the KRVA is the space for reflection and analysis on fundamental questions concerning architecture to enable self-reflection and critical thinking within students. It is the place for meditation, discussion and debate about language concerning architecture- visual, spatial, verbal as well as written. The attempt is to create a space for conversation about the dialectical relationships between the idea of 'architecture'- a disciplinary question concerned with what the domain of architecture is, what its identity is, and what its responsibilities and ethical role is; and that of the 'self' of the 'architect' - a philosophical / psychological question that is concerned with what the particular skills of this profession are, what its role is and how does this person place herself in the world.</i></p> <p><i>Within the course there is an attempt to challenge the idea that practice and thought are separable - that there can be theory that has no concrete relevance; or that there can be practice that exists outside of thought. The course also looks beyond the tropes of 'styles' that has plagued the writing of architectural theory to investigate ontological foundations of different approaches to architecture. These involve exploring the relationship between form and meaning, of the body and space, of the self of the architect with the 'other', of the dialectical relationship between the analytical and the intuitive, and of the concrete object and the systems within which it exists- the social, economic and political. The course intends to expose students to the concerns / concepts / methods and tools of cultural practices and allow them to analyse them critically with respect to their contexts. The focus of the year is on twentieth century cultural practices and attempts to bridge disciplines through common concerns. Another focus is on unpacking concepts of the contemporary through focusing on ideas of 'Indian modernity'</i></p> <p><i>The Course in the 6th Semester focuses on ideas about architecture and art that emerge around the world in the period from the mid 60s to contemporary times</i></p>
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<b>COURSE METHODOLOGY</b>	This is primarily a lecture and discussion based course. The students are asked to submit a short essay on a topic of their choice.
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WEEK	Lecture	ASSIGNMENTS	MARKING WEIGHTAGE
1	21 June 2021 Dada / Surrealism		
2	28 June 2021 Black Mountain College		
3	5 Jul 2021 Aalto / Kahn		
4	12 Jul 2021 Team X - Brutalism		
5	19 Jul 2021 Team X - Dutch Structuralism		
6	26 Jul 2021 Team X - Participation		
7	2 Aug 2021 Japanese Metabolism		
8	9 Aug 2021 The Situationists		
9	16 Aug 2021 Radical Fun	Initial Draft Submission	25%
10	23 Aug 2021 Architecture without Architects		
11	30 Aug 2021 The Crisis of Meaning - Robert Venturi		
12	6 Sep 2021 The Presence of the Past		
13	13 Sep 2021 The Uses of Tradition		
14	20 Sep 2021 Discussion		
15	27 Sep 2021 Q and A	Written Assignment submission	75%
16	4 Oct 2021 Conclusion		

<b>LEARNING OUTCOMES</b>	To be exposed to the history of ideas in the twentieth century through architecture The ability to critically understand architectural practice within the given cultural and historical context
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### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

## POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

## Course: Architectural Theory 3

Sem 5, Year 3

Course Code: 509

Course Objectives:

- The course intends to introduce students to the ideas and concepts behind and within contemporary architecture.
- It helps them to understand the relationships between spatial, temporal and intellectual contexts and architectural form.
- It exposes them to analytical frameworks and helps them develop critical thinking skills.

**Course Outcomes (CO):** (Maximum number of course outcomes should be 5 and min 3 as per NAAC guidelines, Ethics based etc )

Course Outcome (Co)	Description
CO1	Understanding the relationship between spatial, temporal and intellectual contexts and architectural form
CO2	Understanding readings and ideas from twentieth century thought.
CO3	Applying critical thinking skills to evolve analytical frameworks to read architecture and other cultural artefacts

## Rubrics

Year of Assessment: 2017-2018	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	University Subject	Sessional Marks: 100	Exercise 01	Credits	Date of submission			
Third Year, 5 Semester	Architectural Theory 3	509	50	50	2	27.09.2021			
<b>Exercise: Title</b>	Critical Analysis of a cultural artefact								
<b>Exercise Note / Task</b>	Students will be asked to choose one cultural artefact that they have been exposed to. They will then be asked to evolve a framework and a methodology based on some of the ideas and readings introduced to them in the class. They will then submit a short paper (between 1000-1200 words) that analyses these works.								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% - 55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Analysis of Artefact</b>	Original and Intellectually challenging and relevant framework with insights into the contemporary world, Brilliant analysis of artefact, well written argument. The paper might even challenge analytical frameworks employed	Intellectually challenging understanding of framework with creative Insights and references. Insightful analysis of artefact with relevant references. Well structured argument with insightful references	Excellent understanding of analytical frameworks with relevant references. Well structured argument and analysis.	Good understanding of analytical frameworks with relevant references. A good analysis of the artefact within the chosen frameworks. Well structured argument.	Good understanding of analytical frameworks with relevant references. A clear analysis of the object in a structured argument.	Reasonable, if not quite original analytical framework. However, understanding is clear. The argument is also fine, as is the analysis.	Average analysis of object, that might often verge on the descriptive. The argument is clear but not persuasive.	There is an engagement with the object. However, the analytical framework has been misunderstood and the argument is flawed	No submission
<b>Presentation of Argument</b>	Attends more than 95% of total classes	Attends more than 90% of total classes	Attends more than 85% of total classes	Attends more than 75% of total classes	Attends more than 70% of total classes	Attends more than 65% of total classes	Attends more than 60% of total classes	Attends more than 55% of total classes	Attends less than 50% of total classes

## COPO Mapping Setup for Sem 5

CO-PO mapping									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Understanding the relationship between spatial, temporal and intellectual contexts and architectural form	3	0	0	2	0	2	3	1
CO2	Understanding readings and ideas from twentieth century thought.	1	0	0	2	0	1	3	0
CO3	Applying critical thinking skills to evolve analytical frameworks to read architecture and other cultural artefacts	3	0	0	2	0	2	3	1

1 – Slight (Low) Correlation  
0 – No Correlation

2- Moderate (Medium) Correlation

3- Substantial (high) Correlation



<b>COURSE CODE</b>	BARC 520	<b>CREDITS</b>	2(Hist) + 1(Tectonics) + 1(Extra)
<b>COURSE NAME</b>	College Projects 5	<b>SESSIONAL MARKS</b>	Internal - 100
<b>FACULTY</b>	Ginella George, Sarah George, George Jacob, Swati Seshadri	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Friday / 1.20-3.00 pm, Monday / 9.00-10.40am	<b>NON-CLASS TIME</b>	

Course 1: History

<b>COURSE CODE</b>	BARC 520	<b>CREDITS</b>	2
<b>COURSE NAME</b>	History	<b>SESSIONAL MARKS</b>	Internal - 50
<b>FACULTY</b>	Ginella George, Sarah George	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Friday / 1.20-3.00 pm	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	The fifth semester looks at applying the constellation of ideas, discussed in the earlier four semesters, to trace and write the history of a built object in the city of Mumbai/their place of residence.
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<b>COURSE METHODOLOGY</b>	It is hoped that through the exercise, the student is able to deal with shifting scales in the historiography of the historical object. Faculty will engage with students through lectures and discussions.
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LECT	DATE	TEACHING CONTENT
1	02.07.2021	Introduction History & Culture - Its constructs, keywords etc
2	09.07.2021	Methods of history - The Historical Method
3	16.07.2021	Methods of history - The Ethnographical Method
4	23.07.2021	Methods of history - The Anthropological Method
5	30.07.2021	Building the Map
6	06.08.2021	Scales of reading and Network of relationships - India and the World
7	13.08.2021	Scales of reading and Network of relationships - India and the World
8	20.08.2021	On Writing History
9	27.08.2021	History of the World in 100 objects
10	03.09.2021	Review of Assignment
11	10.09.2021	Review of Assignment
12	17.09.2021	Review of Assignment

<b>LEARNING OUTCOMES</b>	The course aims to enable the student to ingest notions of one's own cultural identity goes beyond the taxonomical method of categorising and describing the physical aspects of the historical object to include the purpose of its making. The emphasis is to understand, analyse and contextualize this information in contemporary times.
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<b>READING LIST/ REFERENCES</b>	<ol style="list-style-type: none"> <li>1. Spiro Kostoff- City Assembled</li> <li>2. AEJ Morris- History of Urban Form</li> <li>3. Norberg-Schulz: Meaning in Western Architecture</li> <li>4. Gunther Binding-High Gothic-Age of Great Cathedrals</li> <li>5. Benedict Taschen-Architecture of the world: Gothic</li> </ol>
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	<ol style="list-style-type: none"> <li>6. Spiro Kostof- History of architecture-Setting and rituals</li> <li>7. Trancthenberg &amp; Hyman- Architecture Prehistory to post-modern</li> <li>8. Margaret Aston-The panorama of the renaissance</li> <li>9. Jordon- Western Architecture</li> <li>10. John Summerson- Classical language of Architecture</li> <li>11. Bannister Fletcher-History of Architecture</li> </ol>
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Course 1: Tectonics

<b>COURSE CODE</b>	BARC 520	<b>CREDITS</b>	1 + 1 Extra
<b>COURSE NAME</b>	Tectonics	<b>SESSIONAL MARKS</b>	Internal - 50
<b>FACULTY</b>	George Jacob Swati Seshadri	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Monday / 9.00 to 10.40 am	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	The manifestation of the architectural object affirms continuity, change and confidence for the present catapulting into the future. The final outcome is the product of various influences playing out or negotiating each other into the finality of the desired object. The development of the expertise in constructively moderating the various influences is key to design thinking and the creation of the architectural object.
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<b>COURSE METHODOLOGY</b>	In order to achieve the expertise on developing a method for designing, it is imperative to conduct a critical reading of selected buildings and the processes employed by these respective architects. These cases will help articulate the outcomes of design decisions due to various influences that are direct and indirect, local and global, ethical and makeshift or functional and decorative. The 16 weeks is proposed to address various themes or situations curated as lectures by faculty through case studies at the global and regional contexts. The students will map and archive their individual design development exercised in the AD Studio, culminating into a compilation at the end of the semester.
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LECT	DATE	TEACHING CONTENT
1	14.06.2021	Yokohoma Port terminal, Tube house
2	21.06.2021	Wall House 2, Institute of Indology
3	28.06.2021	CMRU Admin and Academic block, Holy Redeemer church
4	05.07.2021	Lovell house, South East coastal park
5	12.07.2021	Shroeder house, University of Cincinnati
6	19.07.2021	Health care centre – Flying Elephant, Bharat Bhavan
7	26.07.2021	La Muralla Roja, India International centre
8	02.08.2021	Habitat 67, Floating Theater
9	09.08.2021	House N, Mehsana Dairy board
10	16.08.2021	Chulalongkon University, Sagrada Familia
11	23.08.2021	Stilt house, WALMI Bhopal
12	30.09.2021	Philip Exeter library, House VI
13	06.09.2021	Villa Mairea, Little Island New Yorkj
14	13.09.2021	Willemspark school, Indian Parliament library
15	20.09.2021	Robie House, Mill Owners Association building
16	27.09.2021	Assignment Submission

<b>LEARNING OUTCOMES</b>	<p>Understanding various influences that are direct and indirect, local and global, ethical and makeshift or functional and decorative.</p> <p>Analysing and curating individual design development</p> <p>Exploring components responsible in achieving a holistic architectural building</p> <p>Realizing the kit of parts that are interdependent in the final manifestation</p>
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## CO-PO mapped syllabi of B.Arch Course 2021-2022\_College Projects 5

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delay the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)

6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: College Projects 5**                      **Sem: 5**                      **Third Year**  
**Course Code: BARP 520**

**Course 1: College Projects (History)**                      **Sem: 5**                      **Third Year**

**Course Objectives:**

- To understand architecture as an outcome of socio cultural processes.
- To unpack histories as interpretations rather than as a text.
- To write an architectural history.

**Course 2: College Projects (Tectonics)**                      **Sem: 5**                      **Third Year**

**Course Objectives:**

- To understand architectural form through its tectonic and physical aspects.
- To analyse an architectural object.

**Course Outcomes (CO): (Combined Course outcomes for Tectonic studies and History)**

Course Outcome (Co)	Description
CO1	Creating frameworks to enable the student to deal with the shifting scales in the historiography of the historical object.
CO2	Applying a constellation of ideas, discussed in the earlier four semesters, to trace and write the history of a built object
CO3	Understanding and analysing the built object to dissect architectural history through various spectrums of thoughts and responses.
CO4	Understanding the making of an architectural object through details, material, structure and region
CO5	Analysing the expression of an architectural object in the urban context

**Rubrics 1 (History):**

Year of Assessment: 2021- 2022	SM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	University Subject Code	essional Marks:	xercise : Marks out of	Credits	Date of submission			
<b>HIRD YEAR - SEM 5</b>	<b>College Projects 5 (History)</b>	<b>BARP 520</b>	<b>50</b>	<b>50</b>	<b>2 CP</b>				
<b>Exercise: Title</b>	riting an Architectural History								
<b>Exercise Note / Task</b>	udents will select a structure from their neighbourhood or city and attempt to write a history that goes beyond the information that is available beyond secondary sources. They will have to construct a history based on their engagement with and memory of the object.								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Writing</b>	Extremely articulate in framing the area for inquiry. 2) Very clear structure for presentation. 3) Well researched	Very articulate in framing the area for inquiry. 2) Clear structure for presentation. 3) Well researched	Clear and Articulate in framing the area for inquiry. 2) Well researched structure for presentation.	There is clarity in the area of inquiry 2) Research and structure for presentation is fairly good.	The area of inquiry is fairly good 2) Research and structure for presentation can be better.	The area of inquiry is good 2) Research and structure for presentation is fair.	There is clarity in the area of inquiry 2) Research and structure for presentation is found lacking	There is potential for an area of inquiry but needs more clarity. 2) No research and structure for presentation	Submission
<b>Participation in Studio</b>	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes

**Rubrics 2 (Tectonics):**

USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture									
Year of Assessment: 2021- 2022									
Year & Sem	Subject:	University Subject Code	Sessional Marks:	Exercise : Marks out of	Credits	Date of submission			
<b>THIRD YEAR - SEM 5</b>	<b>College Projects 5 (Tectonics)</b>	<b>BARP 520</b>	<b>50</b>	<b>50</b>	<b>1CP + 1 Extra</b>				
<b>Exercise: Title</b>	Description of a Structure								
<b>Exercise Note / Task</b>	Students to select a structure of their choice and describe the structure in text and diagrams through any four aspects of analysis								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
<b>Writing</b>	1) Extremely articulate in framing the area for inquiry. 2) Very clear structure for presentation. 3) Well researched	1) Very articulate in framing the area for inquiry. 2) Clear structure for presentation. 3) Well researched	1) Clear and Articulate in framing the area for inquiry. 2) Well researched structure for presentation.	1) There is clarity in the area of inquiry 2) Research and structure for presentation is fairly good.	1) The area of inquiry is fairly good 2) Research and structure for presentation can be better.	1) The area of inquiry is good 2) Research and structure for presentation is fair.	1) There is clarity in the area of inquiry 2) Research and structure for presentation is found lacking	1) There is potential for an area of inquiry but needs more clarity. 2) No research and structure for presentation	Non submission
<b>Participation in Studio</b>	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes

COPO Mapping Setup for Sem 5

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Creating frameworks to enable the student to deal with the shifting scales in the historiography of the historical object.	3	1	0	3	0	1	0	2
CO2	Applying a constellation of ideas, discussed in the earlier four semesters, to trace and write the history of a built object	1	2	3	1	0	3	3	3
CO3	Understanding and analysing the built object to dissect architectural history through various spectrums of thoughts and responses.	2	2	2	0	0	3	3	0
CO4	Understanding the making of an architectural object through details, material, structure and region	3	3	3	1	0	3	3	2
CO5	Analysing the expression of an architectural object in the urban context	3	3	3	2	1	3	3	3

1 – Slight (Low) Correlation    2- Moderate (Medium) Correlation    3- Substantial (high) Correlation    0 – No Correlation

# Semester 6

## Scheme of Teaching and Examinations

### Scheme of Teaching and Examinations Bachelor of Architecture (B. Arch.)

#### Semester VI

Semester VI Exam conducted by University of Mumbai		Teaching Scheme		Credits		
Jb. No.	COURSES	Lecture	Studio	Theory	Studio	Total
ARC 601	Architectural Design Studio 6		8		8	8
ARC 602	Allied Design Studio 6		3		3	3
ARC 603	Architectural Building Construction 6	3	3 classes of technology studio	3	1	4
ARC 604	Theory and Design of Structures 6	2		2	1	3
ARC 608	Architectural Building Services 4	2		2	1	3
ARC 605	Humanities 6	3		3		3
ARC 607	Architectural Representation & Detailing 6		6		6	6
ARP 620	College projects 6		3		3	3
ARE 621	Elective 6		3		3	3
	<b>Total</b>	<b>12</b>	<b>24</b>	<b>12</b>	<b>24</b>	<b>36</b>

Semester VI Exam conducted by University of Mumbai		Examination Scheme			
Jb. No.	COURSES	Theory (paper)	Internal	External viva	Total
ARC 601	Architectural Design Studio 6		100	100	200
ARC 602	Allied Design Studio 6		100		100
ARC 603	Architectural Building Construction 6	50	50		100
ARC 604	Theory and Design of Structures 6	50	50		100
ARC 608	Architectural Building Services 4	50	50		100
ARC 605	Humanities 6	50	50		100
ARC 607	Architectural Representation & Detailing 6		100	100	200
ARP 620	College projects 6		100		100
ARE 621	Elective 6		100		100
	<b>Total</b>	<b>200</b>	<b>700</b>	<b>200</b>	<b>1100</b>

# Semester 6

# Semester 6

## Time-Table

	MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY		SATURDAY	
8.00 - 8.50	<b>TECTONIC STUDIES (ARD)</b>		<b>ARCHITECTURAL DESIGN</b>		<b>TECHNOLOGY STUDIO: ARD/ABC/ABS/TOS</b>		<b>ALLIED DESIGN</b>		<b>ARCHITECTURAL DESIGN</b>		<b>THEORY AND DESIGN OF STRUCTURES</b>	
	BARC 607	4 ARD	BARC 601	4 OF 8	BARC 603, BARC 604, BARC 608, BARC 607	3 (1 ABC, 1 TOS, 1 ABS+ 2 ARD)	BARC 602	3 + 1 EXTRA	BARC 601	4 OF 8	BARC 604	2
8.50 - 9.40	GEORGE	SWATI	ROHAN	JUDE	MINNAL	AISNLEY	ANNKUSH	SANDEEP	ROHAN	JUDE	BHARGAV	MILAN
9.40 - 10.30			GEORGE	APURVA P	JIMMY	NNEERAJ	RUTIKA	SWATI	GEORGE	APURVA P		
			SHIHLPA G	VISHAL	DHARMESH	KIMAYA			SHIHLPA G	VISHAL		
10.30 - 11.20				MAYURI	SHANTANU	VIKRAM	SHRUTI	KETAKI		MAYURI		
11.20 - 12.00	LUNCH BREAK											
12.00-12.50			<b>TECHNOLOGY LECTURE (ABC)</b>				<b>HUMANITIES</b>					
			BARC 603	3			BARC 605	3				
12.50 - 1.20	LUNCH BREAK											
1.20 - 2.10	<b>ARCHITECTURE THEORY</b>		JIMMY	NEERAJ	<b>TECHNOLOGY LECTURE (ABS)</b>		HUSSAIN	SHHWETA	<b>HISTORY - HUMANITIES</b>			
	BARP 620	2 CP			BARC 608	2			BARP 520, BARP 620	1 CP+ 1 EXTRA		
2.10 - 3.00	ROHAN	SHIRISH, KARAN			MINAL	SWATI			SANAAYA	RUTIKA, GINELLA		

<b>COURSE CODE</b>	BARC 601	<b>CREDITS</b>	8
<b>COURSE NAME</b>	ARCHITECTURAL DESIGN	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Rohan Jude George Apurva P Quaid Shilpa G Vishal	<b>EXAM SCHEME</b>	100
<b>CLASS DAY/TIME</b>	Tuesday and Friday (8.00-11.20)	<b>NON-CLASS TIME</b>	7 hours

**PEDAGOGIC INTENT**

**Architecture and Memory : Ambedkar**

**Part 1**

**The Ambedkar Project**

The figure of Dr Ambedkar looms large for us today. He represents the ideals upon which the new nation was built. He was not only the chief architect of the constitution, but is also a figure who represented the struggle for the rights of marginalised communities. His story is one of humiliation, struggle, learning and extraordinary achievement- from being the son of an untouchable schoolteacher to being one of the most learned men in the country designing the shape of what it meant to be a modern citizen for all of us. His legacy is enormous and the city of Mumbai was central in that journey. It was a central location for the development of Dr Ambedkar's ideology and political position. It was where he lived for much of his life and the city where he built many of the pioneering institutions that would enable new identity formations for the Dalit community.

These locations around the landscape of the textile mills where Ambedkar lived and practised were steeped in the debates concerning the idea of the nation and the rights of man. Debates raged between different groups in the public realm through the nationalistic movement, the labour movement and the movement for the rights of the depressed classes. The nationalistic movement was trying to create an identity for the new nation that would be amenable to all, often at the cost of leaving the depressed classes at the mercy of the powerful. The labour movement too was often led by upper caste interests. It was in this milieu that Ambedkar fought for the representation and rights of the depressed classes, often in direct confrontation with the government, capitalists as well as the leaders of the nationalistic and labour movements.

At the same time, in the early years of the 20th Century, a new public realm was being created in the city of Mumbai. The Improvement trust was involved in creating a new landscape of modernity by making new roads, reclaiming new lands and creating new residential areas based on modern principles of design. Other institutions of modernity were being built including museums, schools, colleges, hospitals. New technologies of movement like trams and airplanes forced new modes in which urban citizens could interact with each other. There was also a new cultural landscape being made. New forms and narratives were being experimented with in literature, theatre and cinema. All these potentially enabled new formations of identity for the urban citizen and Dalit identity. However, this was far from being a smooth process. While these new phenomena did potentially create the possibility of an emancipatory urban space, they sometimes could also be tools of creating further instruments of segregation.

It was in this milieu that Ambedkar conducted his activities and struggles. The project identifies institutions that were central to his work. In spite of them being central to one of the most important social and political movements in the country, they have largely been forgotten, and have even been destroyed. Reciprocally, political organisations have tried to incorporate Ambedkar into their own agendas. Spectacular monuments have been built to commemorate his legacy. These involve the large state proposed at Shivaji Park in Mumbai, the Ambedkar National Memorial built on the site of his house in Delhi, and the monumental

Ambedkar Memorial Park in Lucknow. Some of the sites that are directly linked to his biography have also been commemorated by Stupas. These include Chaitra Bhoomi in Dadar where his ashes are buried, Deeksha Bhoomi in Nagpur where he converted to Buddhism, and Ambedkar Janmabhoomi in Mhow where he was born. There are also many innumerable smaller shrines and memorials to him across the country. However, two sites that were so central to his legacy in the city of Mumbai have been demolished. The project hopes to address this disregard by suggesting ways in which they could commemorate the figure of Dr Ambedkar and the work that he was involved in. The project will find itself within the three nodes of the Archive, Library and the Museum. The students will have to discover what it would mean to remember through the act of architecture one of the most important shapers of our identity.

**Part 2**

**The Institution**

There are societal structures that have been created to enable the act of speech. Where a society tells itself what it is, and what it wants to be. The Institution is the instrument through which a society consolidates its value system. The architecture of the institution is the tool through which this consolidation is attempted. Institutions are also consolidations of existing power relationships. It is this very nature that often distances them from the communities that they claim to represent. As the world changes around them, they become suspicious and inward looking, seeking solace in tradition and resistant to transformation. A conformism creeps in self-satisfied in its own logic of morality.

How do we then imagine these institutions to change? When any point of entry, any way of seeing is already predetermined as use-ful or use-less, how does one begin to imagine anew- the role of the institution, its form?

Let us examine some of the presumptions embedded in some of the instruments of modernity- the programmes through which we deal with the past, make a relationship with it. - the Archive, the Library and the Museum

**Archive. Library. Museum.**

The Archive is where we collect. Unsure of what will be seen as valuable in the future, we store things that we think might be of value for the generations that follow. These may be what we consider canonical works of our times, or even the residue of our civilisation- fragments are collected and indexed according to analytical grids that we try and make as objective as possible. Yet we all know the futility of this urge for comprehensiveness. We know that no act can fully collect the past or the present into the future. It would require us to accumulate all of time in a container, and all of space- an impossibility. The archive of the world is the world itself. Any archive, is therefore incomplete. The objects within can be framed and reframed into new arguments, that might make new meanings unfurl around them.

The Library is a close relative of the Archive. However, its interface is a little more articulated. As against the almost warehouse-like collection of the Archive, in the Library we deploy instruments of organisation and interfacing with the Archive. Collections are created, organisational systems are constructed that zone out regions of enquiry where we can wander and discover. There is a sense of adventure in a Library. Losing oneself is always contingent upon the depths one chooses to enter into the labyrinth.

The Museum is the storyteller of the triad. Museums make meaning. They structure the ways in which we receive information concerning the past. They place object in a curated relationship with one another. They construct the canonical narrative of the mainstream. The audience is meant to follow and believe in the said narrative.

However, the objects can also begin to claim other narratives. History pluralises. The meanings made within a Museum become slippery and unstable. These histories bring different voices to the forefront. The hegemony of the Museum's voice is displaced. The Museum begins to deconstruct. Its presumptions of knowledge collapse. Multiplicities, ellipses, ambiguities begin to invade it.

Along with this deconstruction, the Library too begins to morph. It asks questions concerning the modes of organisation, the mediums through which we engage with learning. It looks to become more inclusive, maybe even more entertaining.

We pore through the Archive for things that we might have forgotten, left aside in some corner. We also look to expand it. We excavate the past to look for artefacts that were considered marginal or unnecessary. By stretching the boundary of the Archive we reconfigure it, perhaps enabling the writing of new histories.

<b>COURSE METHODOLOGY</b>	<b>Design</b>
	The Sixth Semester Architectural Design Project intends on enabling a conversation with the Past through architecture. The project is interested in the gestural relationship the new intervention wants to make with history. Which history does it choose to write? Whose? And in what way? The programme evolves through a critical examination of the three mandates of the Archive, the Library and the Museum around the historical figure of Dr Ambedkar.
	<b>Sites</b>
	The sites identified are:
	<b>1. Ambedkar Bhavan</b>
	In 1930, Ambedkar purchased land right in the heart of Dadar and built a structure which was established as a press and library to print and disseminate the anti-caste literature. It was also the centre of The People's Improvement Trust, established by Ambedkar in 1944. Later on, Ambedkar Bhavan went on to function as a press along with book stall and meeting halls, rooms and space for events for progressive groups in Mumbai. In 2016, this building was demolished much to the consternation of many in the city. Today, there are a few offices in the campus, but most of the site is empty and is currently being rented out for marriage functions.
	<b>2. Siddharth Vihar Hostel</b>
	On the 8th of July, 1945, Ambedkar started the People's Education Society dedicated to creating facilities and access for the education of Dalits and other "depressed classes", with the aim of providing education. After he passed away, based on his plans, the Siddharth Vihar hostel in Wadala, was established in 1964. Inside the campus of the Dr. B.R. Ambedkar College, this hostel provided accommodation for the students of all PES colleges in the city, many of them migrants from rural Maharashtra, and many of them belonging to the working class or to the scheduled castes. Over the following decades, the hostels became an important centre for Dalit politics in the city, including the establishment of the Dalit Panthers in 1972. However, due to a lack of maintenance the building fell into disrepair and was demolished in 2014. In 2016, the Maharashtra government announced that it is going to rebuild the building. However, there is no sign of any kind of activity currently on the site.

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	23 Nov	Introduction		
	26 Nov	Study of Neighbourhood		
2	30 Nov	Learning Environments		
	3 Dec	Studio		
3	7 Dec	Studio		
	10 Dec	Studio		
4	14 Dec	Concept Jury	Presentations	20%
	17 Dec	Studio		
5	21 Dec	Studio		
	24 Dec	Studio		
6	4 Jan	Studio		
	7 Jan	Studio		
7	11 Jan	Mid Term Jury	Design Development	20%
	18 Jan	Studio		
8	21 Jan	Studio		
	25 Jan	Holiday		
9	28 Jan	Studio		
	1 Feb	Studio		
10	4 Feb	Studio		
	8 Feb	Studio		
11	11 Feb	Studio		

	15 Feb	Pre Final	Resolved Plans and Sections	20%
12	18 Feb	Studio		
	22 Feb	Studio		
13	25 Feb	Studio		
	1 March	Studio		
14	4 March	Studio		
	8 March	Diwali		
15	11 March	Diwali		
	15 March	Studio		
16	26 March	Final Jury	Presentationn Drawings	40%

<b>LEARNING OUTCOMES</b>	<ul style="list-style-type: none"> <li>To enable students to understand programme evolution and institutional structures</li> <li>To enable students to arrive upon architectural ideas that are able to address institutional mandates and urban contexts</li> <li>To enable students ot evolve their own positions and processes towards the design of a building.</li> <li>To enable students to resolve architectural ideas with technical resolution and details.</li> <li>To be able to present and communicate their projects successfully.</li> </ul>
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<b>READING LIST/ REFERENCES</b>	
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## CO-PO mapped syllabi of B.Arch Course -2021-22

### Architectural Design

#### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

#### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to de-layer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

#### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).

4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Design**

**Sem: 6**

**Third Year**

**Course Code: BARC 601**

#### Course Objectives:

- To enable students to understand programme evolution and institutional structures
- To enable students to arrive upon architectural ideas that are able to address institutional mandates and urban contexts
- To enable students to evolve their own positions and processes towards the design of a building.
- To enable students to resolve architectural ideas with technical resolution and details.
- To be able to present and communicate their projects successfully.

#### Course Outcomes (CO):

Course Outcome (Co)	Description
CO1	Understand and evaluate institutional systems and architecture at strengthening and safeguarding the interests of the collective
CO2	Analyse and Apply critical thinking to the design of institutions in a particular context and their architecture
CO3	Create one's own process for the development of the design.
CO4	Create programmatic and spatial strategies for the design of an institutional building that incorporates technical knowledge learned in other courses
CO5	Create and present a well resolved design project

Year of Assessment :	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject: Technical Studio	University Subject Code	Sessional Marks: 100	External Marks	Credits	Date of submission			
3 Year, 6 Semester	Architectural Design	BARC 601	100	100	8	26 March 2020			
Exercise: Title	Ambedkar: Architecture and Memory								
Exercise Note / Task	Final Jury with sheets, models and presentation								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
<b>Attendance and participation in the studio</b>	95% to 100% attendance and extremely participative alongwith taking complete responsibility of the studio assignments	90% to 95% attendance and visibly participative alongwith sharing responsibilities of studio assignments	85% to 90% attendance and visibly participative alongwith sharing responsibilities of studio assignments	75% to 85% attendance and participative alongwith sharing responsibilities of studio assignments	70% to 75% attendance and participative alongwith sharing responsibilities of studio assignments only when asked	65% to 70% attendance and less participative alongwith sharing responsibilities of studio assignments only when asked	55% to 65% attendance and participative in the studio only when asked	50% to 55% attendance and not participative in the studio	Below 50% attendance and mostly absent in the studio
<b>Proactiveness while on the study trip / site visit and pitching in completing the study post the visit.</b>	Extremely active at organizing group work and preparing supreme quality drawings	Moderately extreme active at organizing group work and preparing supreme quality drawings	Less moderately extreme active at organizing group work and preparing supreme quality drawings	Highly moderately active at organizing group work and preparing supreme quality drawings	Just active at organizing group work and preparing moderate quality drawings	Seldom activeness at organizing group work and preparing satisfactory quality drawings	Not organizing group work and preparing satisfactory quality drawings	No active participation in class	Disinterested
<b>Contextualization of the design concept and resolution of building</b>	Par excellence accuracy and at contextualization of the design intent along with exceptional understanding of structure and services	Outstanding performance at contextualization of the design intent with excellent understanding of technology subjects	Greater excellence at contextualization of the design intent, with skilled design prowess including understanding of technological subjects	Excellence of contextualization of the design intent, align with interesting design choices and resolution	Very good accuracy at contextualization of the design intent building design and resolution skills	Good contextualization of the design intent, along with good building design and resolution skills	Fair contextualization of the design intent, average building design and resolution skills	Satisfactorily contextualization of the design intent, with average building design and resolution skills	Below average contextualization and understanding of the design intent, and below average design skills and technical understanding.

COPO Mapping Setup for Sem 5

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	Understand and evaluate institutional systems and architecture at strengthening and safeguarding the interests of the collective	3	0	0	2	3	0	3	0
CO2	Analyse and Apply critical thinking to the design of institutions in a particular context and their architecture	2	2	2	2	0	1	3	0
CO3	Create one’s own process for the development of the design.	0	3	3	0	0	2	1	0
CO4	Create programmatic and spatial strategies for the design of an institutional building that incorporates technical knowledge learned in other	0	3	3	0	0	1	2	0
CO5	Create and present a well resolved design project	0	2	1	0	2	0	0	1

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 602	<b>CREDITS</b>	3 + 1 Extra
<b>COURSE NAME</b>	Landscape Studio (ALLIED DESIGN 6)	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Ankush, Swati S, Sandeep M, Rutika P, Shruti S, Ketaki	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Thursday 8.00 – 11.20 pm	<b>NON-CLASS TIME</b>	-

<b>PEDAGOGIC INTENT</b>	<p>The intent is to train students to engage with the act of design as a response to the interconnected ecological systems of the site and its surroundings.</p> <p>To help the students to become fully versed with the principles of grading to be capable of manipulating ground forms from a design point of view.</p>
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<b>COURSE METHODOLOGY</b>	<p>The Allied Design Studio 6 engages the students to propose interventions at the intersections of ecology and landscape architecture.</p> <p>The initial part of the studio shall focus on equipping students with technical knowledge for understanding grading as a process of modification of existing landforms to accommodate new structures and circulation to ensure optimum functionality. It is a crucial process for the implementation of the designer's idea into a reality during the construction of designed landscapes. It requires a careful modulation of contours so that they support the integration of built with the site.</p> <p>For this part, there would be input lectures and students will be exploring model making as a medium to understand land modulations and surface hydrology and a series of drawings for the terrain analysis that would aid the grading process.</p> <p>The second part of the studio is structured to encourage students to select a 25-acre site in a distinct bio-geography in and around the city of Mumbai to masterplan and design an eco-sensitive. The aim of the project is to inculcate a thorough sensitivity to understanding how human actions are constrained/ limited by the physical environment. The sites selected for the study are in Aarey (City-Forest edge), Gharapuri (Island Biogeography) and Karanja (Coastal community).</p> <p>The students will be working on-site studies in groups, the site characteristics are dictated by the complex interactions of the biotic and the abiotic entities inherent to the site. Observations and analysis based on these would immensely help in the decision-making processes on the planning and design of the site.</p> <p>The students will be introduced to the landscape analysis method for site planning - the 'Layer Cake Model' as proposed by Ian McHarg. Then carefully 'overlayed' in order to identify landscape patterns and suitability.</p>
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	<p>The studio will then allow for a series of explorations that would encourage the students to objectively analyse the biocapacity of the site and propose a landscape architectural set of programmes with a minimal ecological footprint, which can then be detailed out to form a comprehensive landscape development masterplan supplemented by details.</p> <p>There will be various input lectures in weeks of the process to aid students in understanding various aspects of Ecological landscape planning and self-sustaining commune.</p>
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LECT	DATE	TEACHING CONTENT
1	25.11.2021	Introduction of the Assignment and lecture about grading and principles of grading by faculty.
2	02.12.2021	Review and discussion on the principles and methods of grading. Review of First cut explorations.
3	09.12.2021	Discussion on improved explorations and to clarify doubts and resolve issues.
4	16.12.2021	Review of updated Plans, Spatial sketches, and sectional drawings to depict the scenario.
5	23.12.2021	Final review of grading assignment and Introduction to the next assignment (the project and sites)
6	30.12.2021	Christmas Break
7	06.01.2022	Review of further study of sites. Lecture on spatial analysis Tool kit and Ecological site planning.
8	13.01.2022	Site compilation (Maps and extent of analysis and intervention) and review) discussion first cut. Lecture on case study examples of study and representations of analysis.
9	20.01.2022	<b>Final study presentation of sites</b> Lecture on Biocapacity and ecological footprint concept and program development) Start working on program development.
10	27.01.2022	Discussion on - building scenarios and program development. Lecture on Building up a master plan, examples and approaches, and representation.
11	03.02.2022	<b>The final presentation of a program developed</b> and introduction and beginning of a master plan. Lecture on case studies on Systems and approaches
12	10.02.2022	The first cut of the master plan (hand drawn) + discussion
13	17.02.2022	Working session and review
14	24.02.2022	Fixing the master plan and spitting in groups for detailing each quadrant and program. Lecture on Planting Design Techniques and grading techniques

15	03.03.2022	Review of details of each program and design
16	10.03.2022	<b>Prefinal Jury</b>
17	17.03.2022	Working session and review
18	24.03.2022	<b>Final Jury /Presentation/Submission</b>

<b>LEARNING OUTCOMES</b>	<p>To <b>introduce</b> students to ways of seeing and documenting the landscape entities (abiotic +biotic) and the anthropogenic influences and their interdependencies (based on McHarg's Layer cake analysis).</p> <p>To <b>enable</b> students to discern natural processes and their inter-dependencies.</p> <p>To <b>expose</b> the students to ways of intervening in various bio-geographies in a sensitive manner.</p> <p>To help students <b>formulate</b> landscape programs that respond to the users, architectural programs, and site responses.</p>
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<b>READING LIST/ REFERENCES</b>	<p>Design with Nature, Ian L McHarg</p> <p>Toward an Urban Ecology, Kate Orff</p> <p>Digital Drawing for Landscape: Bradley Cantrell</p> <p>Landscape Architecture in India, A Reader: Mohammad Shaheer (Editor), Geeta Wahi Dua (Editor), Adit Pal (Editor)</p> <p>Tracing Narratives: Indian Landscape Design- LEAF, Ahmedabad</p> <p>Landscape Site Grading Principles Grading with Design in Mind – Bruce G. Sharky</p>
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – Allied Design

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective).
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Allied Design**  
**Course Code: BARC 602**

**Sem 6**

**Year Third Year**

**Course Objectives:**

The intent is to train students to engage with the act of design as a response to the interconnected ecological systems of the site and its surroundings. To help the students to become fully versed with the principles of grading to be capable of manipulating ground forms from a design point of view.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To sensitize students to the nuances of open spaces of varied scales from Regional - large scale to small space analysis.
CO2	To apply the principles of grading to be capable of manipulating ground forms from a design point of view.
CO3	To enable students to build connections of the immediate site surroundings to the larger ecological networks and systems with their inter-relationships.
CO4	To expose the students to ways of intervening in various bio-geographies in a sensitive manner.
CO5	To help students formulate landscape programs that respond to the users, architectural programs, and site responses.

**Rubrics:**

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem:	Subject:	University Subject Code	Sessional Marks	Exercise 01 - Marks out of	Credits	Date of submission			
THIRD YEAR - SEM 6	Allied Design	BARC 602	100	100	3 + 1 (extra)				
Exercise: Title	Ecological landscape Planning								
Exercise Note / Task	<p>The exercise is structured to encourage students to select a 25-acre site in a distinct bio-geography in and around the city of Mumbai to masterplan and design an eco-sensitive. The aim of the project is to inculcate a thorough sensitivity to understanding how human actions are constrained/ limited by the physical environment. The sites selected for the study are in Aarey (City-Forest edge), Gharapuri (Island Biogeography) and Karanja (Coastal community).</p> <p>The students will be working on-site studies in groups, the site characteristics are dictated by the complex interactions of the biotic and the abiotic entities inherent to the site. Observations and analysis based on these would immensely help in the decision-making processes on the planning and design of the site. The students will be introduced to the landscape analysis method for site planning -the 'Layer Cake Model' as proposed by Ian McHarg. Then carefully 'overlayed' in order to identify landscape patterns and suitability.</p>								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Attendance and participation	100 to 95% very active presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence
Data Gathering/ monitoring and collating	Showcasing all adopted tools, and frameworks to develop a methodology to critique and analyze the data collected	Showcasing well outstanding insights adopted tools, and frameworks to develop a methodology to critique and analyse the data collected	Showcasing Outstanding insights using tools, and frameworks to develop a methodology to critique and analyse the data collected	Showcasing excellent insights using adopted tools, and frameworks to develop a methodology to critique and analyse the data collected	Showcasing very good insights using adopted tools, and frameworks to develop a methodology to critique and analyse the data collected	Showcasing good insights using adopted tools, and frameworks to develop a methodology to critique and analyse the data collected	Showcasing fair insights using adopted tools, and frameworks to develop a methodology to critique and analyze the data collected	Generic methods of analysis	Not informed process of adaptation of tools and frameworks
Depth of Inquiry and ability to generate analytical drawings	Exceptional analytical drawings and clarity in explaining	Well-curated outstanding analytical drawings and clarity	Very well curated outstanding analytical drawings and clarity	Excellent curation using outstanding analytical drawings	Very Good curation using outstanding analytical drawings	Good curation using outstanding analytical drawings	Fair curation using outstanding analytical drawings	Basic level of inquiry incorporating the minimum	Arbitrary and Adhoc Inquiry

	the concept and design intent	in explaining the concept and design intent	in explaining the concept and design intent	and clarity in explaining the concept and design intent	and clarity in explaining the concept and design intent	and clarity in explaining the concept and design intent	and clarity in explaining the concept and design intent	requirements	
Representation Technique and final submission	Very well-formatted presentation of case studies explaining concepts, the process adopted using diagrams, sketches, and assessment	Well-formatted presentation of case studies explaining concepts, and processes adopted using diagrams, sketches, and assessment	Clear formatted presentation of case studies explaining concepts, processes adopted using diagrams, sketches, and assessment	Very good formatted presentation of case studies explaining concepts, the process adopted using diagrams, sketches, and assessment	Good formatted presentation of case studies explaining concepts, the process adopted using diagrams, sketches, and assessment	Fairly formatted presentation of case studies explaining concepts, the process adopted using diagrams, sketches, and assessment	Barely managed to get clarity of intent and study using poor diagrams and sketches	Less clarity in terms of ideas and processes to be followed	Absolutely no clarity of thought and understanding of the subject

CO-PO mapping									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To sensitize students to the nuances of open spaces of varied scales from Regional - large scale to small space analysis.	3	2	2	0	0	1	3	3
CO2	To apply the principles of grading to be capable of manipulating ground forms from a design point of view.	2	2	2	0	0	0	2	3
CO3	To enable students to build connections of the immediate site surroundings to the larger ecological networks and systems with their inter-relationships.	2	2	1	2	2	2	3	2
CO4	To expose the students to ways of intervening in various bio-geographies in a sensitive manner.	3	3	2	3	2	2	3	3
CO5	To help students formulate landscape programs that respond to the users, architectural programs, and site responses.	3	3	3	2	2	2	3	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC603	<b>CREDITS</b>	3 Lectures + 1 Studio
<b>COURSE NAME</b>	Architectural Building Construction and Materials 6	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Jimmy, Neeraj	<b>EXAM SCHEME</b>	Theory- 50 marks
<b>CLASS DAY/TIME</b>	Tuesday 12:00 PM to 03:00 PM	<b>NON-CLASS TIME</b>	nil

<b>PEDAGOGIC INTENT</b>	The learning curve in the third years is to understand large span construction methods for the Public institution typology whereby all aspects of structure and skin are understood in detail so as the same may help the student in resolution as well as detailing in the Technology studio in the current semester.
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<b>COURSE METHODOLOGY</b>	An hour long traditional lecture with illustrations, followed with minor assignments
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**Lecture**

<b>COURSE CODE</b>	BARC 603	<b>CREDITS</b>	4
<b>COURSE NAME</b>	Architectural Building Construction 6	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Jimmy, Neeraj	<b>EXAM SCHEME</b>	50
<b>CLASS DAY/TIME</b>	Tuesday 12:00 PM to 03:00 PM	<b>NON-CLASS TIME</b>	nil

<b>PEDAGOGIC INTENT</b>	The learning curve in the third years is to understand large span construction methods for the Public institution typology whereby all aspects of structure and skin are understood in detail so as the same may help the student in resolution as well as detailing in the Technology studio in the current semester.
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<b>COURSE METHODOLOGY</b>	An hour long traditional lecture with illustrations, followed with minor assignments
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	23/11/21	Introduction to the topics and schedule of lectures		
2	30/11/21	Precast construction		
3	07/12/21	Pre stressed concrete		
4	14/12/21	Post stressed Concrete	Case study report	
5	21/12/21	Introduction to advanced slab systems		
6	04/01/22	Flat slab systems		
7	11/01/22	Ribbed and waffle slab		
8	18/01/22	Diagrid slab	Case study report	
9	25/01/22	Introduction to shallow foundations - Rafts		
10	01/02/22	Retaining walls		
11	08/02/22	Building skins 1		
12	15/02/22	Building skins 2	Case study report	
13	01/03/22	Building skins 3		
14	08/03/22	Class test		
15	15/02/22	Discussing assessment of class test		

<b>LEARNING OUTCOMES</b>	Student should have derived the ability to resolve structure through innovation, understand the strengths and limitations of the material adopted for structure along with detailing of the skin to help understand design criteria, material application and market practices of the systems adopted in an organised manner.
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<b>READING LIST/ REFERENCES</b>	Building construction Handbook by Chudley & Greeno, Advanced Construction by Barry, Structure and fabric part II by Michelle
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**Studio**

<b>COURSE CODE</b>	BARC -607	<b>CREDITS</b>	6 (2 ARD+1 ABS+1 ABC+1 TOS+4 TECHTONICS)
<b>COURSE NAME</b>	Architectural Representation & Detailing 6	<b>SESSIONAL MARKS</b>	150 (later converted to 100)
<b>FACULTY</b>	Minal. Y, Jamshed B., Ainsley L., Kimaya K., Vikram P., Dharmesh M., Neeraj V., Shantanu K.	<b>EXAM SCHEME</b>	External Viva (sessional)
<b>CLASS DAY/TIME</b>	Wed - 8.00 -12.50 pm	<b>NON-CLASS TIME</b>	4 hrs

	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1 <sup>st</sup> WEEK	24/11/21	Introduction + Lecture on Representation + Design development		
2 <sup>nd</sup> WEEK	1/12/21	Discussion on structural resolution, centre line.		
3 <sup>rd</sup> WEEK	8/12/21	Discussion on structural resolution, centre line. Foundation plan	10 ARD + 10 TOS	Location/Site plan/CL plan
4 <sup>th</sup> WEEK	15/12/21	Review of structural resolution	10 ARD + 10 ABC + 10 TOS	CL plan/Foundation plan
5 <sup>th</sup> WEEK	22/12/21	9-10 lecture - Representation + studio	-----	----
	29/12/21	<b>HOLIDAY</b>		
6 <sup>th</sup> WEEK	5/1/22	Review of Ground floor plans	10 ARD + 10 ABS	Ground Floor plan
7 <sup>th</sup> WEEK	12/1/22	Review of floors plans and roof plan	10 ARD + 10 ABS	Floor plans and roof plan
8 <sup>th</sup> WEEK	19/1/22	Discussion on elevations and sections	-----	-----
	26/1/22	<b>HOLIDAY</b>		
9 <sup>th</sup> WEEK	2/2/22	Review of elevations and sections	20 ARD + 10 TOS + 10 ABS	Section and elevations
10 <sup>th</sup> WK	9/2/22	Review of swap portfolio	20 ARD	SWAP & midterm marking
11 <sup>th</sup> WK	16/2/22	Review on detail (strip wall section)-1	10 ARD + 10 ABC	Strip wall detailed section
12 <sup>th</sup> WK	23/2/22	Review of advanced roof/floor system 2	10 ARD + 10 ABC	Advanced roof/floor sys.
13 <sup>th</sup> WK	2/3/22	Review of toilet details 3	10 ARD + 20 ABS	Toilet detail submission
14 <sup>th</sup> WK	9/3/22	Review of details 4	10 ARD + 10 ABC	Staircase/canopy/ramp
15 <sup>th</sup> WK	16/3/22	Review of Synthesis drawing	30 ARD	Synthesis drawing
			ABS - 50 MARKS	
			ABC - 50 MARKS	
			TOS -30 MARKS	
			ARD - 150	

<b>LEARNING OUTCOMES</b>	A student should be able to resolve his project through a set of well represented working drawings based on the technical knowledge acquired by him over the last two years.
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<b>READING LIST/ REFERENCES</b>	Drawing set of architectural plans, various architects work
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**CO-PO mapped syllabi of B.Arch Course 2021-2022 – Architectural Building Construction and Materials 6**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delay the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort

- zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Building Construction and Materials 6**  
**Course Code: BARC603**

**Sem 6**

**Third Year**

**Course Objectives:**

- Understand the principles and techniques of large span construction methods for public institution typology, with a focus on precast concrete elements, post-stressed, and pre-stressed concrete.
- Gain in-depth knowledge of the design, construction, and detailing aspects of precast concrete elements, including their advantages, limitations, and applications in architectural projects.
- Explore the concepts and practices of post-stressed and pre-stressed concrete, including their structural behavior, design considerations, and the use of specialized materials and systems.
- Study the design and construction of retaining walls, including different types, their functions, and the various methods employed to ensure stability and longevity.
- Develop a comprehensive understanding of raft foundations, including their design principles, construction techniques, and their role in supporting large span structures.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To apply analytical skills to design and analyze framed structures, incorporating both RCC and MS steel elements.
CO2	To critically evaluate and optimize the structural and detailing aspects of framed structures, considering the interplay between architectural aesthetics, functionality, and construction feasibility.
CO3	To develop the ability to resolve large span construction, utilizing precast elements and considering post-stressed and pre-stressed concrete techniques, retaining wall systems, and raft foundations.
CO4	To address ethical considerations related to the use of construction materials and techniques in large span architectural design, taking into account sustainability, environmental impact, and societal well-being.



**Rubrics:**

USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture										
Year of Assessment : 2021-2022	Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks	Exercise 01: Marks out of	Credits	Date of submission	Upgrade 01	Upgrade 02
	THIRD YEAR - SEM 6	ABCM6	BARC 603	603	50	50	4	Multiple		
	Exercise: Title	Structural resolution of Architectural Building construction and material from Sem 6								
	Exercise Note / Task	Portfolio submission by students								
	Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
	Grade	O++	O+	O	A	B	C	D	E	F
	Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% -40%
	Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation										
	Depth of Inquiry and ability to generate analytical drawings	Exceptional analytical drawings and clarity in explaining the concept and architectural design intent	Well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Excellent curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
	Data Gathering/ monitoring and collating	Showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing well outstanding insights adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing Outstanding insights using tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Generic methods of analysis	Not informed process of adaptation of tools and frameworks

	Representation Technique and final submission	Very well formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Well formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Clear formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Very good formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Good formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Fairly formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Barely managed to get clarity of intent and study using poor diagrams and sketches	Less clarity in terms of ideas and processes to be followed	Absolute no clarity of thought and understanding of the subject
	Ability to demonstrate the Learnings from the discussions conducted in class	Showcasing 100% ability to translate theoretical knowledge into practice	Showcasing 90% ability to translate theoretical knowledge into practice	Showcasing 80% ability to translate theoretical knowledge into practice	Showcasing 70% ability to translate theoretical knowledge into practice	Showcasing 65% ability to translate theoretical knowledge into practice	Showcasing 60% ability to translate theoretical knowledge into practice	Showcasing 55% ability to translate theoretical knowledge into practice	Showcasing 50% ability to translate theoretical knowledge into practice	Zero understanding and application of theoretical knowledge
	Attendance and participation in the discussions	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence

CO-PO mapping for a course of “UG program” Architectural Building Construction and Materials 6									
Sr. No.	CO description	PO 1	PO 2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To apply analytical skills to design and analyze framed structures, incorporating both RCC and MS steel elements.	2	1	1	0	0	1	3	0
CO2	To critically evaluate and optimize the structural and detailing aspects of framed structures, considering the interplay between architectural aesthetics, functionality, and construction feasibility.	1	2	3	0	0	3	2	1
CO3	To develop the ability to resolve large span construction, utilizing precast elements and considering post-stressed and pre-stressed concrete techniques, retaining wall systems, and raft foundations.	3	0	2	0	2	1	3	1
CO4	To address ethical considerations related to the use of construction materials and techniques in large span architectural design, taking into account sustainability, environmental impact, and societal well-being.	1	0	0	3	2	2	0	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
0 – No Correlation

<b>COURSE CODE</b>	BARC 604	<b>CREDITS</b>	3 (2 TOS + 1 Technology Studio)
<b>COURSE NAME</b>	Theory & Design of Structures 6	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Bhargav Kolapkar, Milan	<b>EXAM SCHEME</b>	Theory - 50 Marks
<b>CLASS DAY/TIME</b>	Saturday, 08:00 am to 11:20 am	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	To develop solid background on the principles of structural design with emphasis on concepts in analysis and hands-on RCC design at element and structure level and to develop an understanding of real-world RCC design challenges.
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<b>COURSE METHODOLOGY</b>	Interactive lectures with audio-visual aids and case-studies aimed at stimulating students to think, ask questions and pursue practical solutions to design problems. Proactive learning through customized assignments.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	08/01/2022	Basic design concepts, limit states method of design, behaviour of RC beams in flexure	-	4
2	15/01/2022	Design of RC beams for flexure	-	10
3	22/01/2022	Design of RC beams for flexure	-	
4	29/01/2022	Design of RC beams for flexure, behaviour and design of RC slabs	Assignment 1	6
5	05/02/2022	Theory of flat plates, flat slabs and its comparison with conventional beam supported slabs	Test 1	6
6	12/02/2022	Theory of flat plates, flat slabs and its comparison with conventional beam supported slabs	-	
7	19/02/2022	Design of RC Columns	Test 2	10
8	26/02/2022	Design of RC Columns	Assignment 2	
9	12/03/2022	Basics and design of RC footings	Test 3	10
10	19/03/2022	Basics and design of RC footings	Assignment 3	
11	26/03/2022	Pre-cast concrete	-	4
12	02/04/2022	Steel-concrete composite construction	Test 4	
13	09/04/2022	Concrete technology	-	10
14	16/04/2022	Concrete technology	-	
15	23/04/2022	Concrete technology	Test 5	

<b>LEARNING OUTCOMES</b>	By the end of this course, students are expected to know the basics of concrete technology, understand the behaviour of various members in a RCC structure and work out their preliminary sizes, understand the fundamentals of RCC element design, and know the suitability and applications of various slab systems.
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<b>READING LIST/ REFERENCES</b>	<i>Reinforced Concrete Design</i> by S. Pillai and D. Menon, <i>Reinforced Concrete: Mechanics and Design</i> by J. Wight, J. MacGregor
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – *Theory and Design of Structures 6*

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delay the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### s for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course:** Theory and Design of Structures 6  
**Course Code:** BARC 604

**Sem 6**

**Name - 3rd Year**

**Course Objectives:**

- To develop a sound understanding of the principles of RCC design with emphasis on design at the member level using a fusion of theoretical concepts and practical design examples.
- To encourage and enable students to use RCC members and systems in their design projects.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Introduction to concrete as a structural material, its inherent properties, advantages, shortcomings and its relevance to architecture
CO2	Develop an intuitive understanding of grid floor and floor slabs and transfer of load in the system
CO3	Understand the behavior of typical members in an RCC structural elements with emphasis on making structural drawings and good structural planning.
CO4	Develop a perspective on the importance of technical knowledge and its application with respect to the role of an architect as a professional.

**Rubrics:**

Year of Assessment: 2021-2022		USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture							
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 100	Exercise 01 & 02: Marks out of	Credits	Date of submission		
THIRD YEAR - SEM 6	Theory and Design of Structures 6	BARC 604	BARC 604	50	50	3			
<b>Exercise: Title</b>	Case study on use of RCC as structural members								
<b>Exercise Note / Task</b>	Assignment +Test								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Data Gathering/ monitoring and collating</b>	All data to be collected from reliable sources with references included in the reports. Exceptional in showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected.	All data to be collected from reliable sources with references included in the reports. Showcasing well outstanding insights adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing Outstanding insights using tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with most references included in the reports. Showcasing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Data collected is from adequate sources with most references included in the reports. Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Data collected is from adequate sources with most references included in the reports. Showcasing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Generic methods of analysis	Not informed process of adaptation of tools and frameworks
<b>Depth of Inquiry and ability to generate analytical drawings</b>	Exceptional analytical drawings and clarity in explaining the concept and architectural design intent	Well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Excellent curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
<b>In-depth understanding a theory and its application in the architectural field</b>	Exceptional analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Well curated outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Very well curated outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Excellent curation using outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation.	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent.	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent.	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
<b>Representation Technique and final submission</b>	Very well formatted presentation explaining concepts, process adopted using	Well formatted presentation explaining concepts, process adopted using	Clear formatted presentation explaining concepts, process adopted using	Very good formatted presentation explaining concepts, process adopted using	Good formatted presentation explaining concepts, process adopted using	Fairly formatted presentation explaining concepts, process adopted using	Barely managed to get clarity of intent and study using poor diagrams and sketches	Less clarity in terms of ideas and processes to be followed	Absolute no clarity of thought and understanding of the subject

	various tools and techniques	various tools and techniques	various tools and techniques	various tools and techniques	various tools and techniques	various tools and techniques			
<b>Ability to demonstrate the Learnings from the discussions conducted in class</b>	Showcasing 100% ability to translate theoretical knowledge into practice	Showcasing 90% ability to translate theoretical knowledge into practice	Showcasing 80% ability to translate theoretical knowledge into practice	Showcasing 70% ability to translate theoretical knowledge into practice	Showcasing 65% ability to translate theoretical knowledge into practice	Showcasing 60% ability to translate theoretical knowledge into practice	Showcasing 55% ability to translate theoretical knowledge into practice	Showcasing 50% ability to translate theoretical knowledge into practice	Zero understanding and application of theoretical knowledge
<b>Attendance and participation in the discussions</b>	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence

COPO Mapping Setup for Sem 6

CO-PO mapping for a course of “Theory and Design of Structures 6”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Introduction to concrete as a structural material, its inherent properties, advantages, shortcomings and its relevance to architecture	2	1	1	3	2	0	0	1
CO2	Develop an intuitive understanding of grid floor and floor slabs and transfer of load in the system	2	3	2	3	1	0	0	1
CO3	Understand the behavior of typical members in an RCC structural elements with emphasis on making structural drawings and good structural planning.	3	3	3	2	2	0	2	1
CO4	Develop a perspective on the importance of technical knowledge and its application with respect to the role of an architect as a professional.	3	2	3	2	3	1	2	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 608	<b>CREDITS</b>	3 (2 Lectures + 1 Studio)
<b>COURSE NAME</b>	Architectural Building Services 4	<b>SESSIONAL MARKS</b>	Internal sessional marks - 50
<b>FACULTY</b>	Minal Yerramshetty, Swati Seshadari	<b>EXAM SCHEME</b>	50 marks Theory paper
<b>CLASS DAY/TIME</b>	Wednesday - 1.20-3.00	<b>NON-CLASS TIME</b>	3 hours

<b>PEDAGOGIC INTENT</b>	This semester deals with concerns of safety and mobility within a building. The semester deals with safety from the fire and all the systems associated with it. The intent of the course is to enable inherent understanding of safety parameters like planning escape routes, light and ventilation, detection systems, alarm systems, information systems, escape systems and finally firefighting systems in the building. The firefighting system for high rise buildings and the advanced water supply system required for the same is also covered in this semester. Easy mobility within a building in normal as well as during emergencies is discussed in detail.
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<b>COURSE METHODS</b>	Theory lectures with the help of audio-visual medium, case studies and discussion and debates
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**Lectures**

<b>COURSE CODE</b>	BARC 608	<b>CREDITS</b>	3 (2 Lectures + 1 Studio)
<b>COURSE NAME</b>	Architectural Building Services 4	<b>SESSIONAL MARKS</b>	Internal sessional marks - 50
<b>FACULTY</b>	Minal Yerramshetty, Swati Seshadari	<b>EXAM SCHEME</b>	50 marks Theory paper
<b>CLASS DAY/TIME</b>	Wednesday - 1.20-3.00	<b>NON-CLASS TIME</b>	3 hours

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	24/11/2021	Introduction to the semester. Introduction of Fire Safety measures in buildings. Types of fires, fire safety factors taken care in building at planning level as active and passive measures. Fire byelaws in India, NBC fire components in building.	--	
2	1/12/2021	Fire escapes routes - staircases, lifts, chutes. Firefighting system like wet riser, dry riser, wet riser cum down comer	--	
3	8/12/21	Sprinkler system, Firefighting gas systems such as powdered CO <sub>2</sub> system, inert gas system,	--	
4	15/12/21	Fire detection system-hooters, detection devices such as sensors, telecommunication systems,	--	
5	22/12/21	Case studies/discussions of high-rise building	--	
	29/12/21	HOLIDAY - WINTER BREAK		
6	5/1/22	Case studies/discussions of high-rise building	--	
7	12/1/22	Architectural representation	--	
8	19/1/22	water supply for high rise building	--	
9	26/1/22	Public toilet revision as well as discussion from STUDIO viewpoint	--	
10	2/2/22	Site planning strategy for the TECH project-discussion	--	
11	9/2/22	Site planning strategy for the TECH project-discussion	--	
12	16/2/22	Site planning strategy for the TECH project-discussion	--	
13	23/2/22	Mobility - Elevators	--	
14	07/3/22	Escalators and moving belts	--	
15	14/3/22	Revision	--	
16	21/3/22		--	

<b>LEARNING OUTCOMES</b>	The students would be able to design buildings with fire safety norms. The intent is to help students to internalize the safety and mobility concepts in the building including the understanding and incorporating state as well as national byelaws for safety.
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**Studio**

<b>COURSE CODE</b>	BARC -608	<b>CREDITS</b>	6 (2 ARD+1 ABS+1 ABC+1 TOS+4 TECHTONICS)
<b>COURSE NAME</b>	Architectural Building Services 4	<b>SESSIONAL MARKS</b>	150 (later converted to 100)

<b>FACULTY</b>	Minal. Y. Jamshed B., Ainsley L., Kimaya K., Vikram P., Dharmesh M., Neeraj V., Shantanu K.	<b>EXAM SCHEME</b>	External Viva (sessional)
<b>CLASS DAY/TIME</b>	Wed - 8.00 -12.50 pm	<b>NON-CLASS TIME</b>	4 hrs

	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1 <sup>st</sup> WEEK	24/11/21	Introduction + Lecture on Representation + Design development		
2 <sup>nd</sup> WEEK	1/12/21	Discussion on structural resolution, centre line.		
3 <sup>rd</sup> WEEK	8/12/21	Discussion on structural resolution, centre line. Foundation plan	10 ARD + 10 TOS	Location/Site plan/CL plan
4 <sup>th</sup> WEEK	15/12/21	Review of structural resolution	10 ARD + 10 ABC + 10 TOS	CL plan/Foundation plan
5 <sup>th</sup> WEEK	22/12/21	9-10 lecture - Representation + studio	-----	----
	29/12/21	HOLIDAY		
6 <sup>th</sup> WEEK	5/1/22	Review of Ground floor plans	10 ARD + 10 ABS	Ground Floor plan
7 <sup>th</sup> WEEK	12/1/22	Review of floors plans and roof plan	10 ARD + 10 ABS	Floor plans and roof plan
8 <sup>th</sup> WEEK	19/1/22	Discussion on elevations and sections	-----	-----
	26/1/22	HOLIDAY		
9 <sup>th</sup> WEEK	2/2/22	Review of elevations and sections	20 ARD + 10 TOS + 10 ABS	Section and elevations
10 <sup>th</sup> WK	9/2/22	Review of swap portfolio	20 ARD	SWAP & midterm marking
11 <sup>th</sup> WK	16/2/22	Review on detail (strip wall section)-1	10 ARD + 10 ABC	Strip wall detailed section
12 <sup>th</sup> WK	23/2/22	Review of advanced roof/floor system 2	10 ARD + 10 ABC	Advanced roof/floor sys.
13 <sup>th</sup> WK	2/3/22	Review of toilet details 3	10 ARD + 20 ABS	Toilet detail submission
14 <sup>th</sup> WK	9/3/22	Review of details 4	10 ARD + 10 ABC	Staircase/canopy/ramp
15 <sup>th</sup> WK	16/3/22	Review of Synthesis drawing	30 ARD	Synthesis drawing
			ABS - 50 MARKS	
			ABC - 50 MARKS	
			TOS -30 MARKS	
			ARD - 150	

<b>LEARNING OUTCOMES</b>	A student should be able to resolve his project through a set of well represented working drawings based on the technical knowledge acquired by him over the last two years.
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<b>READING LIST/ REFERENCES</b>	Drawing set of architectural plans, various architects works
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**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorize and conceptualize ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project.
6. To enable the student to observe, experience, analyze space, its physicality, and its associations through the body.
7. To enable the student to extract the abstract from the experiential and center it as the basis of design.
8. To enable the student to break the boundary between abstract thought and material realities.
9. To enable students to discover multiple methods and tools to develop their own process of learning.
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive ways of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that can navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own

comfort zones. (Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Building Services 4**

**Course Code: BARC 608**

**Sem 6**

**Third Year**

**Course Objectives:**

The Architectural Building Services course in this semester intends to develop the concept of safety and security, stability and mobility within a building.

This course enables the students to explore and understand relevant architectural design elements and principles that aids in hazard mitigation.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To enable students to understand the components and workability of passive as well as active fire systems within a building.
CO2	To make students explore the infrastructural systems integrated in vertical movement and further realize the relevance of mobility in architectural design, using a case study based approach.
CO3	To understand the advanced scientific and technical as well as sustainable know-how of water supply systems in high-rises.

Rubrics

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks:	Exercise 01 & 02: Marks out of	Credits	Date of submission		
THIRD YEAR - SEM 6	Arch. Building services		BARC 608	50		3	Multiple		
Exercise: Title	Fire Safety planning for their AD project								
Exercise Note/task	Preparation of detailed working drawings of Public toilet with other necessary site services								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Understanding of systems and their integration with other systems as well as with space</b>	1)Complete understanding of systems 2) its integration with other system 3) its hierarchy in planned space	1)Very good understanding of systems 2) its integration with others and its position in planned space.	Good understanding of systems and its integration and its position in planned space.	Fairly good understanding of systems and its integration and its position in planned space.	1)Understanding of a system is seen along with other systems 2) lacking spatial integration.	1)Lesser understanding of the system is seen along with other systems 2) lacking spatial integration.	1)Poor understanding of the system. 2)No understanding of integration with other systems.	Extremely poor understanding of the system.	Non-Submission
	<b>Representation Technique and final submission</b>	Logical and semantic representation	Logical representation	Good representation in all aspect	Good representation in all aspect	Fairly represented in all aspect	The drawings could be understood	Representation needed clarification	Drawings not clear enough
<b>Attendance, time management and participation in Studio</b>	Attends 95% of total classes	Attends 90% of total classes	Attends 85 % of total classes	Attends 80% of total classes	Attends 75% of total classes	Attends 70% of total classes	Attends 60% of total classes	Attends 55% of total classes	Attends less than 50% of total classes

CO-PO MAPPING

CO-PO mapping for a course of “UG program”										
S.N.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	
CO1	To enable students to understand the components and workability of passive as well as active fire systems within a building.	0	2	2	1	2	1	2	3	0
CO2	To make students explore the infrastructural systems integrated in vertical movement and further realize the relevance of mobility in architectural design, using a case study-based approach.	3	2	0	0	2	1	2	3	3
CO3	To understand the advanced scientific and technical as well as sustainable know-how of water supply systems in high-rises.	0	0	2	2	2	1	2	3	0



**CO-PO mapped syllabi of B.Arch Course 2021-2022 – HUMANITIES SEM 6**

<b>COURSE CODE</b>	BARC 605	<b>CREDITS</b>	3
<b>COURSE NAME</b>	HUMANITIES	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Hussain, Shweta	<b>EXAM SCHEME</b>	50 MARKS WRITTEN PAPER
<b>CLASS DAY / TIME</b>	Thursday 12pm	<b>NON-CLASS TIME</b>	2 hours

<b>COURSE DESCRIPTION</b>	The third year humanities course intends to shift inquiry from built space to the process of its production - to grasp the contested nature of spatial processes. The city of Mumbai will be the main object of investigation. In the sixth semester we will explore the social history of the late colonial and post-colonial period of Mumbai city-region.
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<b>PEDAGOGIC INTENT / LEARNING OBJECTIVES</b>	<p>1) An introduction to Mumbai's growth and transformation through a social-history perspective. The course will provide a critical-historical framework to explore the social and spatial evolution of Mumbai region (MMR), with an emphasis on the highly contested process of spatial production, and the centrality of relations of power and politics in shaping the city.</p> <p>2) A historical overview of the city's physical and demographic growth, economic and social geography, institutional-administrative structure, and urban planning and development policy.</p> <p>3) A critical overview of the processes of urbanization, migration, industrialization – and public policy responses in the form of regional planning, environment conservation, heritage conservation, and policies for public housing, infrastructure and services.</p>
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<b>COURSE METHODOLOGY</b>	The course will be a weekly lecture and discussion seminar, of 2 hours per session. The course is designed as a series of threads or stories about the city, through which the students will be introduced to its various institutions, interest groups, significant events, and spatial developments. The stories will be narrated through lectures, readings and films, and occasionally students will be expected to make presentations.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS
1	25 <sup>th</sup> Nov	Introduction: the method of social history	
2	2 <sup>nd</sup> Dec	<b>Sewers:</b> caste, class and segregation	
3	9 <sup>th</sup> Dec		
4	16 <sup>th</sup> Dec	<b>Boundaries:</b> political geography of the Mumbai region	
5	23 <sup>rd</sup> Dec		
6	6 <sup>th</sup> Jan	<b>Migration:</b> scrambling in a city of dreams	
7	13 <sup>th</sup> Jan		
8	20 <sup>th</sup> Jan	<b>Riots:</b> wages of violence	
9	27 <sup>th</sup> Jan		
10	3 <sup>rd</sup> Feb	<b>Congestion:</b> the unending struggle for space and time	
11	10 <sup>th</sup> Feb		
12	17 <sup>th</sup> Feb	<b>Mega-projects:</b> (dis)connecting people and places	
13	24 <sup>th</sup> Feb		
14	3 <sup>rd</sup> Mar	Concluding Seminar	

<b>EVALUATION CRITERIA</b>	The main assignment will be a 1500 word article that students will develop through the course by identifying one of the threads explored during the 13 weeks. This will be given 75% of the weight. Class participation will be given 25% of the grade.
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**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. (Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Humanities**  
**Course Code: BARC605**  
**Sem 6**

**Course Objectives:**

- 1) An introduction to Mumbai’s growth and transformation through a social-history perspective.
- 2) A critical overview of the processes of urbanization, migration, industrialization
- 3) Understanding Mumbai’s evolution through regional planning practice, environment conservation, heritage conservation, and policies for public housing, infrastructure and services.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Students will be introduced to Mumbai’s growth and transformation through a social-history perspective.
CO2	Students will be provided a critical overview of the processes of urbanization, migration, industrialization
CO3	Students will be introduced to Mumbai’s regional planning practice, environment conservation, heritage conservation, and policies for public housing, infrastructure and services.

**Rubrics:**

Year of Assessment: 2021-22	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks:	Exercise 01 : Marks out of	Credits	Date of submission		
SECOND YEAR - SEM 3	Hum	BARC605		50	50				
Exercise: Title	Class case study presentations								
Exercise Note / Task	Present a case-study in groups in an audio-visual format								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
(A) Interpretation of Case Study	Excellent understanding of the case, ability to identify the determinants and explain them lucidly, is able to connect the case to contemporary examples	Very good understanding of the case, ability to identify the determinants and explain them well, is able to connect the case to contemporary examples	good understanding of the case, ability to identify the determinants and explain them competently	good understanding of the case, ability to identify the determinants and explain them adequately	A fair understanding of the case, ability to identify the determinants and explain them adequately	A fair understanding of the case, ability to identify the determinants	An minimal understanding of the case, somewhat able to identify determinants	An minimal understanding of the case,	Little or no understanding of the case
(B) Presentation Quality as a whole	Outstanding organization of the presentation, exceptionally clear presentation combined with creative use of visual aids	Exceptionally well structured, exceptionally clear presentation combined with creative use of visual aids	Well structured, exceptionally clear presentation combined with good use of visual aids	Very Clear presentation, combined with good use of visual aids	Well organized presentation, combined with competent use of visual aids	Manage to convey the ideas adequately	Some difficulty in expressing ideas, acceptable	Difficulty in explaining	poorly constructed and unable to convey ideas
(C) Participation and conduct in class	90% attendance or more, active participation in class and excellent conduct overall	90% attendance or more, good participation in class and very good conduct overall	80% - 90% attendance, active participation in class and excellent conduct overall	80% - 90% attendance, good participation in class and very good conduct overall	70% - 80% attendance, active participation in class and excellent conduct overall	70% - 80% attendance, good participation in class and very good conduct overall	50% - 70% attendance	50% - 70% attendance	50% attendance or less

CO-PO mapping Humanities Sem 6									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Students will be introduced to Mumbai's growth and transformation through a social-history perspective.	3	2	1	2	2	3	3	2
CO2	Students will be provided a critical overview of the processes of urbanization, migration, industrialization	3	1	0	3	2	3	3	2
CO3	Students will be introduced to Mumbai's regional planning practice, environment conservation, heritage conservation, and policies for public housing, infrastructure and services.	2	0	0	2	2	2	3	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC -607	<b>CREDITS</b>	6 (2 ARD+1 ABS+1 ABC+1 TOS+4 TECHTONICS)
<b>COURSE NAME</b>	Architectural Representation & Detailing 6	<b>SESSIONAL MARKS</b>	150 (later converted to 100)
<b>FACULTY</b>	Minal. Y, Jamshed B., Ainsley L., Kimaya K., Vikram P., Dharmesh M., Neeraj V., Shantanu K.	<b>EXAM SCHEME</b>	External Viva (sessional)
<b>CLASS DAY/TIME</b>	Wed - 8.00 -12.50 pm	<b>NON-CLASS TIME</b>	4 hrs

<b>PEDAGOGIC INTENT</b>	The subject is an attempt to bring about a detailed resolution of design through technical representation of acquired knowledge of construction, services, building material and computing thereby leading to preparation of a fine set of working drawings, very relevant for good practice
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<b>COURSE METHODS</b>	It's a working studio and one to one interaction with respective faculty who have been assigned to guide them to resolve their projects.
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**ARD STUDIO 1**

<b>COURSE CODE</b>	BARC -607	<b>CREDITS</b>	6 (2 ARD+1 ABS+1 ABC+1 TOS+4 TECHTONICS)
<b>COURSE NAME</b>	Architectural Representation & Detailing 6	<b>SESSIONAL MARKS</b>	150 (later converted to 100)
<b>FACULTY</b>	Minal. Y, Jamshed B., Ainsley L., Kimaya K., Vikram P., Dharmesh M., Neeraj V., Shantanu K.	<b>EXAM SCHEME</b>	External Viva (sessional)
<b>CLASS DAY/TIME</b>	Wed - 8.00 -12.50 pm	<b>NON-CLASS TIME</b>	4 hrs

	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1 <sup>st</sup> WEEK	24/11/21	Introduction + Lecture on Representation + Design development		
2 <sup>nd</sup> WEEK	1/12/21	Discussion on structural resolution, centre line.		
3 <sup>rd</sup> WEEK	8/12/21	Discussion on structural resolution, centre line. Foundation plan	10 ARD + 10 TOS	Location/Site plan/CL plan
4 <sup>th</sup> WEEK	15/12/21	Review of structural resolution	10 ARD + 10 ABC + 10 TOS	CL plan/Foundation plan
5 <sup>TH</sup> WEEK	22/12/21	9-10 lecture - Representation + studio	-----	----
	29/12/21	<b>HOLIDAY</b>		
6 <sup>TH</sup> WEEK	5/1/22	Review of Ground floor plans	10 ARD + 10 ABS	Ground Floor plan
7 <sup>TH</sup> WEEK	12/1/22	Review of floors plans and roof plan	10 ARD + 10 ABS	Floor plans and roof plan
8 <sup>TH</sup> WEEK	19/1/22	Discussion on elevations and sections	-----	-----
	26/1/22	<b>HOLIDAY</b>		
9 <sup>TH</sup> WEEK	2/2/22	Review of elevations and sections	20 ARD + 10 TOS + 10 ABS	Section and elevations
10 <sup>TH</sup> WK	9/2/22	Review of swap portfolio	20 ARD	SWAP & midterm marking
11 <sup>TH</sup> WK	16/2/22	Review on detail (strip wall section)-1	10 ARD + 10 ABC	Strip wall detailed section

12 <sup>TH</sup> WK	23/2/22	Review of advanced roof/floor system 2	10 ARD + 10 ABC	Advanced roof/floor sys.
13 <sup>TH</sup> WK	2/3/22	Review of toilet details 3	10 ARD + 20 ABS	Toilet detail submission
14 <sup>TH</sup> WK	9/3/22	Review of details 4	10 ARD + 10 ABC	Staircase/canopy/ramp
15 <sup>TH</sup> WK	16/3/22	Review of Synthesis drawing	30 ARD	Synthesis drawing
			ABS - 50 MARKS	
			ABC - 50 MARKS	
			TOS - 30 MARKS	
			ARD - 150	

<b>LEARNING OUTCOMES</b>	A student should be able to resolve his project through a set of well represented working drawings based on the technical knowledge acquired by him over the last two years.
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<b>READING LIST/ REFERENCES</b>	Drawing set of architectural plans, various architects work
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**ARD STUDIO 2**

<b>COURSE CODE</b>	BARC 607	<b>CREDITS</b>	4 (ARD)
<b>COURSE NAME</b>	TECTONICS STUDIES	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	GEORGE JACOB, SWATI SESHADRI	<b>EXAM SCHEME</b>	INTERNAL
<b>CLASS DAY/TIME</b>	MONDAY / 8:00AM TO 09:40AM	<b>NON-CLASS TIME</b>	

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	November 22	Casa Mila - Antonio Gaudi Taru Tahiliani Design HQ - Stephen Paumier		
2	November 29	TCS Office Hyderabad - Mario Bota Berkowitz-Odgis House / Steven Holl		
3	December 6	Oscar Nieyemer house / brazil Maison de Verre		
4	December 13	Thermal Vals - Peter Zumthor Indian Coffee - Laurie Baker		
5	December 20	Henderson CIFI Tiandi Shanghai - Jean Nouvel Concrete Void Factory - Sameep Padora		
6	December 27	Winter Break		
7	January 3	Steilneset Memorial - Peter Zumthor		
8	January 10	Seinajoki Library - Alvar Alto		

		Kovalam Beach Resort - Charles Correa
9	January 17	Guggenheim Museum - FLW Y House - Steven Holl
10	January 24	IHA Residence - Wallmakers Rokko Housing - Tadao Ando
11	January 31	Gadi House / PMA madhushala Sanskar kendra, Ahmedabad - Le Corbusier
12	February 7	IIFM Bhopal - Anant Raje Espacio De Tenerife La Artes (TEA) - Herzog De Meuron
13	February 14	Studio Compilation and discussion with faculty
14	February 21	Chulalongkorn University, Apartment at Canbrils - Gualart
15	February 28	Indian Parliament Library - Raj Rewal, Fatehpur Sikri
16	March 7	Wenchuan Earthquake Memorial - Faculty of Tongji University China, Sarkhej Roza - Ahmedabad
	March 14	Submission of Compilation
	March 21	Review and discussion

<b>LEARNING OUTCOMES</b>	<ul style="list-style-type: none"> <li>To help tackle and work with various influences that are direct and indirect, local and global, ethical and makeshift or functional and decorative.</li> <li>To curate individual design development</li> <li>To explore components responsible in achieving a holistic architectural building</li> <li>To help realize the kit of parts that are interdependent in the final outcome</li> </ul> <p>The outcome will be a compilation of design methods in the form of a Zine. This will include individual design process beginning from initial ideas and scoping of the intent until the final outcome.</p>
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## CO-PO mapped syllabi of B. Arch Course 21-22 – Architectural Representation and detailing 6

### Program Educational Objective (PEOs): B.Arch.

- To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
- To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
- To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
- To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
- To be able to assimilate knowledge to enhance spatial exploration, theorize and conceptualize ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

- To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
- To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
- To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
- To engage the student in enquiry through hands-on work.
- To enable the student to script one's own project
- To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
- To enable the student to extract the abstract from the experiential and center it as the basis of design
- To enable the student to break the boundary between abstract thought and material realities
- To enable students to discover multiple methods and tools to develop their own process of learning
- To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

- The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive ways of intervening as architects through critical thinking.
- To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
- To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete.
- To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. (Self / Other)
- To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
- To enable students to discover the relationship between material cultures and socio-economic

systems (Technical / Social)

- To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
- To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Representation and detailing 6**

Course Code: BARC 607      Sem 6      Third Year

**Course Objectives:**

The studio looks to blur the lines of *design and making* as two separate modes of knowledge and set up a space for students to have an analytical, questioning attitude towards all aspects of technology. This also encompasses the idea that a student is able to choose correct technology and materials to support it. The subject is an attempt to bring about a detailed resolution of design through technical representation of acquired knowledge of construction, services, building material and computing thereby leading to preparation of a fine set of working drawings and a tender document, very relevant for good practice.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Students are enabled to develop and resolve without compromising their design ideas to match the program requirements and operations.
CO2	Students are enabled to choose the correct system from the wide array of structural, infrastructural, envelope systems along with the appropriate construction material and technique to arrive at a design idea.
CO3	To be able to understand material behavioral properties and be able to take informed design decisions based on theoretical knowledge learnt
CO4	To be able to create a detailed portfolio showcasing all design attributes and detailing for execution purposes

**Rubrics:**

Year of Assessment : 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 100	Exercise 01 & 02: Marks out of	Credits	Date of submission		
3rd yr. 6th Sem	ARD		BARC 607	100		6	Multiple		
<b>Exercise: Title</b>	Working drawings for their AD project								
<b>Exercise Note / Task</b>	To prepare a detailed set of working drawings with 3 details								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% - 55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Choice and integration of various systems such as structural, envelope, materials and services adopted in context of the site and program.	Innovative & outstanding well-developed systems that integrate with program & context and spatial planning with extremely good detailing.	Outstanding developed systems that integrate with program, context and spatial planning with extremely good detailing.	Excellent well-developed systems that integrate with program, context and spatial planning with extremely good detailing.	Extremely well-developed systems that integrate with program, context and spatial planning with extremely good detailing.	Very Well-developed systems that integrate with program, context and spatial planning with extremely good detailing.	Good developed systems that integrate with program, context and spatial planning with extremely good detailing.	Fairly good developed systems that integrate with program, context and spatial planning with extremely good detailing.	Manage to develop systems that integrate with program, context	Absolutely no clarity of systems, or non-submission
<b>Representation Technique and final submission</b>	Very well formatted presentation of working drawings complete with details and BOQ report	Well formatted presentation of working drawings complete with details and BOQ report	Clear formatted presentation of working drawings complete with details and BOQ report	Very good formatted presentation of working drawings complete with details and BOQ report	Good formatted presentation of working drawings with some details and BOQ report	Fairly formatted presentation of working drawings with incomplete details and BOQ report	Barely managed to get working drawings complete with no details and BOQ report	Incomplete set of working drawings BOQ report	Absolutely no clarity of thought and understanding of the applied subjects
<b>Ability to demonstrate the</b>	Showcasing 100% ability to	Showcasing 90% ability to	Showcasing 80% ability to translate	Showcasing 70% ability to	Showcasing 65% ability to	Showcasing 60% ability to	Showcasing 55% ability to translate	Showcasing 50% ability to	Zero understanding

Year of Assessment : 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 100	Exercise 01 & 02: Marks out of	Credits	Date of submission		
3rd yr. 6th Sem	ARD		BARC 607	100		6	Multiple		
<b>Exercise: Title</b>	Working drawings for their AD project								
<b>Exercise Note / Task</b>	To prepare a detailed set of working drawings with 3 details								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% - 55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Choice and integration of various systems such as structural, envelope, materials and services adopted in context of the site and program.	Innovative & outstanding well-developed systems that integrate with program & context and spatial planning with extremely good detailing.	Outstanding developed systems that integrate with program, context and spatial planning with extremely good detailing.	Excellent well-developed systems that integrate with program, context and spatial planning with extremely good detailing.	Extremely well-developed systems that integrate with program, context and spatial planning with extremely good detailing.	Very Well-developed systems that integrate with program, context and spatial planning with extremely good detailing.	Good developed systems that integrate with program, context and spatial planning with extremely good detailing.	Fairly good developed systems that integrate with program, context and spatial planning with extremely good detailing.	Manages to develop systems that integrate with program, context	Absolutely no clarity of systems, or non-submission
<b>Learnings from the discussions conducted in class</b>	translate theoretical knowledge into practice	translate theoretical knowledge into practice	theoretical knowledge into practice	translate theoretical knowledge into practice	translate theoretical knowledge into practice	translate theoretical knowledge into practice	theoretical knowledge into practice	translate theoretical knowledge into practice	and application of theoretical knowledge
<b>Attendance, time management and participation in Studio</b>	Attends 95% of total classes	Attends 90% of total classes	Attends 85% of total classes	Attends 80% of total classes	Attends 75% of total classes	Attends 70% of total classes	Attends 60% of total classes	Attends 55% of total classes	Attends less than 50% of total classes

COPO Mapping

CO-PO mapping for a course of "UG program"									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Students are enabled to develop and resolve without compromising their design ideas to match the program requirements and operations.	2	1	2	2	2	1	3	2
CO2	Students are enabled to choose the correct system from the wide array of structural, infrastructural, envelope systems along with the appropriate construction material and technique to arrive at a design idea.	2	2	2	0	0	1	3	2
CO3	To be able to understand material behavioral properties and be able to take informed design decisions based on theoretical knowledge learnt	1	2	0	2	2	2	3	2
CO4	To be able to create a detailed portfolio showcasing all design attributes and detailing for execution purposes	0	0	0	0	0	2	2	2

<b>COURSE CODE</b>	BARC 620	<b>CREDITS</b>	2(Arch Theory) + 1(History) + 1(Extra)
<b>COURSE NAME</b>	College Projects 6	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Ginella George, Sanaeya Vandrewala, Rutika Parulkar, Rohan Shivkumar, Shirish Joshi, Karan Rane	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Friday / 1.20-3.00 pm, Monday / 1.20-3.00pm	<b>NON-CLASS TIME</b>	

<b>COURSE CODE</b>	BARC 620	<b>CREDITS</b>	1 + 1 Extra
<b>COURSE NAME</b>	College Projects 6 (Architectural History)	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Ginella George, Sanaeya Vandrewala, Rutika Parulkar	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Friday / 1.20-3.00 pm	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	<p>TENET OF OPPULANCE, OSTENTATIOUS   PARADIGM OF PUBLIC ART                  Gothic Architecture   Renaissance Architecture   Baroque Architecture                  The objective of the course is to bridge the distance between history as a construction of cultural identities and history as a material expression of the built object.                  While history is traditionally presented as a collection of facts and events that have transpired across time and place, it is pertinent to equip students on existing information and knowledge around these interpretations of facts. The emphasis therefore is on the understanding, analysis and relevance of this information in contemporary times, which will help them in gauging the society and context in which they live and operate.</p>
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<b>COURSE METHODOLOGY</b>	<ol style="list-style-type: none"> <li>To introduce students to the concepts of architectural and urban history of the Gothic, Renaissance and Baroque period and how it has changed, adapted and evolved over centuries.</li> <li>To initiate the understanding through the lens of Opulence, Grandeur and Ostentatious built through various examples at micro and macro scales.</li> <li>Understanding the history through documented examples of all forms of built and the relevance of the built not just in architecture of a building but also planning of a city.</li> </ol>
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LECT	DATE	TEACHING CONTENT	Areas covered
1	26 nov 21	European Urban planning – Medieval, Renaissance & Baroque periods SV	Countries and city and town typology across Europe
2	03 dec 21	Medieval, Renaissance and Baroque historical periods, socio-political contexts – Lessons in European Built Spaces GG,RP	Interactive session after reading- if you both can recommend paper readings or books available online for students to begin this dialogue. We can discuss how to conduct this class next week in college

3	10 dec 21	The Urban Turn GG	The 'city', Revival of the civic
4	17 dec 21	City and the countryside: Pilgrimage routes and sites	Routes, churches, urban cathedrals, sarais, viharas and madrasas
5	07 jan 22	Indulgences in Stone- Rise of Gothic Cathedrals SV	Context, typology, Notre dame, York minister
6	14 jan 22	The Renaissance city GG	Italy, Athens – palazzo, piazza (introduce the assignment)
7	21 jan 22	Public art in Public spaces-typologies of streets, squares, parks etc. SV	Does not follow any particular period – covering various typologies
8	28 jan 22	St. Peter's Rome- The centre of Christendom SV	Piazza, construction, planning, interiors
9	04 feb 22	Magnificent Versailles of Louis XIV SV	Context, planning, architecture, gardens
10	11 feb 22	New Dawn of planning	New Renaissance Capital of St. Petersburg, Russia and London post the Great Fire
11	18 feb 22	Performance art in public space	Opulence of Opera Houses
12	25 feb 22	Hausmannization - Old City New Splendor SV	City regeneration, context, economics, planning
13	04 mar 22	Revivalism Architecture- Bring past to the present GG	Classical revival in India
14	11 mar 22	Life in English Country Houses- Grandeur of the Elite SV	Revival of classical ideas, Context, planning, architecture, travel, interiors
15	18 Mar 22	holiday	
16	25 Mar 22	Group Exercise: colonial influence on the Indian planning context using case study examples of a public space such as square, plaza, chowk, market, street etc.	Reading multiple narratives of a singular site, Understanding layers of history, typology, difference in context and influences. Critically analysing the case study example /s chosen
17	01 Apr 22	Group Exercise	

**LEARNING OUTCOMES**

- Overall comprehension of the field of the History of Architecture, including familiarity with diverse geographical world traditions, cultures, historical periods, works of art and architecture, their producers and users; establishing awareness of how these have been defined by the discipline and other socio-political contexts.
- Understanding various architectural terminologies, themes and building types used in the covered periods and architectural typologies.
- Acquire knowledge of significant structures and buildings in their historical, regional and cultural contexts in the specific periods.

**READING LIST/ REFERENCES**

- Spiro Kostoff- City Assembled
- AEJ Morris- History of Urban Form
- Norberg-Schulz: Meaning in Western Architecture
- Gunther Binding-High Gothic-Age of Great Cathedrals
- Benedict Taschen-Architecture of the world: Gothic
- Spiro Kostof- History of architecture-Setting and rituals
- Trancthenberg & Hyman- Architecture Prehistory to post-modern
- Margaret Aston-The panorama of the renaissance
- Jordon- Western Architecture
- John Summerson- Classical language of Architecture



<b>COURSE CODE</b>	BARC 620	<b>CREDITS</b>	2 CP
<b>COURSE NAME</b>	College Projects 6 (Architectural Theory)	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Rohan Shivkumar, Shirish Joshi , Karan Rane	<b>EXAM SCHEME</b>	Internal
<b>CLASS DAY/TIME</b>	Monday (1.20-3.00)	<b>NON-CLASS TIME</b>	-

**PEDAGOGIC INTENT**

*The Theory of Design Course at the KRVA is the space for reflection and analysis on fundamental questions concerning architecture to enable self-reflection and critical thinking within students. It is the place for meditation, discussion and debate about language concerning architecture- visual, spatial, verbal as well as written. The attempt is to create a space for conversation about the dialectical relationships between the idea of 'architecture'- a disciplinary question concerned with what the domain of architecture is, what it's identity is, and what its responsibilities and ethical role is; and that of the 'self' of the 'architect' - a philosophical / psychological question that is concerned with what the particular skills of this profession are, what it's role is and how does this person place herself in the world.*

*Within the course there is an attempt to challenge the idea that practice and thought are separable - that there can be theory that has no concrete relevance; or that there can be practice that exists outside of thought. The course also looks beyond the tropes of 'styles' that has plagued the writing of architectural theory to investigate ontological foundations of different approaches to architecture. These involve exploring the relationship between form and meaning, of the body and space, of the self of the architect with the 'other', of the dialectical relationship between the analytical and the intuitive, and of the concrete object and the systems within which it exists- the social, economic and political. The course intends to expose students to the concerns / concepts / methods and tools of cultural practices and allow them to analyse them critically with respect to their contexts. The focus of the year is on twentieth century cultural practices and attempts to bridge disciplines through common concerns. Another focus is on unpacking concepts of the contemporary through focusing on ideas of 'Indian modernity'*

*The Course in the 6th Semester focuses on ideas about architecture and art that emerge around the world in the period from the mid 60s to contemporary times*

**COURSE METHODOLOGY**

This is primarily a lecture and discussion based course. The students are asked to submit a short essay on a topic of their choice.

WEEK	DATE	Lecture	ASSIGNMENTS	MARKING WEIGHTAGE
1	22 Nov 21	Introduction		
2	29 Nov 21	Syntax - Eisenman		
3	6 Dec 21	Deconstructivism or Late Modernism		
4	13 Dec 21	Rem Koolhaas		
5	20 Dec 21	Deconstructionism as Signature		
6	3 Jan 22	Brazil Modern		
7	10 Jan 22	Screening- Nostalgia for the Future		
8	17 Jan 22	India Modern		
9	24 Jan 22	Critical Regionalism		
10	31 Jan 22	The Fold		
11	7 Feb 22	Post Human Landscapes		
12	14 Feb 22	Discussion on Design Projects		
13	21 Feb 22	Q and A		
14	28 Feb 22	Discussion		
15	7 March 22	Discussion	Written Assignment submission	75%
16	14 March 22	Conclusion		

**LEARNING OUTCOMES**

**READING LIST/ REFERENCES**

## CO-PO mapped syllabi of B.Arch Course 2021-2022\_College Projects 6

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)

6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: College Projects 6    Sem: 6    Third Year**

**Course 1: College Projects 6(History)    Sem: 6    Third Year**

**Course Objectives:**

- To understand architecture as an outcome of socio cultural processes.
- To unpack histories as interpretations rather than as a text
- To write an architectural history.

**Course 2: College Projects 6    Sem: 6    Third Year  
(Architectural Theory)**

**Course Objectives:**

- To enable the students with critical thinking skills.
- To consider the relationship between the ‘self’ and the frameworks through which it is constructed, and the choices made with respect to design.
- To create a dialectical relationship between the concepts that shaped the object and the nature and presence of the object itself.
- To create an unstable field within which questions and concerns can oscillate constantly critiquing each other.

**Course Outcomes (CO): (Combined Course outcomes for History and Tectonic Studies)**

Course Outcome (Co)	Description
CO1	Creating frameworks to enable the student to deal with the shifting scales in the historiography of the historical object.
CO2	Applying a constellation of ideas, discussed in the earlier four semesters, to trace and write the history of a built object
CO3	Understanding and analysing the built object to dissect architectural history through various spectrums of thoughts and responses.
CO4	Understanding the ideas and concepts that have shaped architectural thinking
CO5	Applying the learning from various references of literature, visual art or film, by placing the built object in conceptual, cultural and historical context

**Rubrics 1 (History):**

Year of Assessment: 2021- 2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:		University Subject Code	Sessional Marks: max 100	Exercise : Marks out of	Credits	Date of submission		
THIRD YEAR - SEM 6	College Projects 6 (History)		BARP 620	50	50	2			
Exercise: Title	Writing an Architectural History								
Exercise Note / Task	Students will select a structure from their neighbourhood or city and attempt to write a history that goes beyond the information that is available beyond secondary sources. They will have to construct a history based on their engagement with and memory of the object.								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Writing	1) Extremely articulate in framing the area for inquiry. 2) Very clear structure for presentation. 3) Well researched	1) Very articulate in framing the area for inquiry. 2) Clear structure for presentation. 3) Well researched	1)Clear and Articulate in framing the area for inquiry. 2) Well researched structure for presentation.	1) There is clarity in the area of inquiry 2) Research and structure for presentation is fairly good.	1) The area of inquiry is fairly good 2) Research and structure for presentation can be better.	1) The area of inquiry is good 2) Research and structure for presentation is fair.	1) There is clarity in the area of inquiry 2) Research and structure for presentation is found lacking	1)There is potential for an area of inquiry but needs more clarity. 2) No research and structure for presentation	Non submission
Participation in Studio	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes

**Rubrics 2 (Architectural Theory):**

Year of Assessment: 2021-2022		USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture							
Year & Sem	Subject:	University Subject Code	Sessional Marks: max 100	Exercise 01 & 02: Marks out of	Credits	Date of submission			
THIRD YEAR - SEM 6	College Projects 6 (Arch Theory)	BARP 620	50	50	2				
Exercise: Title	Building Analysis								
Exercise Note / Task	Students will select a structure designed after 1950 to discuss and analyse in detail								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Discussion through Images	Innovative. Experimental and Bold Clarity. Expressive of relevance.	Very impressive. Highly demonstrative.	Impressive attempt to go beyond requirement. Excellent presentation of ideas.	Demonstrative. Very good attempt to present ideas.	Has gone beyond the requirement. More than adequate attempt to present ideas.	Attempts to express and go beyond the requirement. Just adequate	No further enquiry. Barely encourages a discussion. Needs clarity	No further enquiry. Does not encourage a discussion	Does not complete the assignment
Analysis and Ideas	Innovative. Experimental and Bold Clarity.	Very impressive. Highly demonstrative.	Excellent presentation of ideas.	Very good attempt to present ideas.	More than adequate attempt to present ideas.	Just adequate attempt to present ideas.	No further enquiry.	No further enquiry.	Does not complete the assignment
Participation in Studio	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes

COPO Mapping Setup for Sem 6

CO-PO mapping for a course of "UG program"										
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	
CO1	Creating frameworks to enable the student to deal with the shifting scales in the historiography of the historical object.	2	0	1	0	0	3	1	1	
CO2	Applying a constellation of ideas, discussed in the earlier four semesters, to trace and write the history of a built object	3	2	2	1	0	3	1	3	
CO3	Understanding and analysing the built object to dissect architectural history through various spectrums of thoughts and responses.	3	2	3	1	0	3	3	3	
CO4	Understanding the ideas and concepts that have shaped architectural thinking	1	0	3	3	1	3	2	3	
CO5	Applying the learning from various references of literature, visual art or film, by placing the built object in conceptual, cultural and historical context	1	0	2	3	2	1	2	1	

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

# Program Specific Objectives

# Fourth Year

1. Explore the intersections between larger themes of economy, history, policy, administration, ecology and the architectural profession
2. Critically reflect on the urban and equip students to design for the collective.
3. To recognize architectural or urban practice as embedded within various fields of technology, systems, methods, etc.
4. Incorporate evidence-based design methods together with intuitive space-making practices, to enable students to develop their own research methods.
5. Help students understand the nature and modes of practice before they begin internships and encourage specialisations in academia and practice.
6. Discuss ethical and ideological dimensions of research and practice.

# Fourth Year

## Pedagogic Intent

Primary Dialectical Questions : Self - Other / Analytical - Intuitive / Individual - Collective / Object - System/ Technical - Social / Architect - Architecture

The Fourth Year course intends to enable the students to begin to think about themselves as practitioners. The course exposes them to the history and the nature of the profession, along with the systems that are affecting the transformation of our built fabric. It is interested in allowing students to explore the role and nature of architecture within the larger arcs of the political economy, history and the region. Courses explore the intersections between larger themes of economy, history, policy, administration, ecology and the architectural profession. This also enables a student to see themselves as practitioners within a larger field before they head out for their internships in the following semester.

## Design Studios

### *System Brief*

Courses: Architectural Design, Allied Design,

The Fourth Year Design Studio is interested in exploring the emergence of the architectural object within Urban Systems. These systems may include historical, ecological, administrative aspects. Students are asked to explore these systems and then situate an intervention within them. Programming and urban responses are key areas of exploration. The contexts and concerns chosen within the studio are often based on the issues being felt in our context by the rapid transformation of our urban environments. Programmes that emerge range from large institutional buildings to infrastructure projects.

The Allied Design Studio runs closely with the Architectural Design Studio. It becomes the space for reading and analysing particular aspects of the urban. The student is exposed to the ways in which different scales of seeing and intervening are related to one another through processes of diagramming and representation.

## The Technology and Representation Studios

### *Context and Systemic Questions*

Courses; Technology Studio, Technology Lecture 1, Technology Lecture 2, Theory of Structures

The Technology courses in the fourth year are interested in contextualising the techniques of building within larger systemic concerns like the digital turn, climate change and urbanism. Tactile techniques of learning are integrated with digital analytical tools in courses that are exploring concerns like seismic stability and energy consumption.

There is an emphasis to expose the students to the larger issues that affect the making of buildings including the careful consideration of resources and processes as part of urban infrastructure systems. These processes also look at the various regulatory regimes within which the production of buildings lies. This allows the student to explore 'multidisciplinary overlaps' and begin to articulate for herself areas of further interest and research.

## The Study Trip

The Fourth Year Study trip explores the role of architecture within complex urban systems. These include regulatory and legislative regimes, environmental and ecological systems, along with social, political and economic systems. Locations for the study trip are decided on the basis of trying to understand the forces that shape the rapidly growing tier two and tier three cities of the country. These cities are burgeoning out of control, often putting a great deal of stress upon their older fabrics and older environmental systems as they grow uncontrolled outwards devastating the hinterland. The study tries to unpack some of these forces and arrive upon strategies of intervention both at a macro and at a micro scale.

## Architectural Theory

Courses: Architectural Theory, Professional Practice

The Fourth Year course intends to expose students to the ways in which modern architecture found its ground in the situated practices and modernities that emerged outside of Europe and America. It will focus on the history and sources of practices that emerge in India, their critical positioning and languages. The course serves as an introduction to the semester of professional practice and works in tandem with the professional practice course- which engages students in a study or survey of contemporary practices in India.

## Humanities Courses

Courses: Research Methods

The Research Methods course for the 4th year of Bachelor of Architecture program will attempt to train students in pre-thesis research methodologies, with the final aim of identifying a clear area of concern and a precisely articulated synopsis for their thesis projects which they will pursue in their 5th year, with their respective guides. The module will introduce students to strategies of architectural research, after strengthening basic concepts of the methods of inquiry such as making and countering arguments, nature of evidence, using images as arguments, etc. The module will also equip the students to systematically reflect upon their experiences, and organize facts and ideas for their ongoing work and for future use.

# Semester 7

## Scheme of Teaching and Examinations

### Scheme of Teaching and Examinations Bachelor of Architecture (B. Arch.)

#### Semester VII

Semester VII Exam conducted by college		Teaching Scheme		Credits		
Sub. No.	COURSES	Lecture	Studio	Theory	Studio	Total
BARC 701	Architectural Design Studio 7		8		8	8
BARC 702	Allied Design 7	2	2	2	2	4
BARC 703	Architectural Building Construction 7	3	3 classes of technology studio	3	1	4
BARC 704	Theory and Design of Structures 7	2		2	1	3
BARC 708	Architectural Building Services 5	2		2	1	3
BARC 707	Architectural Representation & Detailing 7	2	3	2	3	5
BARC 710	Professional Practice 1	3		3		3
BARP 720	College projects 7		3		3	3
BARE 721	Elective 7		3		3	3
	Total	14	22	14	22	36

Semester VII Exam conducted by college		Examination Scheme			
Sub. No.	COURSES	Theory (paper)	Internal	External viva	Total
BARC 701	Architectural Design Studio 7		100	100	200
BARC 702	Allied Design 7		100		100
BARC 703	Architectural Building Construction 7	50	50		100
BARC 704	Theory and Design of Structures 7		100		100
BARC 708	Architectural Building Services 5	50	50		100
BARC 707	Architectural Representation & Detailing 7		100	100	200
BARC 710	Professional Practice 1	50	50		100
BARP 720	College projects 7		100		100
BARE 721	Elective 7		100		100
	Total	150	750	200	1100

# Semester 7

# Semester 7

## Time-Table

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8.10-9.00		<b>Architectural Representation and Detailing</b> <i>BARC 707</i>				
		3 OF 5		1		
9-9.50	<b>Architectural Design</b> <i>BARC 701</i>	KIMAYA	<b>Allied Design</b> <i>BARC 702</i>		<b>Architectural Design</b> <i>BARC 701</i>	
	4 OF 8	DNYANESH	4		4 OF 8	
9.50-10.40		VIKRAM				
		SHREY				
10.40-11.30	SHIRISH	DEVESH	PAUL		SHIRISH	
	SANDEEP	RAJ	ADITYA		SANDEEP	
	ARIJIT		SANDEEP		ARIJIT	
	DEEPI		SHIRISH		DEEPI	
11.30-12.20	LUBAINA		KETAKI		LUBAINA	
	SAGAR		ARIJIT		SAGAR	
12.20-1.20						
1.20-2.10	<b>Architectural Building Construction</b> <i>BARC 703</i>	<b>SITUATING PRACTICE -THEORY: PROFESSIONAL PRACTICE</b> <i>BARC 710</i>		<b>Architectural Building Services</b> <i>barc 708</i>	<b>RESEARCH METHODS : COLLEGE PROJECT</b> <i>barc 708</i>	<b>Theory of Structures</b> <i>BARC 704</i>
	3	2		3	3	3 TOS
2.10-3.00		NEMISH		MINAL	SHWATI	GURU
	KIMAYA	RUTIKA				
	VIKRAM	MAMTA				
		SHANTANU K				
3.00-3.50		<b>SITUATING PRACTICE -THEORY: PROFESSIONAL PRACTICE</b> <i>BARC 710</i>				
		1				
3.50-4.40						

<b>COURSE CODE</b>	BARC 701	<b>CREDITS</b>	8
<b>COURSE NAME</b>	Architectural Design Studio 7	<b>SESSIONAL MARKS</b>	200
<b>FACULTY</b>	Shirish Joshi, Sandeep Menon, Karan Rane, Deepti Talpade, Sagar, Arijit Sen, Lubaina Rangwala.	<b>EXAM SCHEME</b>	Sessionals and Viva
<b>CLASS DAY/TIME</b>	Tuesday and Friday, 8.00 to 11.20	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	<p>While most of us are locked indoors navigating everything from basic essentials to our personal desires through a mediated virtual environment, the world outside seems a distant reality. We know that this is only an apparition. It is not surprising then that we find ourselves observing the space around us with acute attention. Our homes, our terraces, our backyards and gardens and our immediate neighbourhoods, have become predominant geographies of our bodily existence. No one thought that we would be here after a year and half, and yet here we are forced to reconcile with the reality that our neighbourhoods hold key positions in our urban systems.</p> <p>This studio also attempts a nuanced look at the neighbourhoods that we live in and attempts to identify and create potential changes that make a safer surrounding for all. We acknowledge that creating a safer neighbourhood involves taking cognizance of the macro as well as the micro impacts of/on our immediate surroundings. This meant looking at the transformation in neighbourhood spaces of play, exercise, learning, caring, entertainment, shopping, etc during a lockdown. Where and in what kind of spaces do these desires get manifested? How do we imagine the future use of public spaces in relation to public health, social interactions, healing? How do macro level infrastructures become significant spaces of public within our neighbourhoods?</p> <p>We begin by asking what our neighbourhood is. One common definition says that neighbourhoods are walk able areas around your house, while another definition uses number of people to define. In planning history, the neighbourhood is a unit of planning that is imagined as a residential zone. A space historically, in the early industrialised, gendered and zoned city, that was reserved for housing, women, children and the elderly, where men return from their zones of work in the city; but for most of us the neighbourhood is a colloquial space, a lived space. Not bound by specific boundaries, rather drawn out in the vectors of our everyday lives-it is a habitus generated out of everyday speech, acts, behaviours, familiarity. It is generated out of acts of appropriation, possession, neighbourliness, growing up, friendships, play, growing old, telling stories, and gossip. Etc.</p>
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<b>COURSE METHODOLOGY</b>	<p>This year's 4th Year AD studio worked in tandem with the 4th year UD studio in so far as the identification and analysis of the test sites of the studio were concerned. The AD studio identified 15 neighbourhoods from the 80 odd neighbourhoods that the students came from as our test sites. The same neighbourhoods were analysed as part of the Urban Design Studio exercise where the student groups worked on creating what is called a neighbourhood report. The students were expected to work as teams of five working on one neighbourhood which was identified after a round</p>
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table discussion between the five students and the mentors. It was imperative that at least one student was currently a resident of the neighbourhood that was selected for the study. This student or group of students became the key neighbourhood reporters and were responsible for bringing ground information to the team. The others in the group helped in conducting extensive remote secondary investigations.

The first half (three weeks) of the studio focused on developing the hard and soft data of the neighbourhoods. Where primary data collection remained a challenge in the current scenario, students began with mining secondary data sets and building neighbourhood stories using video and phone calls. As time progressed and we are able to access certain neighbourhoods safely, one of the participants who belonged to the test neighbourhood became our chief neighbourhood reporter, bringing on ground, live information to the group.

The second part of the studio (three weeks) explored the making of a master plan that identifies design interventions at various scales within the test neighbourhood. The third part of the studio (7 weeks) was dedicated to designing the interventions from the scale of the building to its public interface at all the necessary scales, and to enable the master plan successfully integrated. At this stage the students were working independently on resolving and detailing their designs while using their larger group as a constant sounding board, and keeping in mind the entire scheme and its ambitions.

WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	15 and 18 June 2021	Introduction to the studio and to various sites		
2	22 and 25 June 2021	Site study begins. Followed by discussions.		
3	29 June, 2 <sup>nd</sup> July	Site study continues and wraps up.		
4	6 and 9 July 2021	Master plan work begins/ First review		
5	13 and 16 July 2021	Master plan work continues.		
6	20 and 23 July 2021	Master plan work wraps up.		
7	27 and 30 July 2021	Individual design begins.		
8	3 and 6 August 2021	Individual design continues/ mid-term review		
9	10 and 13 August 2021	Individual design continues.		
10	17 and 20 August 2021	Individual design continues.		
11	24 and 27 August 2021	Individual design continues		
12	31 August and 3 September	Individual design continues/ pre final review		
13	7 and 10 September 2021	Individual design wraps up		
14	14 and 17 September 2021	Updating masterplan and placing individual designs on the masterplan		



15	21 and 24 September 2021	Collating the work for final review
16	28 September and 1 <sup>st</sup> October 2021	Collating and finishing all work for the final review.
17	5 and 8 October 2021	Final Jury Week.

<b>LEARNING OUTCOMES</b>	The studio is imagined as a collaborative working space. Participants will be testing their individual ideas against the backdrop of a collective analysis which is built for the respective test neighbourhoods. This we hope will expose the participants to working at the scale of the urban area, keeping in mind the various systems and forces at play, while they design their buildings. How does the individual building become a stimulator of public space and how can design play a fundamental role in doing so. We will learn how to build a master plan and how to integrate good design within the master plan. This complexity of dealing with multiple scales and stakeholders will be a critical learning objective of the studio.
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<b>READING LIST/ REFERENCES</b>
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## CO-PO mapped syllabi of B.Arch Course : 2021-22 – *Architecture Design Studio VII*

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to de-layer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort

- zones. (Self / Other)
- To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
  - To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
  - To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
  - To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architecture Design Studio VII**  
**Course Code: BARC 701**

**Sem 7**

**Year 2021-22**

**KRVIA Course Code: 7ADS088**

**Course Objectives:**

While most of us are locked indoors navigating everything from basic essentials to our personal desires through a mediated virtual environment, the world outside seems a distant reality. We know that this is only an apparition. It is not surprising then that we find ourselves observing the space around us with acute attention. Our homes, our terraces, our backyards and gardens and our immediate neighbour-hoods, have become predominant geographies of our bodily existence. No one thought that we would be here after a year and half, and yet here we are forced to reconcile with the reality that our neighbourhoods hold key positions in our urban systems.

**Course Outcomes (CO):** (Maximum number of course outcomes should be 5 and min 3 as per NAAC guidelines, Ethics based etc.)

Course Outcome (Co)	Description
CO1	To expose students to complex urban conditions which act as determinants to their design proposition.
CO2	To train students in studying, analyzing, and factoring-in the complexities of the city, which informs design development.
CO3	To train students in building a nuanced design proposition for a mixed-use project, with a strong housing component.
CO4	To train students in executing a well-developed design proposition – with drawings, models, and an informed position.

**Rubrics:**

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks:	Exercise 01 & 02: Marks out of	Credits	Date of submission		
FOURTH YEAR – SEM 7	Architecture Design Studio VII		BARC 701	200		8			
Exercise: Title	Detailed Design Proposition								
Exercise Note / Task	To develop a detailed design proposition based on the urban study.								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
O ++	Extremely articulate and well-developed inquiry and design proposition.								
O+	Similar to O+ except the level of articulation and depth of proposition is lesser.								
O	Well-articulated and reasonably well-developed design proposition.								
A	Well-articulated and well-developed proposition, except for loopholes and half-baked ideas.								
B	Similar to A except the loopholes and drawbacks are more pronounced.								
C	Average level of articulation and proposition.								
D	Poor level of articulation and proposition.								
E	Very poor level of articulation and proposition. Just passable.								
F	Highly undeveloped project. Not worthy of passing.								

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To expose students to complex urban conditions which act as determinants to their design proposition.	3	3	3	2	3	3	2	2
CO2	To train students in studying, analyzing, and factoring-in the complexities of the city, which informs design development.	3	3	3	2	3	3	2	2
CO3	To train students in building a nuanced design proposition for a mixed-use project, with a strong housing component.	3	3	3	2	2	2	3	1
CO4	To train students in executing a well-developed design proposition – with drawings, models, and an informed position.	3	3	3	2	1	2	3	1

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 702	<b>CREDITS</b>	4
<b>COURSE NAME</b>	Allied Design VII - Urban Design	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Shirish, Kalpit, Sonal S, George, Paul, Ketaki ,George	<b>EXAM SCHEME</b>	Internal
<b>CLASS DAY/TIME</b>	Monday/ Wednesday/ Friday	<b>NON-CLASS TIME</b>	12

<b>PEDAGOGIC INTENT</b>	<p>The course aims at enabling the students to read, map and represent cities through various perspectives. Through the use of various frameworks for reading and analysing city form, the course would help students map complex urban fields within which they could imagine sensitive architectural interventions.</p> <p>Urban design has always separated its modes of spatial thinking into two tendencies- as 'concrete material forms to be analysed and explained' or as 'mental constructs about, ideas about and representations of space and its social significance'. The studio aims to explore the space between these two imaginations.</p> <p>Course Objectives</p> <p>To understand the various perspectives on analysing and representing a city that have been developed and perfected over the years</p> <p>To develop mapping techniques suitable for a comprehensive reading of urban environments through various frameworks of reading the city</p>
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<b>COURSE METHOD</b>	The study tour is organised as a process of discovery of the vectors/forces that make up Lucknow's urbanism and urban structure. Collective work, discussions and consensus building form a very large part of the method of the studio. The interventions will be shaped by this process.
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WEEK	DATE	TEACHING CONTENT	DESCRIPTION	DELIVERABLES
1	30/06/2021	Introduction, appreciation of the urban scale.Choosing the neighborhoods that students will apply various frameworks of reading/interpreting to Geographies and morphology Neighborhoods - Perry?	1.	
3	07/07/2021	<Framework (historical+morphological)> Spiro Kostoff		
4	14/07/2021	<Framework (historical+morphological)> - Edmund Bacon		
5	21/07/2021	<Framework (phenomenological+ocular/visual)> - Lynch + Jan Gehl/William Whyte		
	28/07/2021	Framework (phenomenological+ocular/visual)> Community/Place oriented theories - Rapoport + Big Moves		
6	04/08/2021	<Framework (ecological+logical/mathematical)> Data & the Urban		
7	11/08/2021	Review		
8	18/08/2021	<Framework (ecological+logical/mathematical)> - Working Studio		
9	25/08/2021	<Framework (perceptual/eudemonic)> - Situationists + Jan Gehl/William Whyte		
10	01/09/2021	<Framework (perceptual/eudemonic)> - Working Studio		
11	08/09/2021	Maybe students suggest suitable frameworks themselves in this session?		

12	15/09/2021	Review of Neighborhood Report so far - Review 2
13	22/09/2021	Working Studio?
13	25/09/2021	Final presentation + Submission

<b>LEARNING OUTCOMES</b>	<p>The students develop an appreciation of the urban in their design inquiries. They learn to situate their architectural design projects within a larger context of neighboring buildings and territories.</p> <p>They also learn to apply various frameworks of reading and analysing the urban, to their respective neighborhoods, and map/represent the same.</p> <p>The student deliverables are envisioned as "Neighborhood Reports" which articulate a reading of their own neighborhoods (in groups) based on various determinants of urban form/ lenses. This will also enable the students to react to various situations in the context of their architectural design projects..</p>
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CO-PO mapped syllabi of B.Arch Course 2021-2022 – Allied Design VII

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delay the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
  1. To enable the student to script one’s own project
  2. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
  3. To enable the student to extract and the abstract from the experiential and center it as the basis of design
  4. To enable the student to break the boundary between abstract thought and material realities
  5. To enable students to discover multiple methods and tools to develop their own process of learning
  6. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. (Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Allied Design VII**

**Course Code: BARC 702**

**Sem 7**

**Fourth Year**

**Course Objectives:**

The Studio is integrated with the architectural design studio which focuses on Architectural and Urban futures of small Indian cities.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	Conceptual and analytical approaches and tools towards understanding urban systems
CO2	Representation as a critical and analytical tool
CO3	Introduction to urban design tools, and methods.

CO-PO mapping:

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Conceptual and analytical approaches and tools towards understanding urban systems	3	3	3	2	3	3	2	2
CO2	Representation as a critical and analytical tool	3	3	3	2	3	3	2	2
CO3	Introduction to urban design tools, and methods	3	3	3	2	2	2	3	1

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelor of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks:	Exercise 01 & 02: Marks out of	Credits	Date of submission		
Fourth year - SEM 7	Allied Design VII	BARC702	BARC 702	100	100	4			
Exercise: Title	Design and documentation								
Exercise Note/task	Detailed drawings with plan, sections and details								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Lenses of inquiry	Extremely complex, new and original level of inquiry	Extremely complex, and comparatively new and comparatively original level of inquiry	Complex, and original level of inquiry	Moderate and original level of inquiry	Moderate and continued from earlier study level of inquiry	Normal and continued from earlier study level of inquiry	Normal and low level of inquiry	Normal and poor level of inquiry	Absence of inquiry
Ability to demonstrate the Learnings from the Studio	Extremely well-articulated	Very well-articulated	Well articulated	Articulated normally	Moderately Articulate	Less Articulate	Needs work	No Articulation	No Attempt

<b>COURSE CODE</b>	BARC 703	<b>CREDITS</b>	3
<b>COURSE NAME</b>	Architectural Building Construction	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Vikram, Kimaya	<b>EXAM SCHEME</b>	Theory
<b>CLASS DAY/TIME</b>	1.20-3.50	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	Having completed advanced floors and Building envelop systems in earlier years, this semester will focus on sub ground building, high-rise structures (sky scrapers) and earthquake resistant structures. Students are expected to acquire adequate knowledge to conceptualise design ideas given the said considerations and be prepared to communicate with professionals in the respective fields using appropriate terminology and building codes.
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<b>COURSE METHODOLOGY</b>	Introduce and orient through lectures, Expose to sites and case studies, simulate exercises & resolve problems and designs.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	7th June	Introduction		
2	14th June	Basement Design		
3	21st June	Deep Foundations; Piles, Secant and shore, diaphragms introduction, Deep Basement Construction		
4	28th June	<i>STUDIO</i>		
5	5th July	Studio, Diaphragm		
6	9th July	Site Visit Basement		
7	12th July	Basic concepts of earthquakes and earthquakes resistant buildings 1	30	Basement portfolio
8	19th July	Basic concepts of earthquakes and earthquakes resistant buildings 2		
9	26th July	Evolution of high rise	20	
10	13th Aug	Revision		
11	2nd Aug	High rise structures- Design considerations- planning, structure & skin, wind factors; High rise structures- Guest lecture structural aspects		
12	9th Aug	High rise structures- submission - wire frame model of the structure of a case study of choice (pairs)		
13	16th Aug	Studio	25	Report: High Rise
14	23rd Aug	Resolution of foundations for Architectural Design		
15	30th Aug	Resolution of skin/ wall sections for Architectural Design		
16	6th Sep	Design resolution - (Structural and constructional aspects)	25	Design portfolio technical

<b>LEARNING OUTCOMES</b>	Student is expected to be oriented towards fundamental concepts of designing buildings in regions of seismic, topographical and geotechnical challenges. She will also be applying the knowledge of advanced foundations and basement construction & waterproofing while resolving basements in their previous semester institutional AD sites. She will also have an orientation of how a high rise building is planned and constructed.
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CO-PO mapped syllabi of B.Arch Course 2021-2022 – *Architectural Building Construction*

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognise and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete.
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Building Construction**

**Course Code: BARC 703**

**Sem 7**

**Fourth Year**

**Course Objectives:**

**Having completed advanced floors and Building envelop systems in earlier years, this semester will focus on sub ground building, high-rise structures (sky scrapers) and earthquake resistant structures. Students are expected to acquire adequate knowledge to conceptualise design ideas given the said considerations and be prepared to communicate with professionals in the respective fields using appropriate terminology and building codes.**

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	<b>To understand concepts of deep foundations, high rises and be able to apply them.</b>
CO2	<b>To analyze critical concerns in high rise related to seismic, wind pressures and be able to design in accordance</b>
CO3	<b>To evaluate a building in terms of its technological advancements</b>



CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	To understand concepts of deep foundations, high rises and be able to apply them.	2	2	2	1	0	3	3	3
CO2	To analyze critical concerns in high rise related to seismic, wind pressures and be able to design in accordance	2	2	2	0	3	2	2	1
CO3	To evaluate a building in terms of its technological advancements	2	2	2	1	3	2	2	1

Year of Assessment:	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelor of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks:	Exercise 01 & 02: Marks out of	Credits	Date of submission		
FOURTH YEAR - SEM 7	Architectural Building Construction		BARC 703	50		4			
Exercise: Title		Reports / documentation / Case studies							
Exercise Note/ task		To present the output of curated lectures with reports							
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Understanding and application of systems to design proposals		Thorough understanding of explored interventions	Very good understanding of explored interventions	Good understanding of explored interventions	Fair understanding of explored interventions	Satisfactory understanding of explored interventions	Understanding of explored interventions	Below average understanding of explored interventions	Poor understanding of explored interventions
Representation Technique and final submission		Very well formatted presentation	Well formatted presentation	Clear formatted presentation	Very good formatted presentation	Good formatted presentation	Fairly formatted presentation	Barely managed to get clarity of intent	Less clarity in terms of ideas and processes
Lenses of inquiry	Extremely complex, new and original level of inquiry	Extremely complex, and comparatively new and comparatively original level of inquiry	Complex, and original level of inquiry	Moderate and original level of inquiry	Moderate and continued from earlier study level of inquiry	Normal and continued from earlier study level of inquiry	Normal and low level of inquiry	Normal and poor level of inquiry	Absence of inquiry

<b>Ability to demonstrate the Learnings from the Lecture</b>	Extremely well-articulated	Very well-articulated	Well articulated	Articulated normally	Moderately Articulate	Less Articulate	Needs work	No Articulation	No Attempt

BARC 704	COURSE NAME	Theory and Design of Structures VII	SEMESTER	Seven	CREDITS	3
	FACULTY	Guru	SESSIONAL MARKS	100	SCHEME OF EXAMINATION	Internal
	TIME	12.00 - 3:00	TEACHING HOURS	2.5	TIME REQUIRED OUTSIDE OF CLASS	
UNIVERSITY COURSE DESCRIPTION	Analysis and design of Retaining walls, Pile Foundations and Combined/eccentric Footings. Study of Earthquake Resistant Structures, understanding the know-how of its mechanisms. Theory and principles of structural design of tall buildings.					
PEDAGOGIC INTENT	Developing and understanding of the kind of structural systems that are required for high rise towers. Starting from the foundations to understanding the structural skeleton of the building.					
METHODOLOGY	Various mediums will be used to explain the concepts, like videos, presentation, hands-on experiments with material kits. Sharing experiences with class in accordance to one's learnings.					

SCHEDULE	DAY	DATE	TEACHING CONTENT OF THE DAY	MARKING DISTRIBUTION	ASSIGNMENT/DELIVERABLE
week 1	Saturday	19/6/21	Introduction to Deep foundations. Study of Geotechnical investigation with respect to site.		
week 2	Saturday	26/6/21	What are Pile foundations? Various types of it and its applicability with respect site conditions. Design and analysis of pre-cast and cast-in situ piles.		
week 3	Saturday	3/7/21	Study Trip		
week 4	Saturday	10/7/21	Holiday		
week 5	Saturday	17/7/21	Discussion on pile design and its key aspects. What are the thumb rules for design approach? Illustrate it with an exercise.		
week 6	Saturday	24/7/21	Design and analysis through solving numericals.		
week 7	Saturday	31/7/21	Introduction to retaining walls and basement walls. Design and analysis through solving numericals.		
week 8	Saturday	7/8/21	Continuation to the previous week's topic. Design and analysis through solving numericals.		
week 9	Saturday	14/8/21	Understanding of combined footings like rectangular, strip, raft footings.		
week 10	Saturday	21/8/21	Continuation to the previous week's topic. Design and analysis through solving numericals.		
week 11	Saturday	28/8/21	Class exercise		
week 12	Saturday	4/9/21	Introduction to tall structures. Theory and principles of structural design involved		
week 13	Saturday	11/9/21	With emphasis on Wind forces and earthquake resistant mechanisms		
week 14	Saturday	18/9/21	Hands on experiment with making ice-cream stick models of high rise towers.		
week 15	Saturday	25/9/21	Class exercise		
week 16	Saturday		Revision		

EVALUATION CRITERIA	basis for judgement of assignments and priority of parameters for evaluation if any
LEARNING OUTCOMES	
READING LIST	Strength of Materials by Rammruthum, Foundation Engineering by B.C. Punmia and P.C. Varghese

## CO-PO mapped syllabi of B.Arch Course 2021-2022 – Theory and Design of Structures 7

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Theory and Design of Structures 7**  
**Course Code: BARC 704**

**Sem 7**

**Name - 4th Year**

**Course Objectives:**

1. Analysis and design of Retaining walls, Pile Foundations and Combined/eccentric Footings.
2. Study of Earthquake Resistant Structures, understanding the know- how of its mechanisms.
3. Theory and principles of structural design of tall buildings.
4. Developing and understanding of the kind of structural systems that are required for high-rise towers. Starting from the foundations to understanding the structural skeleton of the building.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	In-depth understanding of the design and analysis of retaining walls, pile foundations and types of footings in the structural system
CO2	Introduction to tall structures. Theory and principles of structural design involve in designing high-rise buildings with an emphasis on wind forces and earthquake resistant mechanism
CO3	Introduction to retaining walls and basement walls and various types of footings used in structural system. Design and analysis through solving simple numerical
CO4	Develop a perspective on the importance of technical knowledge and its application with respect to the role of an architect as a professional.

**Rubrics:**

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 100	Exercise 01 & 02: Marks out of	Credits	Date of submission		
21-22 FOURTH YEAR Sem 07	Theory and Design of Structures 7	BARC 704	BARC 704	50	50	3			
<b>Exercise: Title</b>	Hands on experiment with making ice-cream stick models of high rise towers.								
<b>Exercise Note / Task</b>	Group Exercise								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Data Gathering/ monitoring and collating</b>	All data to be collected from reliable sources with references included in the reports. Exceptional in showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected.	All data to be collected from reliable sources with references included in the reports. Showcasing well outstanding insights adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing Outstanding insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Most of the data to be collected from reliable sources with references included in the reports. Showcasing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Data collected is from adequate sources with most references included in the reports. Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Data collected is from adequate sources with most references included in the reports. Showcasing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Generic methods of analysis	Not informed process of adaptation of tools and frameworks
<b>Depth of Inquiry and ability to generate analytical drawings</b>	Exceptional analytical drawings and clarity in explaining the concept and architectural design intent	Well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Excellent curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
<b>In-depth understanding a theory and its application in the architectural field</b>	Exceptional analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Well curated outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Very well curated outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation that allows for the identified architectural expression.	Excellent curation using outstanding analytical drawings and clarity in explaining the concept, architectural design intent and the tectonic articulation.	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent.	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent.	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry
<b>Representation Technique and final submission</b>	Very well formatted presentation explaining	Well formatted presentation explaining concepts, process	Clear formatted presentation explaining concepts, process	Very good formatted presentation explaining	Good formatted presentation explaining concepts, process	Fairly formatted presentation explaining concepts, process	Barely managed to get clarity of intent and study using poor	Less clarity in terms of ideas and processes to be followed	Absolute no clarity of thought and

	concepts, process adopted using various tools and techniques	adopted using various tools and techniques	adopted using various tools and techniques	concepts, process adopted using various tools and techniques	adopted using various tools and techniques	adopted using various tools and techniques	diagrams and sketches		understanding of the subject
<b>Ability to demonstrate the Learnings from the discussions conducted in class</b>	Showcasing 100% ability to translate theoretical knowledge into practice	Showcasing 90% ability to translate theoretical knowledge into practice	Showcasing 80% ability to translate theoretical knowledge into practice	Showcasing 70% ability to translate theoretical knowledge into practice	Showcasing 65% ability to translate theoretical knowledge into practice	Showcasing 60% ability to translate theoretical knowledge into practice	Showcasing 55% ability to translate theoretical knowledge into practice	Showcasing 50% ability to translate theoretical knowledge into practice	Zero understanding and application of theoretical knowledge
<b>Attendance and participation in the discussions</b>	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence

COPO Mapping Setup for Sem 7

CO-PO mapping for a course of “Theory and Design of Structures 7”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	In-depth understanding of the design and analysis of retaining walls, pile foundations and types of footings in the structural system	2	3	0	0	1	1	1	0
CO2	Introduction to tall structures. Theory and principles of structural design involve in designing high-rise buildings with an emphasis on wind forces and earthquake resistant mechanism	1	2	2	3	2	2	2	2
CO3	Introduction to retaining walls and basement walls and various types of footings used in structural system. Design and analysis through solving simple numerical	0	2	3	1	1	3	2	1
CO4	Develop a perspective on the importance of technical knowledge and its application with respect to the role of an architect as a professional.	2	0	1	3	2	0	1	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>CODE NO. OF COURSE - 708</b>	<b>COURSE NAME</b>	Architectural Building Services 5	<b>SEMESTER</b>	7	<b>CREDITS</b>	3
	<b>FACULTY</b>	Minal, Swati	<b>SESSIONAL MARKS</b>	50	<b>SCHEME OF EXAMINATION</b>	Sessional Marking and one Theory paper - 50 marks
	<b>TIME</b>	Thursday – 1.20 – 3.50	<b>TEACHING HOURS</b>	150 minutes/week	<b>TIME REQUIRED OUTSIDE OF CLASS</b>	2 hours a week
<b>UNIVERSITY COURSE DESCRIPTION</b>	Natural ventilation • Heating of spaces – local and central heating • Heating equipments • Comfort conditions, temperature control, humidity control, air filtration, rate of ventilation. • Mechanical ventilation in buildings. • Plenum system, exhaust system, plenum and exhaust system. • Fans, blowers and air filters. • Thermal conductivity and insulation. • Air conditioning – refrigeration and air cycle. • Various systems of air conditioning - Unit, split, Package, Direct Expansion, Chilled water System. • Duck work and air conditioning layout, fittings and fixtures. • Hot water supply integrated with heating of spaces					
<b>PEDAGOGIC INTENT</b>	The Architectural Building Services course this semester intends to introduce the advanced and complex technological understanding of various building services in high rise buildings with the focus on achieving suitable indoor ambience. The Course focus on advanced mechanical ventilation alternatives available and comprehending understanding to use appropriate system as per context.					
<b>METHODOLOGY</b>	Theory Lectures, Small Exercises, Case - studies.					
<b>SCHEDULE</b>	<b>DAY</b>	<b>DATE</b>	<b>TEACHING CONTENT OF THE DAY</b>	<b>MARKING DISTRIBUTION</b>	<b>ASSIGNMENT/DELIVERABLE</b>	
week 1	MON	17-Jun-21	INTRODUCTION to syllabus. Site planning and design consideration			
week 2	MON	24-Jun-21	Site planning and design consideration continue			
week 3	MON	01-Jul-21	Basement planning - space requirement, amenities such as ramps, parking, fire fighting requirements, structural system as an extension of building.			
week 4	MON	08-Jul-21	Retaining walls, light and ventilation, Mechanical Ventilation drainage and precautions for flooding.			
week 5	MON	15-Jul-21	Human comfort levels, indoor ambient temperatures and passive cooling strategies, solar chimneys, geothermal, radiant cooling etc			
week 6	MON	22-Jul-21	Sustainable strategies for high rise building - water and energy			
week 7	MON	29-Jul-21	Air Conditioning - various systems of AC. From unit system to central system.			
week 8	MON	05-Aug-21	Air conditioning - theory of air conditioning, space requirements, chilled water and direct expansion systems. Components of AC - AHU, cooling tower, ducting			
week 9	MON	12-Aug-21	Lecture on Ducting - structural system to guide ducting, components of ducting, and briefly calculations			
week 10		19-Aug-21	Hot water systems - heater types, principles and working of systems, central systems and types, spaces required, solar heaters			
week 11		26-Aug-21	HVAC - heating of spaces - scale of heating, unit as well as central, integration of hot water supply and heating, heat recovery, and alternative technology such as solar and geothermal			
week 12		02-Sep-21	Revision through case study of integration of technology and architecture			
week 13		09-Sep-21	case study of high rise building services/site planning			
week 14		16-Sep-21	Technology Studio Project Discussion			
Week 15		23-Sep-21	Technology Studio Project Discussion			
Week 16		30-Sep-21	Technology Studio Project Discussion			
<b>EVALUATION CRITERIA</b>	The criteria for evaluation is basic understanding of services as an integral part of architecture and their importance for achieving not only basic comfort for human habitation but as a design strategy. Assignments are to evaluate this understanding in their application.					
<b>LEARNING OUTCOMES</b>	1. The outcome expected is understanding of natural ventilation, orientation, and envelop of building and its role in reducing air conditioning loads. 2. Basements planning and Mechanical ventilation and detailed working layout of the same. 3. Various Air conditioning system, tonnage calculation and its impact both environmentally as well as costing. Airconditioning is calculated and represented through detailed drawings. 4. Heating of spaces as a part of HVAC and its integration with domestic hot water supply.					
<b>READING LIST</b>	B 14 Mechanical and Electrical Systems in Buildings B 16 Mechanical and Electrical Systems in Construction and Architecture B 1290 Energy Conservation Standards: for building design, construction and operation. B 4542 Building Services: Electro Mechanical and Environmental Services B 1922 Mechanical Systems for Architects. B 2222 Building Energy Management Systems: an application to heating and control. B 2234 Air-Conditioning: a practical introduction. B 3294 Mechanical and Electrical Equipment for Buildings. B 3879 Advanced Building Systems: a technical guide for Architects and Engineers.					

**CO-PO mapped syllabi of B. Arch Course 2021-2022 – Architectural Building Services 5**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorize and conceptualize ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project.
6. To enable the student to observe, experience, analyze space, its physicality, and its associations through the body.
7. To enable the student to extract the abstract from the experiential and center it as the basis of design.
8. To enable the student to break the boundary between abstract thought and material realities.
9. To enable students to discover multiple methods and tools to develop their own process of learning.
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive ways of intervening as architects through critical thinking.
2. To enable students with design skills that can navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that can navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding of cultures outside of their own comfort zones. (Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Building Services 5**

**Course Code: 708**

**Sem 7**

**Fourth Year**

**Course Objectives:**

The Architectural Building Services course this semester intends to introduce the advanced and complex technological understanding of various building services in high rise buildings with the focus on achieving suitable indoor ambience. With an intent towards achieving green and regenerative architecture in terms of resource and energy management, this course enables students to integrate appropriate and efficient traditional as well as new thermal comfort strategies in their architectural design projects. The course expands and elaborates on the systems already taught in previous years to accord with the complexities of high-rise buildings through various case studies.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To enable students to understand the importance of thermal comfort and arrive at solutions by applying passive strategies.
CO2	To enable students to understand components and workability of various HVAC systems within a building and capability to choose right systems
CO3	To make students explore the integration of various infrastructural systems in high rises or large complex buildings and realize the relevance of services in architectural design, using a case study-based approach.

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelor of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks:	Exercise 01 & 02: Marks out of	Credits	Date of submission		
FOURTH YEAR - SEM 7	Arch. Building services		BARC 708	50		3	Multiple		
Exercise: Title	Basement Planning and Hvac Systems for their project								
Exercise Note/task	Detailed drawings with plan, sections, and details for basement as well as HVAC system								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Understanding of systems and their integration with other systems as well as with space</b>	1)Complete understanding of systems 2) its integration with other system 3) its hierarchy in planned space	1)Very good understanding of systems 2) its integration with others and its position in planned space.	Good understanding of systems and its integration and its position in planned space.	Fairly good understanding of systems and their integration and their position in planned space.	1)Understanding of a system is seen along with other systems 2) lacking spatial integration.	1)Lesser understanding of the system is seen along with other systems 2) lacking spatial integration.	1)Poor understanding of the system. 2)No understanding of integration with other systems.	Extremely poor understanding of the system.	Non-Submission
<b>Representation Technique and final submission</b>	Logical and semantic representation	Logical representation	Good representation in all aspect	Good representation in all aspect	Fairly represented in all aspect	The drawings could be understood	Representation needed clarification	Drawings not clear enough	Non-Submission
<b>Attendance, time management and participation in Studio</b>	Attends 95% of total classes	Attends 90% of total classes	Attends 85 % of total classes	Attends 80% of total classes	Attends 75% of total classes	Attends 70% of total classes	Attends 60% of total classes	Attends 55% of total classes	Attends less than 50% of total classes

**CO-PO Mapping**

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To enable students to understand the importance of thermal comfort and arrive at solutions by applying passive strategies.	2	2	2	1	0	1	3	3
CO2	To enable students to understand components and workability of various HVAC systems within a building and capability to choose right systems	0	0	0	0	2	1	3	3
CO3	To make students explore the integration of various infrastructural systems in high rises or large complex buildings and realize the relevance of services in architectural design, using a case study-based approach.	2	2	2	0	2	1	3	3



<b>COURSE CODE</b>	BARC 707	<b>CREDITS</b>	5 (3+2)
<b>COURSE NAME</b>	Architectural Representation and Detailing VII	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Kimaya, Dyanesh, Vikram, Shrey, Devesh, Raj	<b>EXAM SCHEME</b>	External
<b>CLASS DAY/TIME</b>	8.00-12.20	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	The course at KRVA looks at statutory provision as a broader framework wherein the students are encouraged to explore different statutes, guides and reference materials and cover the statutory provisions for creating a better living environments while being sensitive of the ecological sustenance. Themes ranging from safety, light & ventilation, sanitation, infrastructure, construction processes, waste disposal etc. were studied and presented
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<b>COURSE METHODOLOGY</b>	Introduce and orient through lectures, Expose to sites and case studies, simulate exercises & resolve problems and designs.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	15/6/21	Introduction: Requirement of Byelaws and DCR		
2	22/6/21	Study trip		
3	29/6/21	Review - Secondary data collation for Lucknow/Varanasi (DCR, Guidelines, Regulations and building codes)		
4	6/7/21	Statutory Submission - Introduction		
5	13/7/21	Safety - Fire & Disasters		
6	20/7/21	Light and Ventilation		
7	27/7/21	Parking and Vehicular movement		
8	3/8/21	Health & Hygiene		
9	10/8/21	Construction and waste disposal		
10	17/8/21	Services - Water supply and drainage		
11	24/8/21	Calculations - BUA		
12	31/8/21	Calculations - BUA		
13	7/9/21	List of Approval Drawings		
14	14/9/21	Statutory considerations of design / plan		
15	21/9/21	Approval drawings		

<b>LEARNING OUTCOMES</b>	Student is expected to be oriented towards designing and resolving buildings in regions of seismic, topographical and geotechnical challenges. She/ he will also have an orientation of how a high rise building is planned and constructed.
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<b>READING LIST/ REFERENCES</b>	
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CO-PO mapped syllabi of B.Arch Course 2021-2022 – *Architectural Representation and detailing VII*

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognise and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Representation and detailing VII**

**Course Code: BARC 707**

**Sem 7**

**Fourth Year**

**Course Objectives:**

**Develop skills of students in reading the DCR and understanding key concepts relating to approval of the project  
 Develop understanding of municipal drawings, their need and developing skills to draw and represent design in required formats Conversion of previously worked and resolved design into municipal drawings to understand FSI and other perspectives from the DCR Develop understanding of various materials, processes involved in construction and develop skill to write their specifications**

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	<b>To understand bye laws and their application</b>
CO2	<b>To analyze critical concerns, loopholes and design in accordance</b>
CO3	<b>To create approval drawings in accordance with studios.</b>

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	To understand bye laws and their application	2	2	2	1	0	3	3	3
CO2	To analyze critical concerns, loopholes and design in accordance	2	2	2	0	3	2	2	1
CO3	To create approval drawings in accordance with studios.	2	2	2	1	3	2	2	1

Year of Assessment: 2023-2024	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelor of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks:	Exercise 01 & 02: Marks out of	Credits	Date of submission		
FOURTH YEAR - SEM 7	Architectural representation and detailing		BARC 707	100		5			
Exercise: Title		Municipal drawings							
Exercise Note/task		Create drawings in accordance with bye-laws							
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Understanding and application of bye laws		Thorough understanding of explored interventions	Very good understanding of explored interventions	Good understanding of explored interventions	Fair understanding of explored interventions	Satisfactory understanding of explored interventions	Understanding of explored interventions	Below average understanding of explored interventions	Poor understanding of explored interventions
Representation Technique and final submission		Very well formatted presentation	Well formatted presentation	Clear formatted presentation	Very good formatted presentation	Good formatted presentation	Fairly formatted presentation	Barely managed to get clarity of intent	Less clarity in terms of ideas and processes
Lenses of inquiry	Extremely complex, new and original level of inquiry	Extremely complex, and comparatively new and comparatively original level of inquiry	Complex, and original level of inquiry	Moderate and original level of inquiry	Moderate and continued from earlier study level of inquiry	Normal and continued from earlier study level of inquiry	Normal and low level of inquiry	Normal and poor level of inquiry	Absence of inquiry

<b>Ability to demonstrate the Learnings from the Lecture</b>	Extremely well-articulated	Very well-articulated	Well articulated	Articulated normally	Moderately Articulate	Less Articulate	Needs work	No Articulation	No Attempt	

<b>COURSE CODE</b>	710	<b>CREDITS</b>	3 (2 PP , 1 SP)
<b>COURSE NAME</b>	Professional Practice 1 (Professional Practice 1 + Situating Practice)	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Professional Practice 1 Mamta, Shantanu Situating Practice Nemish, Rutika	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Tuesday: 3.00 – 3:50 pm Tuesday: 1.30-3:00 pm	<b>NON-CLASS TIME</b>	-

*NOTE: The professional practice 1 course has been divided into 2 segments: Professional practice and stating practice. The former deals with the complexities of architectural practice and the latter deals with key theoretical developments in architectural practice. Thus, the two sub courses become one complete course*

### COURSE 1 – PROFESSIONAL PRACTICE

<b>COURSE CODE</b>	BARC 710	<b>CREDITS</b>	2/3 PP
<b>COURSE NAME</b>	Professional Practice 1	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Mamta, Shantanu	<b>EXAM SCHEME</b>	50
<b>CLASS DAY/TIME</b>	Tuesday 15 00 to 16 40	<b>NON-CLASS TIME</b>	2

<b>PEDAGOGIC INTENT</b>	Deconstructing Architectural Practice - <ul style="list-style-type: none"> <li>Idea of Practice: The idea of the 'office' or the 'firm' and its different contemporary forms.</li> <li>Unpacking Practice: A run-through of the legalities, technicalities, and ethical concerns that shape contemporary practices.</li> <li>Innovative Practices: Examples and case studies decoding how practices can be conceptualized and executed differently from mainstream practices.</li> <li>Guest Interactive Sessions: These sessions will include external practitioners who will talk about challenges of their practices.</li> </ul>
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<b>COURSE METHODOLOGY</b>	Investigate and probe contemporary practices Architectural careers range across a wide spectrum, from government service to activism. Interaction with architects who engage in said practices will be arranged to give the students a look into the inner workings of the profession.  Lecture Inputs, Interviews Institute internship analysis sheet
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	15/06/21	Introduction to the Architectural Profession - Ideation, the skills imparted and the various avenues that one could opt for after graduation Choice of practice: Architectural careers range across a wide spectrum, from government service to activism. Interaction with architects who engage in said practices can be arranged to give the students a look into the inner workings of the profession. Some possible examples of careers can be: Design firms, Liasoning firms, Development Finance, SRA, Government Agencies. The speakers can be asked to touch upon various aspects of their practice such as scope of work, necessary skill sets, financial models etc.	In small groups (three each), students will curate and conduct interviews with different practitioners in and around the city (or virtually), understanding the nature of their practice, their journeys, their positions on practice, and their outlook towards the future of practice. These interviews can be recorded or students can make notes and make a presentation reflecting on their takeaways from these interviews.	
2	22/06/21	Inception of professional bodies - History, background and intent. Architect's Registration Act 1972, COA - Duties and responsibilities		

3	29/06/21	Lecture + Discussion. Code of Conduct+ Ethics + Responsibility in practice
4	06/07/21	Idea of the practice: Setting up of practice (Fees, remuneration, philanthropy etc)
5	13/07/21	Designing In Practice: Modes of conducting practice
6	20/07/21	Relationships: Tenders, Contracts, Liability, Project Delivery Methods
7	27/07/21	Relationships: Tenders, Contracts, Liability, Project Delivery Methods
8	03/08/21	Mock Practice: Exercise 1: Challenges of maintaining client architect relationships, pitching for projects within ethical limits etc
9	10/08/21	Architectural Competition - Types, rules and awards. External faculty input to provide insights into experiences of competitions.
10	17/08/21	Copyright Act - Theory and practical inputs
11	24/08/21	Working Studio
12	31/08/21	Working Studio
12	07/09/21	Presentations
13	14/09/21	Presentations
14	21/09/21	Condonation
15	28/09/21	Condonation

<b>LEARNING OUTCOMES</b>	Unpacking contemporary practices Domain of Positioning The study of the architecture will be used to explain one's position and the question of ethics and code of conduct will be explored out of that position.
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<b>READING LIST/ REFERENCES</b>	Architecture depends Book by Jeremy Till The Architecture Student's Handbook of Professional Practice - By American Institute of Architects Theory of Practice and Practice of Theory by Chandavarkar The Medici Effect:Frans ohansson A Place in the Shade: Charles Correa Women Architects in India: Histories of Practice in Mumbai and Delhi The Architecture Chronicle: Diary of an Architectural Practice Book by Jan Kattei Prospects for a critical regionalism
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## COURSE 2 – SITUATING PRACTICE

<b>COURSE CODE</b>	BARC 710	<b>CREDITS</b>	1/3 SP
<b>COURSE NAME</b>	Situating Practice 1	<b>SESSIONAL MARKS</b>	
<b>FACULTY</b>	Nemish, Rutika	<b>EXAM SCHEME</b>	
<b>CLASS DAY/TIME</b>	Tuesday 1:30 to 3:00	<b>NON-CLASS TIME</b>	2

<b>PEDAGOGIC INTENT</b>	<p>We think of Modernity, and consequently, Modern Architecture as a singular event that emerged out of the western world and spread all over the world. But as we know by now, there is no one, singular narrative to the story of Modernity. Modernity manifested itself in different places and at different times, in many different dimensions. The origins of these different strands of modernities are located within their own histories and their own particular encounters with forces of western modernity.</p> <p>The idea of the course is to understand these different modernities, and Modern Architecture in particular, as they emerged in different cultures around the world, and armed with that understanding, looking closely at Indian Modernity. Through this understanding of the growth of Indian Modern Architecture, we will trace its different trajectories. We will also study and examine examples of architecture across time and try and understand common themes within this idea of an Indian Modern Architecture.</p>
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<b>COURSE METHODOLOGY</b>	<p>The course will be run as a seminar. There will be a required reading list for each class. Each class will be structured as an initial presentation of 30-45 mins, and at the end of the presentation, there will be a group discussion and students will be asked to discuss / elaborate their opinions.</p> <p>Periodically, classes are allocated to student presentations. 10 projects will be presented by the students in each of these classes. The presentations will have to be original analysis and critical / close reading of those buildings, in terms of the larger meanings / ideas and ideologies of the buildings and their Architects. The presentations are meant to lead to a larger discussion of the themes and ideas which will be discussed in the class.</p>
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	15/06/2021	Alternative Modernism: An Introduction In this, the first part of the introduction, we will discuss the varied meanings of MODERN / MODERNITY / MODERNISM - and especially as applied to the arts and ARCHITECTURE. The beginnings of Modernity (Starting with Colonisation of the rest of the world by Europe and till the Decline of Colonisation). Around the turn of the century, and by the middle of the century, almost all of the world, which was till then ruled by a few European countries, got freed from the yoke of capitalism.		
2	22/06/2021	Alternative Modernism: An Introduction The Story of Modernism unfolded in different ways in countries such as Mexico, Turkey, Algeria, China, Japan, the African Continent, Brazil, India, Sri Lanka and so on. We will briefly see how this happened, what were the roots of this Architectural Modernism and what were the political, social and aesthetic compulsions behind it. In a sense, this overview will give us a better, overall idea of the story of Architectural Modernism, and help us look at the birth, genesis and trajectory of Modernism in India through a much bigger lens than is usually seen.		
3	29/08/2021	The Idea of National Identity The idea of Architecture as an active producer of a National Identity. From Early Nehruvian impulses at Chandigarh / Bhakhra Nangal / Habib Rehman - to the India Pavilions to a resurgent India Sabarmati Riverfront / Amravati / Central Vista etc. MARG / VISTARA / SOA		
4	06-07-2021	Student Presentations and Discussion		
5	13-07-2021	The Idea of Style (or Formal Prerogatives) Starting from Charles Correa's Gandhi Ashram - as discussion of stylistic preoccupations in independent India. How the early modernisms of architects in India turned from being under the awe of Corb and Louis Kahn to an indigenous / regional style? From there to the Post-modernism of Hafeez Contractor and the Developer Architects - and then to the imitation of Global Styles (turning Mumbai to Shanghai etc..)		
6	20-07-2021	Student Presentations and Discussion		
7	27-07-2021	THE IDEA (or RETURN) OF TRADITION (OR INDIGENIOUS MODERNITIES) Starting with the design of the Central Vista (by Lutyens and Baker) and the teaching of Claude Bately - to other ideas of		

		traditional Architecture in India. Birla Temples / Akshardham / Raj Rewal / Vasant and Rewathi Kamath / Abhikram /
8	03-08-2021	THE CRITICAL / REGIONALIST TURN Starting with the Architecture of Antonin Raymond and Joseph Allen Stien, a discussion on regionalist practice - which, although Modern, attempted to create an architecture seeped within the traditions or Modern Architecture, but as well as appropriately negotiating the Indian Condition
9	10-08-2021	Student Presentations and Discussion
10	17-08-2021	THE IDEA OF PRACTICE From the Older traditions - of Master Builders / Craftsmen Architects - to the Sompura's - to the idea of the hands on Architects such as Laurie Baker / Nari Gandhi / Didi Contractor / to the new idea of practice such as Chitra Vishwanath / Roger Anger / Bijoy Jain - in Contrast to Larger practices or Collaborative practices...
11	24-08-2021	Student Presentations and Discussion
12	31-08-2021	Invited Discussion: Talking Education A discussion on the current trends in Architectural Education / the proliferation of architecture schools / quality and standards of education etc.
13	07-09-2021	Invited Discussion: Talking Discourse A discussion on the current quality of DISCOURSE and criticism in architecture (magazines / books etc) or the lack thereof.
14	14-09-2021	Invited Discussion: Talking Profession A discussion on the current trends in the profession between 2 different kinds of practices / their origins and modes of practice.
15	21-09-2021	Condonation
16	28-09-2021	Condonation

<b>LEARNING OUTCOMES</b>	<p>The attempt is to generate a discussion and investigation into the making of Indian Modernity and understanding it in relationship to the different forms of modernities that emerged in other contexts all around the world.</p> <p>This will enable the student to understand that history is not inevitable.</p> <p>It will also enable them to think of, and ask important questions of the past, and the present.</p>
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<b>READING LIST/ REFERENCES</b>	<p>Vincent Scully Jr, Modern Architecture - The Architecture of Democracy, George Braziller, 1961</p> <p>Peter Scriver, Amit Srivastava, India - Modern Architectures in History, Reaktion Books 2015</p> <p>Jon Lang, Madhavi Desai, Miki Desai, Architecture and Independence - A Search for Identity, India 1880-1980, Oxford University Press, 1997</p> <p>Hoshagrahar Jyoti, Indigenous Modernities : Negotiating Architecture, Urbanism, and Colonialism in Delhi Architext Series, Taylor and Francis Routledge 2005</p> <p>Partha Mitter, The Triumph of Modernism India's artists and the avant-garde 1922-1947, Reaktion Books 2007</p> <p>Ravi Kalia, Chandigarh, The Making of an Indian City, Oxford University Press, 1987</p> <p>Stephen Toulmin, Cosmopolis, The Hidden Agenda of Modernity, The University of Chicago Press, 1990</p> <p>Sunil Khilnani, The Idea of India, Penguin Books, 2012</p> <p>James Holston, The Modernist City - An Anthropological Critique of Brasilia. University of Chicago Press, Chicago 1989</p> <p>Luis E Carranza, Architecture as Revolution, Episodes in the History of Modern Mexico, University of Texas Press, Austin.2010</p> <p>Jianfei Zhu, Architecture of Modern China, A Historical Critique. Routledge 2009</p> <p>Antoni S. Folkers Belinda A. C. van Buiten, Modern Architecture in Africa, Practical Encounters with Intricate African Modernity. Springer 2010</p> <p>Sibel Bozdogan, Modernism and Nation Building, Turkish Architectural Culture in the Early Republic. University of Washington Press, Seattle London. 2001</p> <p>Ari Seligman, Japanese Modern Architecture 1920-2015 Developments and Dialogues. The Crowood Press 2016</p>
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**CO-PO mapped syllabi of B.Arch Course 2021-2022 – Professional Practice 1**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Professional Practice 1**

**Course Code: BARC 710**

**Sem 7**

**Name: Fourth year**

**Course: Professional Practice 1**

**Course Code: BARC 710**

**Sem 7**

**Fourth Year**

**Course Objectives:**

The course intends to encourage students to investigate contemporary practices to decode the trajectory of the practices and examine the work culture through the ideological positions held by them

**Course: Situating Practice 1**

**Course Code: BARC 710**

**Sem 7**

**Fourth Year**

**Course Objectives:**

**The attempt is to generate a discussion and investigation into the making of Indian Modernity and understanding it in relationship to the different forms of modernities that emerged in other contexts all around the world.**

**This will enable the student to understand that history is not inevitable.**

**It will also enable them to think of, and ask important questions of the past, and the present.**

**Course Outcomes (CO):** (Combined course outcomes for Professional Practice 1 and Situating Practice 1)

Course Outcome (Co)	Description
CO1	<b>To understand the idea of practice by deconstructing contemporary practices how can they be conceptualized and executed differently from mainstream practices</b>
CO2	<b>To evaluate the consequence of myriad influences on practices to frame their ideological positions</b>
CO3	<b>To analyse various forms in which architecture practices can be manifested to contribute to the society at large</b>
CO4	<b>Preparing Students to understand the Making of Modern Indian Architecture through its own history and the history of modern architecture around the world.</b>
CO5	<b>Preparing students to make critical analyses and understand complex questions of Nation, Identity and History.</b>

**Rubrics 1 for Professional Practice 1:**

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	University Subject Code	Sessional Marks:	Exercise 01 Marks:	Credits 2/3	Date of submission			
21-22 FOURTH YEAR - SEM 07	Professional Practice 1	BARC 710	50	50					
<b>Exercise: Title</b>	Exploring forms of practice through different modes, technicalities, legal frameworks etc.								
<b>Exercise Note / Task</b>	Conduct interviews with different practitioners in and around the city (or virtually), understanding the nature of their practice, their journeys, their positions on practice, and their outlook towards the future of practice								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% - 55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Lenses of inquiry</b>	Extremely complex, new and original level of inquiry	Extremely complex, and comparatively new and comparatively original level of inquiry	Complex, and original level of inquiry	Moderate and original level of inquiry	Moderate and continued from earlier study level of inquiry	Normal and continued from earlier study level of inquiry	Normal and low level of inquiry	Normal and poor level of inquiry	Absence of inquiry
<b>Ability to demonstrate the Learnings from the Studio</b>	Extremely well-articulated	Very well-articulated	Well articulated	Articulated normally	Moderately Articulate	Less Articulate	Needs work	No Articulation	No Attempt
<b>Attendance, time management and participation in Studio</b>	100 % attendance, working and high level of interaction in the studio	80 % attendance, working and high level of interaction in the studio	75 % attendance, working and high level of interaction in the studio	70 % attendance, working and high level of interaction in the studio	65 % attendance, working and good level of interaction in the studio	60 % attendance, working and good level of interaction in the studio	55 % attendance, working and good level of interaction in the studio	50 % attendance, not working and low level of interaction in the studio	less than 50% attendance, not working and no level of interaction in the studio



Rubrics 2 for Situating Practice 1:

USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture									
Year of Assessment: 2021-2022									
Year & Sem	Subject:	University Subject Code	Sessional Marks:	Exercise : Marks out of	Credits	Date of submission			
21-22 Second Year SEM 7	Professional Practice ( Situating Practise)	BARC 710	50	50	1 of 3				
Exercise: Title	Reading a Building and its analysis in the context of idea of modern in and around India								
Exercise Note / Task	The students will be given a set of buildings categorized in different typologies with respect to the program. The students will analyze the building through spatial , contextual and temporal aspects. At the end each building will be diagrammed based on its spatial connotations, drawing relationships with its contemporary built forms during the same time period. FINAL SUBMISSION OF COMPENDIUM of BUILDING PLANS (DRAWINGS / ANALYSIS and TEXT)								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% -40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
Attendance and participation in the studio	95% to 100% attendance and extremely participative	90% to 95% attendance and visibly very participative	85% to 90% attendance and visibly participative	75% to 85% attendance and participative	70% to 75% attendance and participative	65% to 70% attendance and less participative	155% to 65% attendance and participative	50% to 55% attendance and not participative	Below 50% attendance and mostly absent in the studio
Developing a comprehensive theoretical framework as per the thematic and situating the building given in the same context	Highly Outstanding understanding of concepts and formal translation .Comprehensive writing skill	Moderately Outstanding understanding of concepts and formal translation	Outstanding understanding of concepts and formal translation	Excellent understanding of concepts and formal translation and completing	Very Good understanding of concepts and formal translation	Good understanding of concepts and formal translation	Mediocre understanding of concepts and formal translations	Low but decent understanding of concepts and formal translation	Poor understanding of concepts and does not contribute to the group in completion of the drawings
Developing arguments and developing a writing document which becomes basis for drawings Taking lead in Producing supreme quality drawings and completing the set of submission	Extremely involved in taking lead and completing the group work with extraordinary innovative drawings	Moderately but seriously involved in taking lead and completing the group work with highly innovative drawings	Less moderately but seriously involved in taking lead and completing the group work with very good quality drawings	Seriously involved in taking lead and completing the group work with very good quality drawings	Less Seriously involved in taking lead and completing the group work with very good quality drawings	Just for the sake involved in taking lead and completing the group work with very good quality drawings	Not much active in site work but completing the requirements for own	No active participation in class and partial completion of the work	Disinterested

CO1	To understand the idea of practice by deconstructing contemporary practices how can they be conceptualized and executed differently from mainstream practices	2	1	1	3	3	2	2	3
CO2	To evaluate the consequence of myriad Influences on practices to frame their ideological positions	3	1	1	3	3	2	2	3
CO3	To analyse various forms in which architecture practices can be manifested to contribute to the society at large	1	1	1	1	3	3	3	3
CO4	Preparing Students to understand the Making of Modern Indian Architecture through its own history and the history of modern architecture around the world.	2	1	1	3	2	2	3	2
CO5	Preparing students to make critical analyses and understand complex questions of Nation, Identity and History.	1	1	1	3	3	2	3	1

1 – Slight (Low) Correlation  
0 – No Correlation

2- Moderate (Medium) Correlation

3- Substantial (high) Correlation

<b>COURSE CODE</b>	BARP 720	<b>CREDITS</b>	3
<b>COURSE NAME</b>	College Projects (Research Methods)	<b>SESSIONAL MARKS</b>	Internal - 100
<b>FACULTY</b>	Hussain and Shweta	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/TIME</b>	Friday 1:20 pm to 3:50 pm	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	The Research Methods course for the 4th year of Bachelor of Architecture program will attempt to train students in pre-thesis research methodologies, with the aim of identifying a clear area of concern and a precisely articulated synopsis for their thesis projects which they will pursue in their 5th year, with their respective guides.
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<b>COURSE METHODOLOGY</b>	The course will consist of lectures and class exercises. Each week students will be expected to work in groups to respond to structured exercises prepared by the faculty. Course grading will be based partially on the performance in these tests.
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LECT	DATE	TEACHING CONTENT
1	18th June 2021	Introduction : Research as Systematic Enquiry
2	25th June 2021	Analyzing Arguments: ex. 1: identifying arguments, ex. 2 : identifying reasons
3	2nd July 2021	Analyzing Arguments:ex. 3: offering alternative explanations, ex. 4: assessing implications
4	9th July 2021	Analyzing Arguments: ex. 5: drawing conclusions, ex 6: identifying parallel arguments
5	16th July 2021	Making Arguments: ex. 7: Clarifying words or phrases, ex 8: writing a summary
6	23rd July 2021	Making Arguments: ex. 9: short, shorter, shortest (individual exercise)
7	30th July 2021	Making Arguments: ex. 10: the bibliography
8	6th August 2021	Making Arguments: 11: writing a review
9	13th August 2021	Making Arguments: ex. 12: structuring the argument
10	20th August 2021	Jury of Peers: ex 13: the peer review
11	27th August 2021	Identifying a Research Area: ex.14: the idea
12	3rd September 2021	Identifying a Research Area: ex 15: the research proposal
13	10th September 2021	Ganesh Chaturthi Break
14	17th September 2021	Final Submissions

<b>LEARNING OUTCOMES</b>	(1) methods of analyzing and critiquing arguments; (2) critical reading; (3) articulating ideas; (4) critical writing
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### CO-PO mapped syllabi of B.Arch Course 2021-2022\_College Projects 7

#### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

#### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to de-layer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

#### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort

zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: College Projects (Research Methods)**

**Sem: 7**

**Fourth Year**

**Course Objectives:**

- To understand strategies of architectural research.
- To organise facts and ideas based on individual experiences for ongoing research and for future use

**Course Outcomes (CO): (Research Methods)**

1. Understand methods of conducting research
2. Analyzing and critiquing arguments

**Rubrics (Research Methods):**

Year of Assessment: 2021- 2022		USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture							
Year & Sem	Subject:	University Subject Code	Sessional Marks: max 50	Exercise : Marks out of	Credits	Date of submission			
Fourth Year - Sem 7	College Projects 7 (Research Methods)	BARP 720	100	100	3				
<b>Exercise: Title</b>		Writing an Abstract for Thesis							
<b>Exercise Note / Task</b>		Identifying a clear area of concern and a precisely articulated synopsis for their thesis projects which they will pursue in their 5th year							
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Analyzing and critiquing arguments through critical reading and writing</b>	1) Extremely articulate in framing the area for inquiry. 2) Very clear structure for presentation. 3) Well researched	1) Very articulate in framing the area for inquiry. 2) Clear structure for presentation. 3) Well researched	1) Clear and Articulate in framing the area for inquiry. 2) Well researched structure for presentation.	1) There is clarity in the area of inquiry 2) Research and structure for presentation is fairly good.	1) The area of inquiry is fairly good 2) Research and structure for presentation can be better.	1) The area of inquiry is good 2) Research and structure for presentation is fair.	1) There is clarity in the area of inquiry 2) Research and structure for presentation is found lacking	1) There is potential for an area of inquiry but needs more clarity. 2) No research and structure for presentation	Non submission
<b>Participation in Studio</b>	Attends less than 95% of total classes	Attends less than 90% of total classes	Attends less than 85 % of total classes	Attends less than 75 % of total classes	Attends less than 70 % of total classes	Attends less than 65 % of total classes	Attends less than 60 % of total classes	Attends less than 55 % of total classes	Attends less than 50 % of total classes

CO-PO mapping for a course of "UG program"									
Sr. No.	CO description	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	Understand methods of conducting research	3	0	1	2	0	3	1	0
CO2	Analyzing and critiquing arguments	2	1	1	1	1	1	1	1

1 – Slight (Low) Correlation

2- Moderate (Medium) Correlation

3- Substantial (high) Correlation

0 – No Correlation

# Program Specific Objectives

# Fifth Year

1. To enable students to make decisions about the directions for their future practices through reflexive thinking and research further to their learning in earlier 4 years.
2. To enable an intersection of architectural practice with the academic space where both the school and the students make choices based on their particular interest.
3. To bring into the academic space, explorations of particular interests in the city.
4. To continue to urge students to pursue their interest in systemic understanding of architecture as tectonic as well as environmental.
5. To explore complex built forms through integration with archetype resolutions.
6. To urge students to develop an ethical choice for practice in context to the role that architecture should take on, in relation to history, ecology and making a more fair world.

# Fifth Year

## Pedagogic Intent

Primary Dialectical Questions: Self - Other / Analytical - Intuitive / Individual - Collective / Object - System / Technical - Social / Architect - Architecture

The Fifth Year is seen as a threshold from where students make decisions about the directions for their future practices. Having just come back from an internship programme, they would have had some experience of working as practitioner that they will draw upon in shaping these decisions. As such the fifth year is space for reflexive thinking through research. Through the Design Dissertation process, the student is asked to consider their own position with respect to the world and the modes through which they would choose to practice. The courses allow for a space where the student is enabled to ask these questions.

## Design Studios

### *Research Brief*

Courses: Bridge Studio, Design Dissertation, Research Writing Course

The Design Studio in the 9th Semester is imagined as a 'Bridge' Studio. This is a space for exploration where the students can choose areas of interest depending on what the school is offering. The school can also decide on the kinds of Bridge studios offered. These bridges can be both from the world of the profession inwards into the school bringing in the academic space areas of new areas of exploration that could inform the academic space; but could also be particular areas of interest in the city that the school is interested in pursuing. Each of these studios would thus have a different emphasis and students could choose which of these they would like to participate in. The Bridge studio thus becomes a space for exploration for faculty and students.

## The Technology and Representation Studios

### *Reflexive Questions*

Courses: Technology Studio, Technology Lecture 1, Technology Lecture 2

Having returned from the internship programme, the final year intent for the technology studios and lectures is that of reflexivity, specialization and research. Students are urged to pursue their research interest for understanding systems both Tectonic as well as Environmental. Exploring complex built forms and expanding their horizon through discussions in the areas of interest help them to pursue research as well as investigation by getting them involved with studio modules to help them integrate their findings with design resolutions. The 9th semester studio is also a space where the technology studio is integrated with the concerns that emerge out of the student's design dissertation. The student has to integrate a detailed understanding of material, construction and environmental systems within their design projects. There is an attempt to allow a student to make choices for her projects by providing her with a support structure of varying specializations that she can access to evolve her project holistically.

## Architectural Theory

Courses: Professional Practice, Architectural Theory

The course is an introduction to concepts in critical theory, frameworks or analysis, looking through works across disciplines. Students evolve ways of applying these frameworks for analysis to contemporary cultural objects/ phenomena. The Professional Practice course explores the current scenario of the building profession within legislative, institutional and economic frameworks.

## Allied Design

Courses: Bridge Studio

# Semester 9

## Scheme of Teaching and Examinations

### Scheme of Teaching and Examinations Bachelor of Architecture (B. Arch.)

#### Semester IX

Semester IX Exam conducted by college		Teaching Scheme		Credits		
Course code	Courses	Lecture	Studio	Theory	Studio	Total
BARC 901	Architectural Design Studio 8		8		8	8
BARC 902	Allied Design Studio 8	2	3	2	3	5
BARC 903	Architectural Building Construction 8	2	2 classes of technology studio	2	1	3
BARC 904	Theory and Design of Structures 8	1		1	1	2
BARC 908	Architectural Building Services 6	1	2 classes of technology studio	1	1	2
BARC 906	Environmental studies 4	2		2	1	3
BARC 910	Professional practice 2	3		3		3
BARC 911	Design Dissertation 1	1	3	1	3	4
BARC 921	Elective 8		3		3	3
BARC 922	Elective 9		3		3	3
	<b>Total</b>	<b>14</b>	<b>22</b>	<b>14</b>	<b>22</b>	<b>36</b>

Semester IX Exam conducted by college		Examination Scheme			
Course code	courses	Theory (paper)	Internal	External viva	Total
BARC 901	Architectural Design Studio 8		100	100	200
BARC 902	Allied Design Studio 8	50	50		100
BARC 903	Architectural Building Construction 8		100		100
BARC 904	Theory and Design of Structures 8		50		50
BARC 908	Architectural Building Services 6		50		50
BARC 906	Environmental studies 4		100		100
BARC 910	Professional practice 3	50	50		100
BARC 911	Design Dissertation 1		50	50	100
BARC 921	Elective 8		100		100
BARC 922	Elective 9		100		100
	<b>Total</b>	<b>100</b>	<b>650</b>	<b>150</b>	<b>1000</b>

# Semester 9

# Semester 9

## Time-Table

	monday	tuesday	wednesday	thursday	Friday	Saturday				
9-9-50	<b>Architectural Design Studio</b>		<b>Research Methods: Allied Design</b>		<b>Design Dissertation</b>		<b>Architectural Design Studio</b>		<b>Technology Studio,</b>	
	<i>barc 901</i>	4 of 8	BARC 902	5	<i>barc 911</i>	4	<i>barc 901</i>	4 of 8	<i>barc 903, Barc 904, bbarc 908, Barc 906</i>	1 abc, 1 tos, 1 abs, 1 evs
9.50-10.40	Kalpita	Mayuri	Hussain	Pinkish, Ainsley, rohann, Paul, George, Ginella, jimmy, shirish, sonnal, apurva, nemishh, Nikhhil, Jude, vandana, Shilpa, shweta, ta vatsal		Kalpita	Mayuri	ainsley	Jimmy	
	shantanu p	Manisha	Ginella	Sara		shantanu p	Manisha	kimaya	Minal	
10.40-11.30	Manoj				Manoj		Shantanu			
	Ginella	Aditya			Ginella	Aditya	Vikram			
11.30-12.20	Apurva				Apurva					
12.20-1.20										
1.20-2.10	<b>Professional Practice</b>		<b>Technology Lecture 1 - Environmental Studies + ABS</b>		<b>Advanced Theories - elective 8</b>		Technology Lecture 2 - ABC, TOS			
	<i>Barc 910</i>	3			<i>Barc 908, Barc 906</i>	2 evs, 1 ABS	<i>barc 921</i>	3	Barc 903, barc 904	2 ABC, 1 TOS
2.10-3.00	Mamta	George			minal	Kimaya	sonal, rutika	Amisha	vikram	Jimmy
3.00-3.50										



<b>COURSE CODE</b>	BARC 901	<b>CREDITS</b>	8
<b>COURSE NAME</b>	Architectural Design Studio VIII	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	KayzaGinella & Apoorva Kalpit & Mayuri Manisha & Shantanu Manoj & Aditya	<b>EXAM SCHEME</b>	External Viva
<b>CLASS DAY/TIME</b>	8-11.20- Tuesday & Friday	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	This course will comprise two parts - a preliminary research part and the main design project. It is envisaged that the research will build and inform the design project.
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<b>COURSE METHODOLOGY</b>	The method/s will be in conjunction with the intent of the studio the site and the theoretical premise of the studio. This has to be developed by the faculty.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	15th June 2021 18th June 2021	Introduction		
2	22nd June 2021 25th June 2021	Review		10 Marks
3	29th June 2021 2nd July 2021	Review		10 Marks
4	6th July 2021 9th July 2021	Studio Discussion		
5	13th July 2021 16th July 2021	Studio Discussion		
6	20th July 2021 23rd July 2021	Studio Discussion		
7	27th July 2021 30th July 2021	Studio Discussion		
8	3rd August 2021 6th August 2021	REVIEW Holiday		20 Marks
9	10th August 2021 13th August 2021	Studio Discussion		
10	17th August 2021 20th August 2021	Studio Discussion		
11	24th August 2021 27th August 2021	REVIEW		10 Marks
12	31st August 2021 3rd September 2021	Studio Discussion		
13	7th September 2021 10th September 2021	Studio Discussion		
14	14th September 2021 17th September 2021	PREFINAL		20 Marks
15	21st September 2021 24th September 2021	Studio Discussion		
16	28th September 2021 1st October 2020	JURY		30 Marks

<b>1LEARNING OUTCOMES</b>	Use research and analytical tools to define a design program. Understand and situate various models of the typology within the city's historical, social, economic, and political contexts. Develop the ability to evolve spatial organization alternatives while taking into consideration simultaneous parameters Develop skills to complete the design arc from the conceptual idea to a coherent architectural solution that is formally, spatially, and functionally resolved.
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<b>READING LIST/ REFERENCES</b>	Recommendations by tutors
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**CO-PO mapped syllabi of B.Arch Course 2021-2022 –**

**Architectural Design Studio 8**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete.
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Design Studio 8**

**Course Code: BARC 901**

**Sem 9**

**Name 2021-22**

**Course Objectives:**

Use research and analytical tools to define a design program.  
 Understand and situate various models of the typology within the city's historical, social, economic and political contexts.  
 Develop ability to evolve spatial organization alternatives while taking into consideration simultaneous parameters.  
 Develop skills to complete the design arc from the conceptual idea to a coherent architectural solution that is formally, spatially and functionally resolved.

**Course Outcomes (CO):**

**Rubrics:**

Year of Assessment: 2017-2018	USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture									
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 100	Exercise 01: out of Marks	Credits	Date of submission			
FIFTH YEAR - SEM 9	Architectural Design Studio VIII		BARC901	100	100	8	End of term			
<b>Exercise: Title</b>	Design studio based on the individual sets of tutors									
<b>Exercise Note / Task</b>	The design studio is one project but has two parts the research component and the architectural design intervention.									
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>	

Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% -40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
Choice and Nature of Inquiry/ data gathering	Outstanding research work With information from secondary sources and literature review	Outstanding research work With information from secondary sources	Outstanding research work	Excellent research work	Very Good work	Work demonstrates good amount of rigour with respect to the studio intent.	Work demonstrates fair amount of rigour with respect to the studio intent.	Work just about demonstrates	Work does not demonstrate any learning
Critical thinking to Evaluate and analyse	In-depth Analysis leading to the creation of new knowledge	Analysis and With the production of new knowledge	Outstanding Analysis evolving into a relevant architectural brief	Excellent Analysis evolving into a relevant architectural brief	Very Good analysis with some correlation of an architectural brief to the context	Good amount of rigour with respect to the formulation of an architectural brief	Fair amount of thought with respect to the architectural brief.	Work just about demonstrates the architectural brief and the studio intent	Work does not demonstrate any learning
Application of the knowledge gained /manifestation & representation	Mature application of knowledge gained in all aspects	Maturity in the architectural manifestation and representation	Outstanding application of knowledge gained ,architectural manifestation & representation.	Excellent Learning outcome	Very Good learning and representation	Good amount of learning	Fair amount of learning	Work just about demonstrates the learning s in the studio	Work does not demonstrate any learning
Attendance/ participation in discussion	Very mature	Leadership in presentation	Proactive	Very enthusiastic	Very Good	Good amount of participation in the presentations	Fair amount of participation and attendance	Barely meets the minimum standards	Does not attend or participate

CO-PO mapping :									
Sr. No.	C O description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	The ability to collect and collate data from the context through primary and secondary research.	2	2	1	2	3	2	1	1
CO2	The ability to analyse the data and make inferences about the key issues based on the intent of the studio.	2	3	1	2	3	2	1	1
CO3	Ability to create an architectural brief with the program so as to intervene in the context/site.	2	3	3	2	2	2	2	1
CO4	Ability to represent the architectural scheme through drawings, renderings, multimedia and models	2	2	2	1	1	2	2	2

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 902	<b>CREDITS</b>	5
<b>COURSE NAME</b>	Allied Design: Research Methods	<b>SESSIONAL MARKS</b>	Internal - 50
<b>FACULTY</b>	Ginella, Sarah, Hussain	<b>EXAM SCHEME</b>	NIL
<b>CLASS DAY/ TIME</b>	Tuesday/ 9:00 am to 12:20 pm	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	The course is aimed at developing the argument structure for the final year thesis dissertation.
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<b>COURSE METHODOLOGY</b>	Students will be introduced to the various methodological problems (evidence, observation, reasoning, argument) of research, and the specific problems of research in the study of the built environment
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LECT	DATE	TEACHING CONTENT
1	6th July 2021	Introduction to the course
2	13th July 2021	Writing an Abstract
3	20th July 2021	Group Discussions: Draft of Abstract
4	27th July 2021	Group Discussions: Draft of Abstract
5	3rd August 2021	Introduction Chapter
6	10th August 2021	Group Discussion: Draft of Introduction Chapter
7	17th August 2021	Group Discussion: Draft of Introduction Chapter
8	24th August 2021	Literature Review
9	31st August 2021	Group Discussion: Draft of Literature Review
10	7th September 2021	Group Discussion: Draft of Literature Review
11	14th September 2021	Research Methodology
12	21st September 2021	Group Discussion: Research Methodology
13	28th September 2021	Chapterization
14	5th October 2021	Referencing and Bibliography
15	12th October 2021	Group Discussion: Final Volume
16	19th October 2021	Submission of first draft of Thesis Volume

<b>LEARNING OUTCOMES</b>	Students will be able to articulate the process of research, report their findings and conclusions with reference to existing literature that culminates in their thesis volumes
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### CO-PO mapped syllabi of B.Arch Course 2021-22\_ Allied Design: Research Methods Writing, Sem 9

#### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

#### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

#### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort

zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Allied Design: Research Methods Writing      Sem: 9      Fifth Year**

**Course Objectives:**

- To develop a research structure for the thesis volume
- To analyse and reason specific problems of research in the study of the built environment

**Course Outcomes (CO): (Allied Design: Research Methods Writing)**

1. Developing methods of conducting research
2. Reviewing literature and critiquing arguments
3. Articulating the process of research through observations and findings

**Rubrics (Allied Design: Research Methods Writing):**

Year of Assessment: 2021-22	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture										
Year & Sem	Subject:		University Subject Code	Sessional Marks: max 50	Exercise : Marks out of	Cred-its	Date of sub-mission				
Fifth Year - Sem 9	Allied Design: Research Methods Writing		BARC 902	50	50	5					
Exercise: Title	Writing the Final Thesis Volume										
Exercise Note / Task	Developing a structure for the final thesis volume										
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail		
Grade	O++	O+	O	A	B	C	D	E	F		
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% - 40%		
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0		
Area of Evaluation											
<b>Articulation and analysis of research argument</b>	1) Extremely articulate in framing the area for inquiry. 2) Very clear structure for presentation. 3) Well researched	1) Very articulate in framing the area for inquiry. 2) Clear structure for presentation. 3) Well researched	1) Clear and Articulate in framing the area for inquiry. 2) Well researched structure for presentation.	1) There is clarity in the area of inquiry 2) Research and structure for presentation is fairly good.	1) The area of inquiry is fairly good 2) Research and structure for presentation can be better.	1) The area of inquiry is good 2) Research and structure for presentation is fair.	1) There is clarity in the area of inquiry 2) Research and structure for presentation is found lacking	1) There is potential for an area of inquiry but needs more clarity. 2) No research and structure for presentation			Non submission
<b>Participation in Studio</b>	Attends less than 95% of total classes	Attends less than 90% of total classes	Attends less than 85 % of total classes	Attends less than 75 % of total classes	Attends less than 70 % of total classes	Attends less than 65 % of total classes	Attends less than 60 % of total classes	Attends less than 55 % of total classes		Attends less than 50 % of total classes	

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	Developing methods of conducting research	3	1	2	1	0	2	1	2
CO2	Reviewing literature and critiquing arguments	3	2	2	1	0	2	2	2
CO3	Articulating the process of research through observations and findings	3	2	1	1	0	1	1	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

COURSE CODE	BARC 903	CREDITS	3
COURSE NAME	ARCHITECTURAL BUILDING CONSTRUCTION VIII	SESSIONAL MARKS	100
FACULTY	Vikram Pawar, Jamshid Bhiwandiwala,	EXAM SCHEME	Internal
CLASS DAY/TIME	Friday 2:40 to 4:20	NON-CLASS TIME	

PEDAGOGIC INTENT	<ul style="list-style-type: none"> <li>To teach the university syllabus- large span (Rigid frames, Portals), Shells, Tensile, Space frames; Prestressed Concrete; Precast and PEB.</li> <li>To encourage integration of technical interests and findings with thesis objectives or in the subsequent resolution of their design dissertations.</li> <li>The prepare the student to integrate a detailed understanding of material, construction and environmental systems within their design dissertations.</li> <li>To provide possible support for the student to make choices of varying specialisations for holistic evolution of their design dissertations.</li> </ul>
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COURSE METHODOLOGY	<p>Lectures based on university syllabus as well as broader technical thematics for advancement of research interests in technical domains- Construction in Digital age; Environment and Energy concerns; Structure, Materials and systems of tectonic Forms; Quizzes;</p> <p>Reviews of their engagement with their research interest as part of technology studio.</p>
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	02-July-21	Introduction - intent of the semester and Course structure Overview		
2	9-July-21	Long span structures - Architectural Expressions		
3	16-July-21	Portals : Architectural Design of Portal; use of Portal:		
4	23-July-21	Skins of a Large spanned structure		
5	30-July-21	Hands on models to understand Portals		
6	06-Aug-21	Folded Plates		
7	13-Aug-21	Tensile structures		
8	20-Aug-21	Prestressed Technology		
9	27-Aug-21	Long span arches, shells		
10	03-Sep-21	Recap		
11	10-Sep-21	Holiday		
12	17-Sep-21	Applications for Tech studio (Vertical village)		
13	24-Sep-21	Discussions on Tech studio (Vertical village)		
14	01-Oct-21	Submission		

LEARNING OUTCOMES	The student through the course should be made aware of the various large and complex structural systems, apply the same through analytical and hands on inquiry as well as will be able to develop the technological intent towards ones own Design Dissertation
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READING LIST/ REFERENCES	Structural system by Henrich Engel, Construction material methods and techniques by Spence and Kultermann, Fundamentals of Building Construction by Allen and Iano
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – *Advance Building Construction*

### Program Educational Objective (PEOs): B.Arch.

- To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
- To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
- To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
- To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
- To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

- To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
- To enable the student to delay the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
- To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
- To engage the student in enquiry through hands-on work.
- To enable the student to script one's own project
- To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
- To enable the student to extract and the abstract from the experiential and center it as the basis of design
- To enable the student to break the boundary between abstract thought and material realities
- To enable students to discover multiple methods and tools to develop their own process of learning
- To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

- The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
- To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
- To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete.
- To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

- To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
- To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
- To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
- To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architecture Building Construction**

**Course Code: BARC 903**

**Sem 9**

**Name - 2020-21**

**Course Objectives:**

- To enable students to make decisions about the directions for their future practices through reflexive thinking and research further to their learning in earlier 4 years.
- To enable an intersection of architectural practice with the academic space where both the school and the students make choices based on their particular interest.
- To bring into the academic space, explorations of particular interests in the city.
- To continue to urge students to pursue their interest in systemic understanding of architecture as tectonic as well as environmental.
- To explore complex built forms through integration with archetype resolutions.
- To urge students to develop an ethical choice for practice in context to the role that architecture should take on, in relation to history, ecology and making a more fair world.

**Course Outcomes (CO):** (Maximum number of course outcomes should be 5 and min 3 as per NAAC guidelines, Ethics based etc )

Course Outcome (Co)	Description
CO1	They develop an intuitive understanding of the various building systems and proportionate sizes of the components and are able to visualise their concepts as material objects subjected to natural forces, usage and constructional possibilities.
CO2	Analysis of built form from structural perspective; climatic factors and the building elements response to it; the materials used in making the built form and the various elements; visualising process of construction on site; and anticipating behaviour of the structure over its expected life span forms the core scope of technology pedagogy.
CO3	They are able to develop and represent a substantially sound technical proposal.
CO4	They refer to appropriate resources (case studies, standards, technical literature, guidelines, handbooks, codes, etc.) as required while arriving at solutions to the design problems. In absence of suitable standards, they are able to custom design details befitting their core idea.
CO5	They develop empathy towards craft and craftsmanship and they themselves inculcate a practice of doing “hands-on” wherever the opportunity is available.

**Rubrics:**

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	University Subject Code	Sessional Marks:	Exercise: Marks out of	Credits	Date of submission			
FIFTH YEAR - SEM 9	Architectural Building Construction-8	BARC 903	100	100	2				
Exercise: Title	Tectonic explorations of large span structures								
Exercise Note / Task	Analytical and Representative models of structural systems of large spans								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% -40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
Analytical skills	Innovative. Experimental and Bold Clarity. Expressive of relevance.	Very impressive. Highly demonstrative.	Impressive attempt to go beyond requirement. Excellent presentation of ideas.	Demonstrative. Very good attempt to present ideas.	Has gone beyond the requirement. More than adequate attempt to present ideas.	Attempts to express and go beyond the requirement. Just adequate	No further enquiry. Barely encourages a discussion. Needs clarity	No further enquiry. Does not encourage a discussion	Does not complete the assignment
Representation through drawings	Innovative. Experimental and Bold Clarity. Expressive of relevance.	Very impressive. Highly demonstrative.	Impressive attempt to go beyond requirement. Excellent presentation of ideas.	Demonstrative. Very good attempt to present ideas.	Has gone beyond the requirement. More than adequate attempt to present ideas.	Attempts to express and go beyond the requirement. Just adequate	No further enquiry. Barely encourages a discussion. Needs clarity	No further enquiry. Does not encourage a discussion	Does not complete the assignment
Ideas for synthesis drawings	Innovative. Experimental and Bold Clarity.	Very impressive. Highly demonstrative.	Excellent presentation of ideas.	Very good attempt to present ideas.	More than adequate attempt to present ideas.	Just adequate attempt to present ideas.	No further enquiry.	No further enquiry.	Does not complete the assignment
Participation in Studio	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes



CO-PO mapping									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Intuitive Understanding	3	3	3	2	2	3	3	2
CO2	Structural and Construction soundness	3	3	3	2	2	3	3	3
CO3	Representation	3	3	3	3	2	3	3	3
CO4	Innovation	3	3	3	3	2	3	3	3
CO5	Empathy	2	2	3	3	2	3	2	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

**CO-PO mapped syllabi of B.Arch Course 2021-2022 – *Theory of Structures 8***

<b>COURSE CODE</b>	BARC 904	<b>CREDITS</b>	1 + 1 Tech. Studio
<b>COURSE NAME</b>	Theory of Structures	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Ainsley, Jimmy, Kimaya, Minal, Shantanu, Vikram	<b>EXAM SCHEME</b>	Theory
<b>CLASS DAY/TIME</b>	Friday / 9.00-12.20, 1.20-2.10, 2.10-3.00, 3.00-3.50	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	That students should be able to reflect, undertake readings, research and explorations in the areas of their technical interests.
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<b>COURSE METHODOLOGY</b>	One to One interactions between faculty and students. Understanding the design dissertation interest and identify technological topics/ field of interest which could relate to the design dissertation . Explorations of the subject through secondary data. writing exercises to consolidate learnings of the secondary data.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	2/7/20	Long Span Structures - Rigid Frames / Portals		
2	9/7/20	Reinforced concrete shells		
3	16/7/20	Prestressed concrete		
4	23/7/20	Pre-cast technologies		
5	30/7/20	Prefabrication and space frames		
6	6/8/20	Tensile structures	Review 1	
7	13/8/20	Technologies, Styles and 'isms'	Detailed studies	
8	20/8/20	Mid term test		
9	27/8/20	Materials and tectonics in Architecture		
10	3/9/20	Traditional construction in contemporary and post modern age	Draft paper grading	
11	10/9/20	Holiday		
12	17/9/20	Temporal/ Modular/ Dismantlable construction		
13	24/9/20	Fractal geometries and Parametric Design		
14	1/10/20	Digital tools for design and BIM		
15	8/10/20	Final Test	Condonation	

<b>LEARNING OUTCOMES</b>	Research skills related to systemic and material understanding of both Tectonic as well as Environmental issues and their solutions. Articulation of technological explorations and possible overlaps with design dissertation.
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<b>READING LIST/ REFERENCES</b>	
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**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instil in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Theory of Structures 8**

**Course Code: BARC 904**

**Sem 9**

**Name - Fifth**

**Course Objectives:**

**To enable students the understanding of long span structures and complex forms , pre-stressed technology, advanced concrete, tensile and shell structures.**

**Course Outcomes (CO):** (Maximum number of course outcomes should be 5 and min 3 as per NAAC guidelines, Ethics based etc )

Course Outcome (Co)	Description
CO1	<b>To understand long span structural framing and design</b>
CO2	<b>To evaluate advance construction on the basis of structural understanding</b>
CO3	<b>To analyse and apply stresses in complex structures with respect to form and frames</b>

**Rubrics:**

Year of Assessment: 2017-2018	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 50	Exercise 01 & 02: Marks out of	Credits	Date of submission		
<b>FIFTH YEAR - SEM 9</b>	<b>Theory of Structures 8</b>	<b>BARC 904</b>	<b>BARC 904</b>	<b>50</b>		<b>2</b>			
<b>Exercise: Title</b>	Reports based on specified topics								
<b>Exercise Note / Task</b>	Prepare a report of cases and lecture on the basis of understanding/ Case studies/ Site Visits								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% -55%</b>	<b>54% - 50%</b>	<b>49% -40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Understanding of systems and application in studios</b>	<b>Complete understanding of theory and its application</b>	<b>Very good understanding of theory and its application</b>	<b>Good understanding of theory and its application</b>	<b>Fair understanding of theory and its application</b>	<b>Satisfactory understanding of theory and its application</b>	<b>Average understanding of theory and its application</b>	<b>Less understanding of theory and its application</b>	<b>Unsatisfactory understanding of theory and its application</b>	<b>No understanding of theory and its application</b>
<b>Representation Technique and final submission</b>	<b>Very well formatted presentation</b>	<b>Well formatted presentation</b>	<b>Clear formatted presentation</b>	<b>Very good formatted presentation</b>	<b>Good formatted presentation</b>	<b>Fairly formatted presentation</b>	<b>Barely managed to get clarity of intent</b>	<b>Less clarity in terms of ideas and processes</b>	<b>Absolute no clarity of thought and understanding of the subject</b>
<b>Participation in Class</b>	<b>Attends less than 95% of total classes</b>	<b>Attends less than 90% of total classes</b>	<b>Attends less than 85 % of total classe</b>	<b>Attends less than 75 % of total classe</b>	<b>Attends less than 70 % of total classes</b>	<b>Attends less than 65 % of total classes</b>	<b>Attends less than 60 % of total classes</b>	<b>Attends less than 55 % of total classes</b>	<b>Attends less than 50 % of total classes</b>

CO-PO mapping									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To understand long span structural framing and design	2	3	1	0	2	0	3	1
CO2	To evaluate advance construction on the basis of structural understanding	2	3	1	0	2	0	3	1
CO3	To analyse and apply stresses in complex structures with respect to form and frames	2	3	1	0	2	0	3	1

1 – Slight (Low) Correlation  
0 – No Correlation

2- Moderate (Medium) Correlation

3- Substantial (high) Correlation

<b>COURSE CODE</b>	BARC 908	<b>CREDITS</b>	2 (1 ABS + 1Tech Studio)
<b>COURSE NAME</b>	Architectural Building Services IV	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Minal, Kimaya	<b>EXAM SCHEME</b>	Paper submission
<b>CLASS DAY/TIME</b>	Wednesday, 1:20-3:50	<b>NON-CLASS TIME</b>	2 hours per week

<b>COURSE CODE</b>	BARC 908	<b>CREDITS</b>	1 ABS
<b>COURSE NAME</b>	Architectural Building Services IV	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Minal, Kimaya	<b>EXAM SCHEME</b>	Internal
<b>CLASS DAY/TIME</b>	WEDNESDAY   1.20-3.50 PM IST	<b>NON-CLASS TIME</b>	2 hours per week

**Lecture**

<b>PEDAGOGIC INTENT</b>	The course attempts a comprehensive understanding of complex integrated services, such as Building Management Systems (BMS), climate-responsive architecture, energy efficiency, at design process level not only to optimize functionality and energy efficiency but also to play a significant role in evolving a unique architectural language. Furthermore, exposure to specialized services for specific functions in various types of buildings, such as hospitals, airports, large corporate offices, malls, and hotels, is facilitated through case study of various typology of buildings.
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<b>COURSE METHODOLOGY</b>	Theory Lectures, Small Exercises, Case - studies.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	16-Jun-21	Site Services - site planning principles	Case Study Presentations	100%
2	23-Jun-21	Site Services - Landscape as infrastructure. Integrating various water		
3	30-Jun-21	Site Services - Landscape as infrastructure - Continue		
4	07-Jul-21	Case study of various building and their services		
5	14-Jul-21	Site Strategies and Systems		
6	21-Jul-21	Site Strategies and Systems - continue		
7	28-Jul-21	holiday		
8	04-Aug-17	Advanced Building services - Hospitals		
9	11-Aug-17	Advanced Building services - Malls/theaters		
10	18-Aug-17	Advanced Building services - Energy Efficient building System		
11	25-Aug-17	HVAC studio		
12	01-Sep-17	Case study of various building and their services		
13	08-Sep-17	Building security systems		
14	03-Sep-17	Case study of various building and their services		
15	15-Sep-17	Site and Services - Advanced Technology - District heating, bio-gas,		
16	22-Sep-17	Thesis Discussions		
17	29-Sep-17	Thesis Discussions		
18	06-Oct-17	Thesis Discussions		

<b>LEARNING OUTCOMES</b>	The intent is to help students to internalize these concepts and encourage them to apply the same for their design, considering the four concepts discussed in the intent section with the added emphasize on sustainability as an overall umbrella.
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<b>READING LIST/ REFERENCES</b>	Mechanical and Electrical Systems in Buildings Building Energy Management Systems: an application to heating and control. Mechanical and Electrical Systems in Construction and Architecture Air-Conditioning: a practical introduction. Energy Conservation Standards: for building design, construction and operation. Mechanical and Electrical Equipment for Buildings. Building Services: Electro Mechanical and Environmental Services, Advanced Building Systems: a technical guide for Architects and Engineers. Mechanical Systems for Architects.
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**Studio**

<b>COURSE CODE</b>	BARC 903, 904, 906, 908	<b>CREDITS</b>	1ABC, 1ABS, 1TOS, 1EVS
<b>COURSE NAME</b>	ARD+ Services	<b>SESSIONAL MARKS</b>	50+50+50+50
<b>FACULTY</b>	Ainsley Lewis, Vikram Pawar, Jamshid Bhiwandiwala, Minal Yerramshetty, Kimaya Keluskar	<b>EXAM SCHEME</b>	Only Internal Sessional marking.
<b>CLASS DAY/TIME</b>	Friday 9-12:20	<b>NON-CLASS TIME</b>	2 hours per week

<b>PEDAGOGIC INTENT</b>	<ul style="list-style-type: none"> <li>To help them to pursue research interests, investigation and writing in systemic and material understanding of both Tectonic as well as Environmental issues and their solutions,</li> <li>To explore complex built forms and expand horizon through discussions and digital and physical iterations.</li> <li>To encourage integration of technical interests and findings with thesis objectives or in the subsequent resolution of their design dissertations.</li> <li>To prepare the student to integrate a detailed understanding of material, construction and environmental systems within their design dissertations.</li> <li>To provide possible support for the student to make choices of varying specialisations for holistic evolution of their design dissertations.</li> </ul>
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<b>COURSE METHODOLOGY</b>	One to One interaction between faculty and students. Understanding the design dissertation interest and identify technological topics/ field of interest which could relate to the design dissertation. Explorations of the subject through secondary data. Writing exercises to consolidate learnings of the secondary data. Periodic reviews of their progress.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	18-June-21	Introduction, Faculty student interactions to understand thesis interests and possible technological trajectories		
2	25-June	Topic of technological exploration		
3	02-July	Literature Review		
4	09-July	Establishing Objectives and methodology of research		
5	16-July	Review 1- grading		
6	23-July	Detailed studies		
7	30-July	Diagrams and modelling		
8	06-Aug	Exercises of Analysis		
9	13-Aug	Draft paper- grading 2		
10	20-Aug	Iterations and Edits		
11	27-Aug	Completing Referencing and citations		
12	03-Sep	Final paper- final grades		

<b>LEARNING OUTCOMES</b>	Research skills related to systemic and material understanding of both Tectonic as well as Environmental issues and their solutions. Articulation of technological explorations and possible overlaps with design dissertation.
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<b>READING LIST/ REFERENCES</b>	-
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**CO-PO mapped syllabi of B. Arch Course 2021-2022 – Architectural Building Services 6**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpret learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorize and conceptualize ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to de-layer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project.
6. To enable the student to observe, experience, analyze space, its physicality, and its associations through the body.
7. To enable the student to extract the abstract from the experiential and center it as the basis of design.
8. To enable the student to break the boundary between abstract thought and material realities.
9. To enable students to discover multiple methods and tools to develop their own process of learning.
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive ways of intervening as architects through critical thinking.
2. To enable students with design skills that can navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that can navigate the space between the abstract and the concrete. (Abstract / Concrete)
4. To challenge students to evolve empathy and understanding of cultures outside of their own comfort zones. (Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Building Services 6**

**Course Code: 908**

**Sem 9**

**Fifth Year**

**Course Objectives:**

The Architectural Building Services course this semester facilitates enquiry into sustainable and holistic mode of spatial production that requires research and application in their final thesis project. The course focus on technological concerns and representation that effectively communicates various aspects of their projects such as site analysis, contextual integration, climate responsiveness, materiality with different techniques and environmental system strategies. The objective of this course is design-based approach to resolution where these strategies are synthesized and incorporated in their project comprehensively to create not only visually appealing architectural form but functional and sustainable as well.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To enable students to arrive at design solutions that address various environmental issues through use of passive techniques, architecturally as well as at site and neighbourhood level, analytically.
CO2	To explore how the different environmental and services aspects inform design decisions, through vernacular and contemporary case study approaches.
CO3	To enable students in understanding inherent integration of complex building services in advanced buildings aesthetically and sustainably.

Rubrics

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelor of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks:	Exercise 01 & 02: Marks out of	Credits	Date of submission		
FIFTH YEAR - SEM 9	Arch. Building services		BARC 908	50		2	Multiple		
Exercise: Title	Basement Planning and Hvac Systems for their project								
Exercise Note/task	Detailed drawings with plan, sections and details for basement as well as HVAC system								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Understanding of systems and their integration with other systems as well as with space</b>	1)Complete understanding of systems 2) its integration with other system 3) its hierarchy in planned space	1)Very good understanding of systems 2) its integration with others and its position in planned space.	Good understanding of systems and its integration and its position in planned space.	Fairly good understanding of systems and their integration and their position in planned space.	1)Understanding of a system is seen along with other systems 2) lacking spatial integration.	1)Lesser understanding of the system is seen along with other systems 2) lacking spatial integration.	1)Poor understanding of the system. 2)No understanding of integration with other systems.	Extremely poor understanding of the system.	Non-Submission
	<b>Representation Technique and final submission</b>	Logical and semantic representation	Logical representation	Good representation in all aspect	Good representation in all aspect	Fairly represented in all aspect	The drawings could be understood	Representation needed clarification	Drawings not clear enough
<b>Attendance, time management and participation in Studio</b>	Attends 95% of total classes	Attends 90% of total classes	Attends 85 % of total classes	Attends 80% of total classes	Attends 75% of total classes	Attends 70% of total classes	Attends 60% of total classes	Attends 55% of total classes	Attends less than 50% of total classes

CO-PO Mapping

CO-PO mapping for a course of "UG program"									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To enable students to arrive at design solutions that address various environmental issues through use of passive techniques, architecturally as well as at site and neighbourhood level, analytically.	3	2	2	2	3	2	2	3
CO2	To explore how the different environmental and services aspects inform design decisions, through vernacular and contemporary case study approaches.	3	2	2	1	1	2	3	2
CO3	To enable students in understanding inherent integration of complex building services in advanced buildings aesthetically and sustainably.	2	2	2	0	0	0	3	2

<b>COURSE CODE</b>	EVS4	<b>CREDITS</b>	3 (2EVS lecture+1Tech Studio)
<b>COURSE NAME</b>	ENVIRONMENTAL STUDIES IV	<b>SESSIONAL MARKS</b>	100 marks per semester
<b>FACULTY</b>	SANDEEP M, MINAL Y	<b>EXAM SCHEME</b>	Internal
<b>CLASS DAY/TIME</b>	WEDNESDAY   1.20-3.50 PM IST	<b>NON-CLASS TIME</b>	2 hours per week

<b>COURSE CODE</b>	EVS4	<b>CREDITS</b>	2
<b>COURSE NAME</b>	ENVIRONMENTAL STUDIES IV	<b>SESSIONAL MARKS</b>	100 marks per semester
<b>FACULTY</b>	SANDEEP M, MINAL Y	<b>EXAM SCHEME</b>	Internal
<b>CLASS DAY/TIME</b>	WEDNESDAY   1.20-3.50 PM IST	<b>NON-CLASS TIME</b>	2 hours per week

**Lecture**

<b>PEDAGOGIC INTENT</b>	Engaging students mind with sustainable issues at various scales (Macro Meso and Micro) and diverse compositions of built and natural environments. How could one approach the qualitative and quantitative data using mathematical models, digital tools and frameworks and policies to create opportunities of resilience, inclusivity and excellence by implementing design drivers and strategies. Exploring and understanding different systems for efficient resource management and creating a low environmental impact built forms and balanced human-nature equation. Some aspect of Technology Studio exercise will be marked/graded based on EVS concepts.
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<b>COURSE METHODOLOGY</b>	Lectures and discussions using architectural examples showcasing environmental systems, design processes, practices involved during and after the project execution to ensure projected numbers and targets are achieved.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	07/07/2021	Topographies and Regions		
2	14/07/2021	Mapping, Framework and Tools for land assessment		
3	21/07/2021	Shifting Scales - Impact Assessment		
4	28/07/2021	Site Strategies - Implementation and Planning		
5	04/08/2021	Post Occupancy Evaluation	Assignment introduced	
6	11/08/2021	Environmental Systems and their performance analysis - Part I		
7	18/08/2021	Environmental Systems and their performance analysis - Part II		
8	25/08/2021	Environmental Systems and their performance analysis - Part III		
9	01/08/2021	Environmental Systems and their performance analysis - Part IV		
10	08/09/2021	Passivhaus		
11	15/09/2021	Net Zero Energy Building		
12	22/09/2021	Carbon Neutral Energy Building		
13	29/09/2021	Ecosystem Services		
14	06/10/2021	Water Cycle		
15	13/10/2021	Waste and Energy Cycle		
16	20/10/2021	Final submission and discussion	Submission of assignment	

<b>LEARNING OUTCOMES</b>	Positioning oneself within the larger context of sustainability and climate change by carving out individual interest and quest of learning environmental systems and associated human-nature equation. Awareness and urge to apply minds on holistic understanding to achieve best results and addressing the concerns at diverse levels and complexities. The registration of such process itself is very important to build the consciousness to act/react responsibly throughout the act of creating nurturing and making a built environment in harmony with forces of nature and environment.
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<b>READING LIST/ REFERENCES</b>	Environmental Planning - Anne Beer, The ecology of Building Materials, Atals for Sustainable Buildings, Aqautecture / Greening Asia, The Zed Life, Solarium, Climate Consultant Open Ware Software.
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**Studio**

<b>COURSE CODE</b>	BARC 903, 904, 906, 908	<b>CREDITS</b>	1ABC, 1ABS, 1TOS, 1EVS
<b>COURSE NAME</b>	ARD+ Services	<b>SESSIONAL MARKS</b>	50+50+50+50
<b>FACULTY</b>	Ainsley Lewis, Vikram Pawar, Jamshid Bhiwandiwalla, Minal Yerramshetty, Kimaya Keluskar	<b>EXAM SCHEME</b>	Paper submission
<b>CLASS DAY/TIME</b>	Friday 9-12:20	<b>NON-CLASS TIME</b>	9-12:20

<b>PEDAGOGIC INTENT</b>	<ul style="list-style-type: none"> <li>To help them to pursue research interests, investigation and writing in systemic and material understanding of both Tectonic as well as Environmental issues and their solutions,</li> <li>To explore complex built forms and expand horizon through discussions and digital and physical iterations.</li> <li>To encourage integration of technical interests and findings with thesis objectives or in the subsequent resolution of their design dissertations.</li> <li>The prepare the student to integrate a detailed understanding of material, construction and environmental systems within their design dissertations.</li> <li>To provide possible support for the student to make choices of varying specialisations for holistic evolution of their design dissertations.</li> </ul>
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<b>COURSE METHODOLOGY</b>	One to One interactions between faculty and students. Understanding the design dissertation interest and Identify technological topics/ field of interest which could relate to the design dissertation. Explorations of the subject through secondary data. Writing exercises to consolidate learnings of the secondary data. Periodic reviews of their progress.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	18-June-21	Introduction, Faculty student interactions to understand thesis interests and possible technological trajectories		
2	25-June	Topic of technological exploration		
3	02-July	Literature Review		
4	09-July	Establishing Objectives and methodology of research		
5	16-July	Review 1- grading		
6	23-July	Detailed studies		
7	30-July	Diagrams and modelling		
8	06-Aug	Exercises of Analysis		
9	13-Aug	Draft paper- grading 2		
10	20-Aug	Iterations and Edits		
11	27-Aug	Completing Referencing and citations		
12	03-Sep	Final paper- final grades		

<b>LEARNING OUTCOMES</b>	Research skills related to systemic and material understanding of both Tectonic as well as Environmental issues and their solutions. Articulation of technological explorations and possible overlaps with design dissertation.
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<b>READING LIST/ REFERENCES</b>	-
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**CO-PO mapped syllabi of B.Arch Course 2021-2022 – Environmental Studies**

**Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course:** Environmental Studies 4

**Course Code:** BARC 906

**Sem** 9

**Year** 21-22

**Course Objectives:**

- Understand how to respond to climate atmosphere changes and its impact on the building, drive the dynamics of the functional aspect of the building, people, communities, and ecology. The new evolving concepts owing to climate change.
- Using Building physics as a tool to calculate energy performances of the built environment and impact on the natural environment.
- Learning to build constructive arguments to address the challenges of today and the futuristic built environment.
- Applying and devising various frameworks and toolkits to arrive /derive efficient building solutions and environmental strategies for adaptation and mitigation to address challenges of climate change.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To develop an understanding to conduct post-occupancy evaluation studies in built environment to inform design decisions.
CO2	To learn and derive a process of application using hard and soft skills to attain proficiency in energy consumption calculations, ecological footprint and carbon footprint of the built form
CO3	To apply interdisciplinary approaches such as ecology, economics, ethics, and policy to devise solutions to environmental problems at regional and neighbourhood level.
CO4	Be proficient with ideas of sustainability, net zero energy buildings, dynamic façade systems etc. that address climate adaptation and mitigation strategies.

**Rubrics:**

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	BAR C 306	Sessional Marks:	Exercise 01: Marks out of	Credits:	Date of submission	Upgrade 01	Upgrade 02	
FIFTH YEAR-SEM 9	EVS	BAR C 906	100	100	3: 2EVS +1Tech Studio	20.10.2021			
Exercise: Title	Post Occupancy Evaluation								
Exercise Note / Task	Conduct post-occupancy evaluation of a building and submit report								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% -40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Data Gathering / monitoring and collating	Attendance and participation in the discussions	Well curated outstanding analytical drawings and clarity in explaining the conc	Very well curated outstanding analytical drawings and clarity in explaining the	Excellent curati on using outstanding analytical drawings and clarity in explaining	Very Good curati on using outstanding analytical drawings and clarity in explaining	Good curati on using outstanding analytical drawings and clarity in explaining the conce	Fair curati on using outstanding analytical drawings and clarity in explaining the	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry

		ept and architectural design intent	conce pt and architectural design intent	the conce pt and architectural design intent	the conce pt and architectural design intent	pt and architectural design intent	conc ept and architectural design intent		
Depth of Inquiry and ability to generate analytical drawings	Showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected	Show casing well outstanding insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Show casing Outstanding insights using tools, frameworks to develop methodology to critique and analyse the data collected	Show casing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Show casing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Show casing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Show casing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Gene ric methods of analysis	Not informed process of adaptation of tools and frameworks
Representation Technique and final submission	Very well formatted presentation of case studies explaining concepts, processes adopted	Well formatted presentation of case studies explaining concepts, processes	Clear formatted presentation of case studies explaining concepts, processes	Very good formatted presentation of case studies explaining concepts, processes	Good formatted presentation of case studies explaining concepts, processes	Fairly formatted presentation of case studies explaining concepts, processes	Barely managed to get clarity of intent and study using poor diagrams and	Less clarity in terms of ideas and processes to be followed	Absolute no clarity of thought and understanding of the subject

	d using digarms, sketches and assessment	adopted using digarms, sketches and assessment	adopted using digarms, sketches and assessment	ss adopted using digarms, sketches and assessment	adopted using digarms, sketches and assessment	adopted using digarms, sketches and assessment	sketches		
Ability to choose a site for architectural intervention and develop an environmental argument and design brief	Showcasing 100% ability to translate theoretical knowledge into practice	Show casing 90% ability to translate theoretical knowledge into practice	Show casing 80% ability to translate theoretical knowledge into practice	Show casing 70% ability to translate theoretical knowledge into practice	Show casing 65% ability to translate theoretical knowledge into practice	Show casing 60% ability to translate theoretical knowledge into practice	Show casing 55% ability to translate theoretical knowledge into practice	Show casing 50% ability to translate theoretical knowledge into practice	Zero understanding and application of theoretical knowledge
Attendance and participation in the discussions	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence

CO2	To explore how the different environmental aspects inform design decisions, through vernacular and contemporary case study approaches.	2	3	1	2	1	2	2	1
CO3	To be able to recognize passive architectural features, identify the materials, details including built forms, construction techniques and principles that evolve due to climatic responses.	3	2	2	1	2	2	2	1
CO4	To be able to analytically understand the climatic variables, followed by a resolution of the building keeping in view a strong climate response.	2	2	2	1	2	2	3	1

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

COPO Mapping Setup for Sem 3

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To be able to understand the relationship between built-environment design and environmental parameters including natural ventilation and air quality, daylight etc.	2	3	3	2	1	1	2	1

<b>COURSE CODE</b>	BARC 910	<b>CREDITS</b>	
<b>COURSE NAME</b>	Situating Practice	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Mamta, George	<b>EXAM SCHEME</b>	50
<b>CLASS DAY/TIME</b>	Monday 13:20 to 15:00 PM	<b>NON-CLASS TIME</b>	nil

<b>PEDAGOGIC INTENT</b>	<p>The course will explore the phenomenon of Housing financialization and the trajectory of Dirigiste to neo dirigiste policies in the city from pre-independent times. For example, it will study the politics of the rent control act and its implications and the trajectory of tools implemented for procuring land in the city for housing through various acts.</p> <p>Domain of Positioning I</p> <p>The students will analyse the findings from sem 7 and 8 and try to operationalize the idea of situated practice by creating a 'taxonomy' based on how the various practices describe themselves, how they are placed within the current context and how they may have evolved. They will also be asked to imagine their own position within that spectrum</p>
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<b>COURSE METHOD</b>	<p>Evaluation of professional roles and practices; emergence of new modes of practice, including innovative facilities procurement methods.</p> <p>Lectures, Interviews Readings</p>
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	14/06/21	Introduction to the course module that will deal with the question of Land, planning and environment in relation with the existing housing stock in the city.		
2	21/06/21	Discussion on escalation in demand for affordable housing post- independence. Formulation of various bodies and policies pre and post- independence	X	
3	28/06/21	Easement Act, Land Acquisition Act and their implications		
4	05/07/21	The politics of the rent control act and its implications. Tracing the trajectory of tools implemented for procuring land in the city through various acts.		
5	12/07/21	Repair and Dilapidation, Cessed building scenario, role of MHADA in redevelopment of cessed buildings(Incentivization of FSI)		
6	19/07/21	Standard Rent - Introduction, types of rent		
7	26/07/21	Dichotomy of demand and supply of affordable housing, financialization of housing as a resultant of FSI Incentivization)		
8	02/08/21	Selection of MHADA layout and individual sites dealing with affordable housing, sites with slum encroachment and SRA schemes. Discussing the redevelopment scenario with respect to creation of affordable housing		
9	09/08/21	Introduction to case study. Site study. Understanding of FSI norms as per DCR 2034		
10	23/08/21	Working Studio for the domain of positioning		
11	30/08/21	Working Studio for the domain of positioning		
12	06/09/21	Working Studio for the domain of positioning		
13	06/13/21	Presentations	Mappin practices	50
14	20/13/21	Presentations		
15	27/09/21	Presentations		

<b>LEARNING OUTCOMES</b>	As future professionals, the course aims at trying to make students aware of this spectrum and asks them to imagine their own position in it. Towards this end, (maybe a few years), the students will be asked to analyse the findings and try to operationalize the idea of situated practice by creating a 'taxonomy' based on how the various practices describe themselves, how they are placed within the current context and how they may have evolved
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<b>READING LIST/ REFERENCES</b>	Law of Easements by Amin & Shastri. Maharashtra Regional & Town Planning Act. BMRDA Act. Architecture's "Political Compass": A Taxonomy of Emerging Architecture in One Diagram by Alejandro Zaera-Polo & Guillermo Fernandez Abascal
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – Professional Practice 2

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Professional Practice 2      Course Code: BARC 910      Sem 9      Fifth Year**

**Course Objectives:**

The course aims to deal with the question of Land, building and planning frameworks and its impact on the environment in relation with the existing housing stock in the city and examine the various practices describe themselves, how they are placed within the current context and how they may have evolved.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	<b>To analyse the frameworks leading to the situation of housing stock in the city through case studies and how practices emerged in response to various planning regulations</b>
CO2	<b>To understand how individuals/practices have situated themselves within the architectural profession</b>
CO3	<b>To evaluate the various positions taken by contemporary practices and imagine their own position within that spectrum</b>

**Rubrics:**

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	University Subject Code	Sessional Marks: 50	Exercise 01 & 02: Marks out of	Credits	Date of submission			
21-22 FIFTH YEAR - SEM 9	Professional Practice II	BARC 910		50	3				
<b>Exercise: Title</b>	Positions taken up by contemporary practices as a result of the myriad forces and influences faced by them								
<b>Exercise Note / Task</b>	To analyse the frameworks leading to the situation of housing stock in the city through case studies and how practices emerged in response to various planning regulations								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% - 55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Lenses of inquiry</b>	Extremely complex, new and original level of inquiry	Extremely complex, and comparatively new and comparatively original level of inquiry	Complex, and original level of inquiry	Moderate and original level of inquiry	Moderate and continued from earlier study level of inquiry	Normal and continued from earlier study level of inquiry	Normal and low level of inquiry	Normal and poor level of inquiry	Absence of inquiry
<b>Ability to demonstrate the Learnings from the Studio</b>	Extremely well-articulated	Very well-articulated	Well articulated	Articulated normally	Moderately Articulate	Less Articulate	Needs work	No Articulation	No Attempt
<b>Attendance, time management and participation in Studio</b>	100 % attendance, working and high level of interaction in the studio	80 % attendance, working and high level of interaction in the studio	75 % attendance, working and high level of interaction in the studio	70 % attendance, working and high level of interaction in the studio	65 % attendance, working and good level of interaction in the studio	60 % attendance, working and good level of interaction in the studio	55 % attendance, working and good level of interaction in the studio	50 % attendance, not working and low level of interaction in the studio	less than 50% attendance, not working and no level of interaction in the studio

CO-PO mapping for a course of "UG program"									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To analyse the frameworks leading to the situation of housing stock in the city through case studies and how practices emerged in response to various planning regulations	3	1	2	1	3	2	2	3
CO2	To understand how individuals/practices have situated themselves within the architectural profession	3	1	2	1	3	2	2	3
CO3	To evaluate the various positions taken by contemporary practices and imagine their own position within that spectrum	2	0	1	1	3	3	3	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARD 911	<b>CREDITS</b>	4
<b>COURSE NAME</b>	Design Dissertation	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Aneerudha, Manoj, Ainsley, Rohan, Pinkish, Jamshid, Vikram, Sonal, Shweta, Kimaya, George, Ginella, Minal, Shirish, Mamta, Sandeep, Nemish, Nikhil, Jude, Apurva P	<b>EXAM SCHEME</b>	Viva-Voce (100 Marks)
<b>CLASS DAY/TIME</b>	1:20-4:00 (Tuesday) & 9:00-12:20 (Wednesday)	<b>NON-CLASS TIME</b>	-

<b>PEDAGOGIC INTENT</b>	The intent of the course is to make the students realise and manifest their research concerns into architectural projects with an awareness of the rigour of the architectural profession.
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<b>COURSE METHODOLOGY</b>	Weekly meetings with individual guides. This is followed up with a monthly discussion with allied faculties.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
Week 1	6 July 2021	Defining Area of Study		
	7 July 2021	Defining Area of Study		
Week 2	13 July 2021	Defining Area of Study		
	14 July 2021	Lecture: What is a Thesis?		
Week 3	20 July 2021	Defining Area of Study		
	21 July 2021	Defining Area of Study		
Week 4	27 July 2021	Preparing a Reading List		
	28 July 2021	Lecture: On Representation		
	31 July 2021	Thesis Intent - aim & objectives	Thesis Jury (Saturday)	
Week 5	3 August 2021	Building a repository of Images/ Ideas		
	4 August 2021	Presentation: Volume Case Study 1		
Week 6	10 August 2021	Developing an Argument Structure		
	11 August 2021	Lecture on Academic Ethics		
Week 7	17 August 2021	Preparing an Abstract		
	18 August 2021	Using Images as Arguments		
	21 August 2021	Site Study, Methodology	Thesis Jury (Saturday)	
Week 8	24 August 2021	Framing a Title		
	25 August 2021	Presentation: Volume Case Study 2		
Week 9	31 August 2021	Writing the Introduction		
	1 September 2021	Lecture: Styles and Conventions of Research Writing		
Week 10	7 September 2021	Writing the Introduction		
	8 September 2021	Presentation: Volume Case Study 3		
Week 11	14 September 2021	Writing the Conclusion		
	15 September 2021	Writing the Conclusion		
	18 September 2021	Site Study & Analysis	Thesis Jury (Saturday)	
Week 12	21 September 2021	Writing the Chapters		

	22 September 2021	Writing the Chapters
Week 13	28 September 2021	Writing the Chapters
	29 September 2021	Writing the Chapters
Week 14	5 October 2021	Writing the Chapters
	6 October 2021	Writing the Chapters
	9 October 2021	First Draft of Final Thesis
		Thesis Jury (Saturday)
Week 15	12 October 2021	Writing the Chapters
	13 October 2021	Writing the Chapters
Week 16	19 October 2021	

**LEARNING OUTCOMES**

**READING LIST/ REFERENCES**

## CO-PO mapped syllabi of B.Arch Course 2021-2022 – *Design Dissertation*

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course:** *Design Dissertation*

**Course Code:** *BARD 911*

**Sem:** *9*

**Name -** *2021-2022*

**Course Objectives:** *The course is aimed at developing the argument structure for the final year thesis dissertation.*

**Course Outcomes (CO):** *(Maximum number of course outcomes should be 5 and min 3 as per NAAC guidelines, Ethics based etc )*

Course Outcome (Co)	Description
CO1	<i>Enabling the students to explore and research specific topics related to their field of interest. Develop research ability and skills for writing and presenting a thesis report.</i>
CO2	<i>Analyze and evaluate the built environment and sites.</i>
CO3	<i>Create modes for reflexive thinking through research.</i>
CO4	<i>Understanding of the theoretical and applied research methodologies and practices used during the design process.</i>



**Rubrics:**

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
2021-2022	Subject:	Subject Code	University Subject Code	Sessional Marks: 100	Exercise 01 & 02: Marks out of	Credits	Date of submission		
FIFTH YEAR - SEM 9	Design Dissertation	911		100		4			
Exercise: Title									
Exercise Note / Task									
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Nature of Inquiry/ Intent of Thesis – Aims and Objectives	Exceptional	Outstanding	Excellent	Sophisticated	Very Good	Good	Fair	Satisfactory	Poor
Rigor of research/ Site Study and Methodology	Exceptional understanding of analyzing and understanding site.	Outstanding understanding of analyzing and understanding site.	Excellent understanding of analyzing and understanding site.	Sophisticated understanding of analyzing and understanding site.	Very good understanding of analyzing and understanding site.	Good understanding of analyzing and understanding site.	Fair understanding of analyzing and understanding site.	Satisfactory understanding of analyzing and understanding site.	Poor understanding of analyzing and understanding site.
Argument Building/ Narrative	Exceptional argument and narrative building to support the intent (aims and objectives) of the thesis.	Outstanding argument and narrative building to support the intent (aims and objectives) of the thesis.	Excellent argument and narrative building to support the intent (aims and objectives) of the thesis.	Sophisticated argument and narrative building to support the intent (aims and objectives) of the thesis.	Very Good argument and narrative building to support the intent (aims and objectives) of the thesis.	Good argument and narrative building to support the intent (aims and objectives) of the thesis.	Fair argument and narrative building to support the intent (aims and objectives) of the thesis.	Satisfactory argument and narrative building to support the intent (aims and objectives) of the thesis.	Poor argument and narrative building to support the intent (aims and objectives) of the thesis.
Articulation of research and compilation of thesis	Exceptional articulation of research and compilation of the final design proposal	Outstanding articulation of research and compilation of the final design proposal	Excellent articulation of research and compilation of the final design proposal	Sophisticated articulation of research and compilation of the final design proposal	Very Good articulation of research and compilation of the final design proposal	Good articulation of research and compilation of the final design proposal	Fair articulation of research and compilation of the final design proposal	Satisfactory articulation of research and compilation of the final design proposal	Poor articulation of research and compilation of the final design proposal

COPO Mapping Setup for SEM 9

CO-PO mapping									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Enabling the students to explore and research specific topics related to their field of interest. Develop research ability and skills for writing and presenting a thesis report.	3	3	3	1	1	1	0	1
CO2	Analyze and evaluate the built environment and sites.	1	1	1	0	0	2	2	1
CO3	Create modes for reflexive thinking through research.	3	2	3	1	0	2	2	2
CO4	Understanding of the theoretical and applied research methodologies and practices used during the design process.	3	3	3	0	0	2	2	3

1 – Slight (Low) Correlation  
0 – No Correlation

2- Moderate (Medium) Correlation

3- Substantial (high) Correlation

# Semester 10

## Scheme of Teaching and Examinations

### Scheme of Teaching and Examinations Bachelor of Architecture (B. Arch.)

#### Semester X

COURSE CODE.	Semester X Exam conducted by University of Mumbai COURSES	Teaching Scheme		Credits		
		Lecture	Studio	Theory	Studio	Total
BARC 1006	Environmental studies 5 ( Building sciences and sustainability)	2	8 classes of technology studio	2	1	3
BARC 1007	Architectural representation & detailing 9				6	6
BARC 1012	Advanced Building Construction and structures	2		2	1	3
BARC 1009	Advanced Theories 4			2		2
BARC 1010	Professional Practice 3	2		2		2
BARD 1011	Design Dissertation 2		16		16	16
BARE 1021	Elective 10		4		4	4
	Total	2	34	2	34	36

COURSE CODE	Semester X Exam conducted by University of Mumbai COURSES	Examination Scheme			
		Theory (paper)	Internal	External viva	Total
BARC 1006	Environmental studies 5 ( Building sciences and sustainability)		100		100
BARC 1007	Architectural representation & detailing 9		100	100	200
BARC 1012	Advanced Building Construction and structures		100		100
BARC 1009	Architectural Theories 4		50		50
BARC 1010	Professional Practice 3		50		50
BARD 1011	Design Dissertation 2		200	200	400
BARE 1021	Elective 9		100		100
	Total		700	300	1000

# Semester 10

# Semester 10

## Time-Table

	MONDAY		TUESDAY							
8.00 - 8.50	<b>ARCHITECTURAL REPRESENTATION AND DETAILING, 3 ARD, 1 ABC</b>		<b>Technology Lecture 2 - Environmental Studies</b>		<b>Design Dissertation</b>		<b>Design Dissertation</b>		<b>ARCHITECTURAL REPRESENTATION AND DETAILING, 3 ARD, 1 evs</b>	
	<i>BARC 1007, BARC 1012</i>	3 ARD, 1 ABC	<i>BARC 1006</i>	2 of 3	<i>BARD 1011</i>	4 of 16	<i>BARD 1011</i>	4 of 16	<i>BARC 1007, BARC 1012</i>	3 ARD, 1 evs
8.50 - 9.40	kimaya		minal	Kimaya	Pinkish, Ainsley, rohann, Paul, George, Ginella, jimmy, shirish, sonnal, apurva, nemishh, Nikhhil, Jude, vandana, Shilpa, shweta, ta vatsal		Pinkish, Ainsley, rohann, Paul, George, Ginella, jimmy, shirish, sonnal, apurva, nemishh, Nikhhil, Jude, vandana, Shilpa, shweta, ta vatsal		kimaya	
9.40 - 10.30	Jimmy		<b>Design Dissertation</b>						Jimmy	
	shantanu p	Vikram	<i>BARD 1011</i>	5 of 16					shantanu p	Vikram
10.30 - 11.20	Minal		Pinkish, Ainsley, rohann, Paul, George, Ginella, jimmy, shirish, sonnal, apurva, nemishh, Nikhhil, Jude, vandana, Shilpa, shweta, ta vatsal						Minal	
	Shantanu k								Shantanu k	
11.20 - 12.00										
12.00-12.50									<b>Design Dissertation</b>	
									<i>BARD 1011</i>	3 of 16
12.50 - 1.20										
1.20 - 2.10	<b>Professional Practice</b>				<b>Technology Lecture 1 - Architectural Building Construction</b>		<b>Advanced Theories</b>		Pinkish, Ainsley, rohann, Paul, George, Ginella, jimmy, shirish, sonnal, apurva, nemishh, Nikhhil, Jude, vandana, Shilpa, shweta, ta vatsal	
	<i>barc 1010</i>	2			barc 1012, BARC 1006	2 of 3	<i>barc 1009</i>	2		
2.10 - 3.00	mamta	Shuchi			vikram	Jimmy	sonal, rutika	Aishwarya		

<b>COURSE CODE</b>	EVS 5 (BARC 1006)	<b>CREDITS</b>	3 (2EVS+1ARD)
<b>COURSE NAME</b>	ENVIRONMENTAL STUDIES V	<b>SESSIONAL MARKS</b>	100 marks per semester
<b>FACULTY</b>	KIMAYA K, MINAL Y	<b>EXAM SCHEME</b>	Internal
<b>CLASS DAY/TIME</b>	TUESDAY   8.00-9.40 AM IST	<b>NON-CLASS TIME</b>	2 hours per week

<b>PEDAGOGIC INTENT</b>	Course focusses on engaging students at urban scale dealing with urban issues and sustainability parameters. Analysing data to be able to implement design strategies with respect to site/context, understanding various technologies for efficient resource management creating low environmental impact built forms. The representational aspects of environmental studies cater to ARD course.
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<b>COURSE METHODOLOGY</b>	Theory Lectures showcasing design projects and Discussions
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	23/11/2021	Case studies – Site analysis and representation of Data	Case Study Presentation	100%
2	30/11/2021	Case studies – Site planning and Master Planning		
3	07/12/2021	Site strategy and Implementation		
4	14/12/2021	Site strategies for eco-sensitive sites		
5	21/12/2021	Site strategies for Brownfield Site (Quarry)		
6	04/01/2022	Restoration and Rejuvenation methods for brown field sites		
7	11/01/2022	Case Studies – Climate responsive Design		
8	18/01/2022	Case Studies - Façade Development		
9	25/01/2022	Case Studies - Biomimicry		
10	01/02/2022	Case Studies – Energy Efficient building systems and Materiality		
11	08/02/2022	Case Studies – Energy Efficient building systems and Materiality		
12	15/02/2022	Architectural Representation for Environmental systems		
13	22/02/2022	Case Study Presentations		
14	01/03/2022	Discussion		
15	08/03/2022	Final submission of case studies by students		
16	15/03/2022	Final submission of case studies by students	Final submission of case studies	

<b>LEARNING OUTCOMES</b>	Knowledge and understanding of Environmental systems to be incorporated with their architectural design project
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<b>READING LIST/ REFERENCES</b>	1 Handbook on Energy conscious buildings, 2 Environmental planning Anne Beer, 3 Skyscrapers, KenYeang, 4 Ecological Architecture, 5 Soleri, 6 Energy Efficient buildings, 7 Environments, Technology and sustainibility and Design with Nature, 9 Sustaianble builing in practices, 10 Responsive environments, 11 Ecohouse, 12 Green Architecture, 13 Natural Ventilation in Urban Enviornment , Greening Asia by Krishanan, Aquatecture by Robert Barker , Atlas for Sustainable Architecture by Pfammter
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – Environmental Studies

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acqu excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an abi to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceed towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptua ideas with respect to time and space. To define boundaries and regions to collaborate and n the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and obj around them in mediums that are abstract (both nonlinear and non-conventional as wel those that are scientific and mathematical).
2. To enable the student to delayer the self through one’s associations, one’s familiarity with world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultu environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one’s own project
6. To enable the student to observe, experience, analyze space, its physicality and its associati through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the b of design
8. To enable the student to break the boundary between abstract thought and material realitie
9. To enable students to discover multiple methods and tools to develop their own proces: learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinkir
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and t concrete. (Abstract / Concrete).
4. To challenge students to evolve empahyv and understanding to cultures outside of their own confi

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course:** Environmental Studies 6  
**Course Code:** BARC 1006  
**Sem** 10  
**Year** 21-22

**Course Objectives:**

- Course focusses on engaging students at urban scale dealing with urban issues and sustainability parameters.
- Analyzing data to be able to implement design strategies with respect to site/context, understanding various technologies for efficient resource management creating built forms with low environmental impact.
- To be able to represent the environmental systems in a building. The representational techniques of environmental systems in a building will cater to the subject ‘Architectural Representation and Detailing’.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To identify the area of interest specific to environmental revelation.
CO2	To enable students to develop critical thinking, analytical, representational and technical skills to inform environment-sensitive design decision, keeping in mind specifics of environmental ethics and justice.
CO3	To gain holistic understanding of urban sustainability while focusing on understanding sustainable development goals.
CO4	To be able to understand current urbanization-induced environmental challenges and further manage architectural complexities within urban/rural environment.

**Rubrics:**

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject code	Sessional Marks:	Exercise 01: Marks out of	Credits:	Date of submission	Upgrade 01	Upgrade 02	
FIFTH YEAR-SEM10	EVS	BARC 1006	100	100	3: 2EVS+1ARD	08.03.2022			
<b>Exercise: Title</b>	Case Study presentation								
<b>Exercise Note / Task</b>	Case Study presentations on environment sensitive architectural projects								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% - 55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
Data Gathering / monitoring and collating	Attendance and participation in the discussions	Well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very well curated outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Excellent curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Very Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Good curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Fair curation using outstanding analytical drawings and clarity in explaining the concept and architectural design intent	Basic level of inquiry incorporating the minimum requirements	Arbitrary and Adhoc Inquiry

Depth of Inquiry and ability to generate analytical drawings	Showcasing all adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing well outstanding insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing Outstanding insights using tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing excellent insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing very good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing good insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Showcasing fair insights using adopted tools, frameworks to develop methodology to critique and analyse the data collected	Generic methods of analysis	Not informed processes of adaptation of tools and frameworks
Representation Technique and final submission	Very well formatted presentation of case studies explaining concepts, processes adopted using diagrams, sketches and assessment	Well formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Clear formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Very good formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Good formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Fairly formatted presentation of case studies explaining concepts, process adopted using diagrams, sketches and assessment	Barely managed to get clarity of intent and study using poor diagrams and sketches	Less clarity in terms of ideas and processes to be followed	Absolute no clarity of thought and understanding of the subject

Attendance and participation in the discussions	100 % mental and physical presence during the class	75% attendance and super outstanding participation	75% attendance and outstanding participation	75% attendance and excellent participation	75% attendance and very good participation	75% attendance and good participation	75% attendance and Fair participation	75% attendance and average participation	Poor participation and absence
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COPO Mapping Setup for Sem 10

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To identify the area of interest specific to environmental revelation.	3	1	1	2	1	2	2	3
CO2	To enable students to develop critical thinking, analytical, representational and technical skills to inform environment-sensitive design decision, keeping in mind specifics of environmental ethics and justice.	3	2	2	1	1	2	2	2
CO3	To gain holistic understanding of urban sustainability while focusing on understanding sustainable development goals.	3	1	1	2	2	2	2	2
CO4	To be able to analytically understand the climatic variables, followed by a resolution of the building keeping in view a strong climate response.	2	2	2	2	1	2	3	1

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

<b>COURSE CODE</b>	BARC 1006, 1007, 1012	<b>CREDITS</b>	6ARD+ 1ABC+1EVS
<b>COURSE NAME</b>	Architectural Representation and Detailing IX	<b>SESSIONAL MARKS</b>	100
<b>FACULTY</b>	Ainsley Lewis, Vikram Pawar, Jamshid Bhiwandiwala, Minal Yerramshetty, Kimaya Keluskar	<b>EXAM SCHEME</b>	External viva -100
<b>CLASS DAY/TIME</b>	Friday 9-12:20	<b>NON-CLASS TIME</b>	9-12:20

<b>PEDAGOGIC INTENT</b>	To emphasise on scientific and exploratory attitude in developing culturally and environmentally more responsive and richer architecture; material and system usage and detailing.
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<b>COURSE METHODOLOGY</b>	Mentoring Individually as per their thesis intent and objectives; Presentations of case studies and lectures by previous years students; creating exercises as per individual thesis requirements thereby prodding them to explore systems (structural, ecological, MEP etc.) through case studies and resolve the designs using industry standards/ customised solutions, develop explanatory models, drawings of systems and detailing.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	26-Nov-21	Acquainting with Individual Thesis		
2	3-Dec-21	Inputs for technical requirements & program		
3	10-Dec-21	Studio Interactions (program, site & concept diagram)		
4	17-Dec-21	Jury (program, site & concept diagram)	Site sections and Plans along with site related data	20
5	7-Jan-22	Thesis presentation & Interaction 1 / Studio Interactions		
6	14-Jan-22	Studio Interactions		
7	21-Jan-22	Jury (structural diagram explorations & grid)	Minimum two Case studies related to Dissertation	20
8	28-Jan-22	Thesis presentation & Interaction 2 / Studio Interactions		
9	4-Feb-22	Studio Interactions		
10	11-Feb-22	Thesis presentation & Interaction 3 /Studio Interactions		
11	18-Feb-22	Studio Interactions		
12	25-Feb-22	Jury (Envelope explorations, site outlay)	Cross Section of Façade, All Floor Plans and 02 section	20
13	4-Mar-22	Thesis presentation & Interaction 4 /Studio Interactions		
14	11-Mar-22	Studio Interactions		
15	18-Mar-22	Studio Interactions		
16	25-Mar-22	Jury (Final)	Drawings supported by A3 Report	40

<b>LEARNING OUTCOMES</b>	Research skills related to systemic and material understanding of both Tectonic as well as Environmental issues and their solutions.  Articulation of technological explorations and possible overlaps with design dissertation.
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<b>READING LIST/ REFERENCES</b>	-
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – *Architectural Representation and Detailing 8*

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity.

(Individual / Collective)

6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course:** *Architectural Representation and Detailing 9*

**Course Code:** *BARC 1007*

**Sem 10**

**Name - 2021-22**

**Course Objectives:**

1. To enable students to make decisions about the directions for their future practices through reflexive thinking and research further to their learning in earlier 4 years.
2. To enable an intersection of architectural practice with the academic space where both the school and the students make choices based on their particular interest.
3. To bring into the academic space, explorations of particular interests in the city.
4. To continue to urge students to pursue their interest in systemic understanding of architecture as tectonic as well as environmental.
5. To explore complex built forms through integration with archetype resolutions.
6. To urge students to develop an ethical choice for practice in context to the role that architecture should take on, in relation to history, ecology and making a more fair world.

**Course Outcomes (CO):** (Maximum number of course outcomes should be 5 and min 3 as per NAAC guidelines, Ethics based etc )

Course Outcome (Co)	Description
CO1	They develop an intuitive understanding of the various building systems and proportionate sizes of the components and are able to visualise their concepts as material objects subjected to natural forces, usage and constructional possibilities.
CO2	Analysis of built form from structural perspective; climatic factors and the building elements response to it; the materials used in making the built form and the various elements; visualising process of construction on site; and anticipating behaviour of the structure over its expected life span forms the core scope of technology pedagogy.
CO3	They are able to develop and represent a substantially sound technical proposal.
CO4	They refer to appropriate resources (case studies, standards, technical literature, guidelines, handbooks, codes, etc.) as required while arriving at solutions to the design problems. In absence of suitable standards, they are able to custom design details befitting their core idea.
CO5	They develop empathy towards craft and craftsmanship and they themselves inculcate a practice of doing “hands-on” wherever the opportunity is available.

**Rubrics:**

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	University Subject Code	Sessional Marks:	Exercise: Marks out of	Credits	Date of submission			
FIFTH YEAR - SEM 10	Architectural Representation & Detailing-9	BARC 1007	100	100	6				
Exercise: Title	Resolution Studio								
Exercise Note / Task	Evolving systemic concepts of the dissertation & representing related/ significant technologies								
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
Analytical skills	Innovative. Experimental and Bold Clarity. Expressive of relevance.	Very impressive. Highly demonstrative.	Impressive attempt to go beyond requirement. Excellent presentation of ideas.	Demonstrative. Very good attempt to present ideas.	Has gone beyond the requirement. More than adequate attempt to present ideas.	Attempts to express and go beyond the requirement. Just adequate	No further enquiry. Barely encourages a discussion. Needs clarity	No further enquiry. Does not encourage a discussion	Does not complete the assignment
Representation through drawings	Innovative. Experimental and Bold Clarity. Expressive of relevance.	Very impressive. Highly demonstrative.	Impressive attempt to go beyond requirement. Excellent presentation of ideas.	Demonstrative. Very good attempt to present ideas.	Has gone beyond the requirement. More than adequate attempt to present ideas.	Attempts to express and go beyond the requirement. Just adequate	No further enquiry. Barely encourages a discussion. Needs clarity	No further enquiry. Does not encourage a discussion	Does not complete the assignment
Ideas for synthesis drawings	Innovative. Experimental and Bold Clarity.	Very impressive. Highly demonstrative.	Excellent presentation of ideas.	Very good attempt to present ideas.	More than adequate attempt to present ideas.	Just adequate attempt to present ideas.	No further enquiry.	No further enquiry.	Does not complete the assignment
Participation in Studio	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes



CO-PO mapping									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Intuitive Understanding of Systems	3	3	3	2	2	3	3	2
CO2	Structural and Construction soundness	3	3	3	2	2	3	3	3
CO3	Representing technically feasible proposal	3	3	3	3	2	3	3	3
CO4	Referencing & Innovations in Detailing.	3	3	3	3	2	3	3	3
CO5	Empathy towards craft and craftsmanship	2	2	3	3	2	3	2	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation

0 – No Correlation

COURSE CODE	TLC022/ TLDS022	CREDITS	
COURSE NAME	Technology Lecture 1(ABC/TOS)	SESSIONAL MARKS	50
FACULTY	Vikram, Jamshid	EXAM SCHEME	50
CLASS DAY/TIME	Wednesday 13 20 to 15 00	NON-CLASS TIME	nil

PEDAGOGIC INTENT	Since the mandated syllabus was already covered by 9th semester, the scheduled Construction classes are intended to inspire the students to appreciate and acknowledge design thinking as a process which encompasses the manifestation of design ideas.
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COURSE METHODOLOGY	Curated theme based lectures; invited guests from alumni to present them based works; encouraging interactions and query of the relevance and working of a given technology.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	24/11/21	Introduction		
2	01/12/21	Temporal/ modular/ Dismantlable construction		
3	08/12/21	Challenges of Intervening in Heritage sites		
4	15/12/21	Construction challenges of Blue- Green Infrastructure- urban scale		
5	22/12/21	Urban Infrastructure Construct-		
6	05/01/22	Construct of 'Net zero' architecture.		
7	12/01/22	Bio-phillic architecture construction		
8	19/01/22	Architecture of the 'Recycle'		
9	26/01/22			
10	02/02/22	Building craft with Robotics, Automation, Artificial Intelligence, Machine Learning		
11	09/02/22	Reiterating Structural Concerns of built forms and their representation		
12	16/02/22	Technical challenges of Insitu Upgradation		
13	21/02/22	Closing session/ Recap/ Feedback		

LEARNING OUTCOMES	An ability to question relevance of technologies traditional as well as contemporary; an appreciation of diverse technical solutions to an issue and evaluating them on short and long term sustenance basis
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READING LIST/ REFERENCES	
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – *Architectural Building Construction*

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)
5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Architectural Building Construction**

**Course Code: BARC 1012**

**Sem 10**

**Name - Fifth**

**Course Objectives:**

**To emphasise on scientific and exploratory aptitude in developing culturally and environmentally more responsive and richer architecture; material and system usage and detailing.**

**Course Outcomes (CO):** (Maximum number of course outcomes should be 5 and min 3 as per NAAC guidelines, Ethics based etc )

Course Outcome	Description
CO1	<b>To analyse thesis projects and attempt technological interventions to the design proposals</b>
CO2	<b>To create analytical physical models and studies based on the learnings of the lectures and relate them.</b>
CO3	<b>To understand the technical aspects of large scale projects including infrastructure, MEP, ecology, systems, etc.</b>

**Rubrics:**

Year of Assessment: 2023-2024	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
Year & Sem	Subject:	Subject Code	University Subject Code	Sessional Marks: 100	Exercise 01 & 02: Marks out of	Credits	Date of submission		
<b>FIFTH YEAR SEM 10</b>	<b>Architectural Building Construction</b>	<b>BARC 1012</b>	<b>BARC 1012</b>	<b>100</b>		<b>3</b>			
<b>Exercise: Title</b>	Application of technology on dissertation projects								
<b>Exercise Note / Task</b>	Reports, Panels and or Physical study models of interventions co related to the thesis proposals								
<b>Assessment</b>			<b>Outstanding</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Fail</b>
<b>Grade</b>	<b>O++</b>	<b>O+</b>	<b>O</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Percentage</b>	<b>90% and above</b>	<b>80%</b>	<b>79% - 75%</b>	<b>74% - 70%</b>	<b>69% - 65%</b>	<b>64% - 60%</b>	<b>59% - 55%</b>	<b>54% - 50%</b>	<b>49% - 40%</b>
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Understanding and application of systems to design proposals</b>	<b>Thorough understanding of explored interventions</b>	<b>Very good understanding of explored interventions</b>	<b>Good understanding of explored interventions</b>	<b>Fair understanding of explored interventions</b>	<b>Satisfactory understanding of explored interventions</b>	<b>Understanding of explored interventions</b>	<b>Below average understanding of explored interventions</b>	<b>Poor understanding of explored interventions</b>	<b>No understanding of explored interventions</b>
<b>Representation Technique and final submission</b>	<b>Very well formatted presentation</b>	<b>Well formatted presentation</b>	<b>Clear formatted presentation</b>	<b>Very good formatted presentation</b>	<b>Good formatted presentation</b>	<b>Fairly formatted presentation</b>	<b>Barely managed to get clarity of intent</b>	<b>Less clarity in terms of ideas and processes</b>	<b>Absolute no clarity of thought and understanding of the subject</b>
<b>Participation in Class</b>	<b>Attends less than 95% of total classes</b>	<b>Attends less than 90% of total classes</b>	<b>Attends less than 85% of total classes</b>	<b>Attends less than 75% of total classes</b>	<b>Attends less than 70% of total classes</b>	<b>Attends less than 65% of total classes</b>	<b>Attends less than 60% of total classes</b>	<b>Attends less than 55% of total classes</b>	<b>Attends less than 50% of total classes</b>

CO-PO mapping									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	<b>To analyse thesis projects and attempt technological interventions to the design proposals</b>	2	2	2	1	0	3	3	3
CO2	<b>To create analytical physical models and studies based on the learnings of the lectures and relate them.</b>	2	2	2	0	3	2	2	1
CO3	<b>To understand the technical aspects of large scale projects including infrastructure, MEP, ecology, systems, etc.</b>	2	2	2	1	3	2	2	1

1 – Slight (Low) Correlation  
0 – No Correlation

2- Moderate (Medium) Correlation

3- Substantial (high) Correlation

<b>COURSE CODE</b>	BARC1009	<b>CREDITS</b>	2
<b>COURSE NAME</b>	Advanced Theories	<b>SESSIONAL MARKS</b>	50 marks
<b>FACULTY</b>	Sonal Sundarajan , Rutika Parulkar , Aishwarya P	<b>EXAM SCHEME</b>	Internal submission
<b>CLASS DAY/TIME</b>	Thursday/ 1.20-3.00 pm	<b>NON-CLASS TIME</b>	

<b>PEDAGOGIC INTENT</b>	Architecture and the Anthropocene- The architectural theory course will engage with the shifts in conceptualizations of bodies, space and ecologies in the Anthropocene and thinking architecture through these notions. Architectural thinking like our everyday lives must now intersect and traverse the imaginable scales of the microscopic, viral, fluid, connected and fragile world that we inhabit, The course will look at three larger themes - the critique of history conceptualized as progress, imagining architecture beyond anthropocentrism in order to attempt to displace and recast fundamental presumptions of architectural thinking and practice.
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<b>COURSE METHODOLOGY</b>	The two thematic will be broken up into several smaller ideas- introduced through special lectures, presentations and reading material, films. These will be punctuated with interactive discussion sessions that will employ Miro Boards and other tools, to allow for collective participation and thinking. The marking will be based individual contributions to collective assignment on looking at the questions around spaces and obsolescence/waste.
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WEEK	DATE	TEACHING CONTENT	Areas covered
1	25 <sup>th</sup> Nov	INTRODUCTION TO THE COURSE. Screening- The Gleaners by Agnes Varda	Discussion
2	2 <sup>nd</sup> Dec	<b>The Critique of History as Progress.</b> A presentation on the Arcades Project and reading excerpts from the Thesis on the Philosophy of History. By Walter Benjamin	Idea of history as progress ,Thinking of philosophy of history . ( Lecture + Discussion)
3	9 <sup>th</sup> Dec	<b>Obsolescence and Architecture</b> – Thesis Presentation by Yash Ghorecha and discussion, screening of “The Examined Live with Slavoz Zizek”.Introduction to Assignment and uploading Pritzker article for reading.	A discussion on obsolescence and space. Landscapes of consumption and waste. ( Lecture + Discussion)
4	16 <sup>th</sup> Dec	<b>The Ruin of Architecture</b> – Lecture by Apoorva lyengar. Reading of Pritzker Essay and discussion on lecture	Discussions on ruins, as experience as materialised historical process, as artefacts.
5	23 <sup>rd</sup> Dec	<b>Architecture of Ruins</b> , Idea of fragments in architecture	An interactive discussion on the responses of architects to the ruin.

6	30 <sup>th</sup> Dec	<b>Working session</b>	
7	6 <sup>th</sup> Jan	<b>Beyond Anthropocentrism. Architecture in the Anthropocene- Reading Companion Species Manifesto. Screening of Leviathan by(Lucien Castaing-Taylor, Verena Paravel)</b>	
8	13 <sup>th</sup> Jan	<b>Beyond Anthropocentrism. Architecture in the Anthropocene- on Wetness- Rhea Shah(Lecture)</b>	A critique of cartography through the lens of practices and temporalities.
9	20 <sup>th</sup> Jan	<b>Beyond Anthropocentrism. Architecture in the Anthropocene</b>	Discussion on the works of architects that deal with the non-human or post-human architecture.
10	27 <sup>th</sup> Jan	Hidden Ecologies – Germs and Architecture	Reading excerpts from Manuel DeLanda. A thousand years of non-linear history. Discussion on X-ray Architecture , Beatriz Colomina
11	3 <sup>rd</sup> Feb	Antiseptic Architecture- Building the lexicon.	
12	10 <sup>th</sup> Feb	Working Session- ASSIGNMENT	
13	17 <sup>th</sup> Feb	Tarzans in the Media forest	Screening- Sendai mediatheque, too Ito, 23 architecture Films. Reading- Tarzans in the Media Forest- Toyo Ito- Volume Magazine, no. 59 May 2021.
14	24 <sup>th</sup> Feb	Working Session- ASSIGNMENT	
15	3 <sup>rd</sup> March	Final Presentation	
16	10 <sup>th</sup> March	Final Presentation	

Remaining march dates - 17<sup>th</sup> , 24<sup>th</sup> and 31<sup>st</sup> March will be used mainly for final presentations  
One class will be adjusted for elective week.

<b>LEARNING OUTCOMES</b>	Students will be exposed to the works of philosophers and architects that are engaging with the transformed understandings of nature-cultures in our lives. They will derive and develop their frameworks and tools for analysis from these examples, within class discussions and assignments that lead them into a critical reflection of their contemporary landscape.
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**READING LIST/REFERENCE S**

1. *The Arcades Project*, Benjamin & Tiedemann - Belknap Press - 1999
2. *Myth and Reality: Studies in the Formation of Indian Culture*, D.D. Kossambi, Popular Prakashan, 1992
3. *A Thousand Years of Nonlinear History*. By Manuel De Landa. New York: Zone Books, 1997.
4. *History of the World through 100 objects*. By Neil MacGregor, Penguin UK (28 June 2012)
5. *On History*. By Eric Hobsbawm, Great Britain, Wiedenfeld & Nicolson, 1997
6. *Between Memory and History*, By Pierre Nora, Representations, No. 26, Special Issue: Memory and Counter-Memory, 1989
7. *The Past is a Foreign Country*, By David Lowenthal, Cambridge University Press, 1985
8. *Two Essays*, By Georg Simmel, The Hudson Review, Vol. 11, No. 3 (Autumn, 1958), pp. 371-385
9. *The Landscape of Ruins*, By John A. Pinto Et. All, Site Lines, A Journal of Place, Volume XI, Issue 2, 2016
10. *X-Ray Architecture*, Beatriz Colomina, Müller Publishers. 2019
11. *Tarzans in the Media forest*, Toyo Ito, Volume Magazine, Issue 59, May 2021
12. *A Cyborg Manifesto: Science, technology, and Socialist-Feminism in the Late Twentieth Century*, in Simians, Cyborgs, and Women: The Reinvention of Nature, Donna J. Haraway, New York: Routledge, 1991)
13. *The Companion Species Manifesto : Dogs, People, and Significant Otherness*. Haraway, Donna Jeanne., Chicago, Ill. : Bristol :Prickly Paradigm ; University Presses Marketing, 2003.
- 14 *Fragments : architecture and the unfinished : essays presented to Robin Middleton*

**CO-PO mapped syllabi of B.Arch Course 2021-2022 – Advanced Theories 4****Program Educational Objective (PEOs): B.Arch.**

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

**Program-Specific Outcomes (PSOs):**

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

**POs for UG program: B.Arch.**

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).

4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

Course: Advanced Theories 4

Course Code: BARC 1009

Sem 10

Name - Fifth

**Course Objectives:**

- To enable students to get familiar with various important thinkers, and work that shaped the contemporary world of art and architecture.
- To understand the idea of structuralism and language as a structure
- To learn to apply different critical tools ( collage , image analysis) which helps to examine concepts from the history of art and architecture, as well as contemporary architecture cultures
- To enable students to understand and discuss fairly complex theoretical text by breaking it into sections distributed across class.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	To understand and create different frameworks of analysis and skills of critical thinking that employed comparative (across mediums, across objects) and analytical (through a close reading) method.
CO2	To create skills of reading concepts, habit of conceptual enquiry and argumentation across forms and mediums across history of art and architecture, as well as contemporary architecture cultures.
CO3	To evaluate history of important ideas and their relationships to contemporary ideas and phenomena that shaped the world.

**Rubrics:**

Year of Assessment : 2020-2021	USM's Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture									
Year & Sem	Subject:	University Subject Code	Sessional Marks:	Exercise: Marks out of	Credits	Date of submission				
Fifth YEAR - SEM 10	Advanced Theories	BARC 1009	50	50	2					
Exercise: Title	Ideas that Shaped the World – Structures of Knowledge									
Exercise Note / Task	Reading of the texts provided. Illustrating the concepts through the selection of appropriate spatial/architectural examples from the contemporary world and through history.									
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail	
Grade	O++	O+	O	A	B	C	D	E	F	
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%	
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0	
<b>Area of Evaluation</b>										
Illustration and understanding of spatial dimensions within the conceptual framework.	Exceptional selection of examples to illustrate and analyse the concept and its spatial manifestations. Outstanding representation techniques and comparative frameworks utilised. Original conceptual diagrams and references made.	Outstanding selection of examples to illustrate and analyse the concept and its spatial manifestations. Outstanding representation techniques and comparative frameworks utilised. Original conceptual diagrams and references made.	Impressive attempt of selection of examples to illustrate and analyse the concept and its spatial manifestations. Outstanding representation techniques and comparative frameworks utilised. Original conceptual diagrams and references made.	Excellent Demonstration. selection of examples to illustrate and analyse the concept and its spatial manifestations. Excellent representation and comparative frameworks utilised.	A very good selection of examples to illustrate and analyse the concept and its spatial manifestations.	Attempts to present selection of examples to illustrate and analyse the concept and its spatial manifestations.	No clarity in selection of examples and further enquiry. Barely encourages a discussion. Needs clarity	A careless selection of unrelated examples, disconnected selection of examples that in no way relate to the concept and question	Does not complete the assignment	
Identifying new areas and possibilities within architectural or spatial thinking.	Exceptional Ability to critically examine and raise new possibilities and questions within the conceptual framework. Relationship to the contemporary context and futures identified in new innovative ways.	Outstanding Ability to critically examine and raise new possibilities and questions within the conceptual framework. Relationship to the contemporary context and futures identified in new innovative ways.	Excellent ability to critically examine and raise new possibilities and questions within the conceptual framework. Relationship to the contemporary context and futures identified in new innovative ways..	Very good ability to critically examine and raise new possibilities and questions within the conceptual framework. Relationship to the contemporary context and futures identified in new innovative ways..	More than adequate Ability to critically examine and raise new possibilities and questions within the conceptual framework. Relationship to the contemporary context and futures identified in new innovative ways.	Just adequate Ability to critically examine and raise new possibilities and questions within the conceptual framework. Relationship to the contemporary context and futures identified in new innovative ways..	Very poor Ability to critically examine and raise new possibilities and questions within the conceptual framework. Relationship to the contemporary context and futures identified in new innovative ways..	No Ability to critically examine and raise new possibilities and questions within the conceptual framework. Relationship to the contemporary context and futures identified in new innovative ways..	Does not complete the assignment	
Participation in Studio	Attends more than 90% of total classes	Attends 86 to 90% of total classes	Attends 76 to 85 % of total classes	Attends 71 to 75 % of total classes	Attends 66 to 70 % of total classes	Attends 61 to 65 % of total classes	Attends 56 to 60 % of total classes	Attends 51 to 55 % of total classes	Attends less than 50 % of total classes	

COPQ Mapping Setup for Sem 10

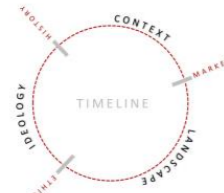
CO-PO mapping									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	To understand and create different frameworks of analysis and skills of critical thinking that employed comparative (across mediums, across objects) and analytical (through a close reading) method.	3	2	3	1	2	0	1	0
CO2	To create skills of reading concepts, habit of conceptual enquiry and argumentation across forms and mediums across history of art and architecture, as well as contemporary architecture cultures.	2	2	3	1	0	0	2	0
CO3	To evaluate history of important ideas and their relationships to contemporary ideas and phenomena that shaped the world.	1	0	2	3	1	0	3	2

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation



<b>COURSE CODE</b>	BARC 1010	<b>CREDITS</b>	
<b>COURSE NAME</b>	Situating Practice	<b>SESSIONAL MARKS</b>	50
<b>FACULTY</b>	Mamta, Shuchi	<b>EXAM SCHEME</b>	50
<b>CLASS DAY/TIME</b>	Monday 13:20 to 15:00 PM	<b>NON-CLASS TIME</b>	nil

<b>PEDAGOGIC INTENT</b>	<p>Domain of Positioning II The course deals with the question of Land, planning and environment in relation with the existing housing stock in the city. It aims to understand the dichotomy between the demand and supply of affordable housing since independence and the attempt of planning tools to address it.</p> <p>Architecture is a situated practice which relates to the social, aesthetic, cultural, and technological zeitgeist. The practice may be seen to be leading this zeitgeist or trying to catch up to it. In India, architecture since independence has gone through several phases of evolution. Different practices have situated themselves in different ways in relation to the contexts. Some operate within the market, providing the specific expertise that the market now demands, while yet others may reject the influence of the market and operate outside of it. Yet others may fall somewhere between these extremes on a spectrum of situated practices</p> <p>The aim of the exercise is to provide students with a perspective on how practitioners have articulated their practice in relation to theories concerning their place in global movements in architecture, and the influences that shaped them. The study of the architecture will be used to explain one's position and the question of ethics and code of conduct will be explored out of that position.</p> <p>The repository that results will begin to build a framework around how these practices have situated themselves within various contexts and establish a powerful way of understanding contemporary practices.</p>
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<b>COURSE METHOD</b>	 <p>In Progress: Evaluation of professional roles and practices; emergence of new modes of practice, including innovative facilities procurement methods. Lectures, Secondary literature, Readings</p>
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
1	03/01/22	Introduction to Situating practice Learning from Timelines		
2	10/01/22	Drawing from Context, Ideology, landscape of practice, ethics, market conditions etc	Mapping practice exercise	50
3	17/01/22	Drawing from Context, Ideology, landscape of practice, ethics, market conditions etc		
4	24/01/22	Drawing from Context, Ideology, landscape of practice, ethics, market conditions etc		
5	31/01/22	Delving into details: Eg. Market practice		
6	07/02/22	Delving into details: Eg. Market practice - the financial strings		
7	14/02/22	Delving into details: Eg. Redevelopment practice		
8	21/02/22	Delving into details: Eg. Community based practice(Ketki)		
9	28/02/22	Delving into details: Eg. Conservation (Jamshid eg. Udwada)		
10	07/03/22	Delving into details: Eg. Landscape (Sandeep)		
11	14/03/22	Delving into details: Eg. Academics (Shweta)		
12	21/03/22	Situating one's own practice: creating the blueprint		
13	28/03/22	Documentation		
14	04/04/22	Documentation		
15	11/04/22	Documentation		
16	18/04/22	Condonation		

<b>LEARNING OUTCOMES</b>	As future professionals, the course aims at trying to make students aware of this spectrum and asks them to imagine their own position in it. Towards this end, (maybe a few years), the students will be asked to analyse the findings and try to operationalize the idea of situated practice by creating a 'taxonomy' based on how the various practices describe themselves, how they are placed within the current context and how they may have evolved
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<b>READING LIST/ REFERENCES</b>	Architecture's "Political Compass": A Taxonomy of Emerging Architecture in One Diagram by Alejandro Zaera-Polo & Guillermo Fernandez Abascal
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – Professional Practice 3

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delayer the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Professional Practice 3      Course Code: BARC 1010      Sem 10      Fifth Year**

**Course Objectives:**

The aim is to provide students with a perspective on how practitioners have articulated their practice in relation to theories concerning their place in global movements in architecture, and the influences that shaped them.

The repository that results will begin to build a framework around how these practices have situated themselves within various contexts and establish a powerful way of understanding contemporary practices.

**Course Outcomes (CO):**

Course Outcome (Co)	Description
CO1	<b>The study of the architecture will be used to explain one's position and the question of ethics and code of conduct will be explored out of that position.</b>
CO2	<b>To build a framework around how these practices have situated themselves within various contexts and establish a powerful way of understanding contemporary practices.</b>
CO3	<b>To analyse ethical positions taken up by practices to contribute responsibly to the society, fellow professionals as well as the profession itself</b>

**Rubrics:**

Year of Assessment: 2021-2022		USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture							
21-22 FIFTH YEAR SEM 10	Subject:	University Subject Code	Sessional Marks: 50	Exercise 01 & 02: Marks out of	Credits	Date of submission			
FIFTH YEAR - SEM 10	Professional Practice III	BARC 1010		50	3				
<b>Exercise: Title</b>		Mapping Practices - Case Studies from India							
<b>Exercise Note / Task</b>		Working in small groups, students will be mapping practices from across the country, aiming to represent their study in the form of a taxonomy of practices							
<b>Assessment</b>			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
<b>Grade</b>	O++	O+	O	A	B	C	D	E	F
<b>Percentage</b>	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% - 55%	54% - 50%	49% - 40%
<b>Equivalent out of 10.0</b>	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
<b>Area of Evaluation</b>									
<b>Lenses of inquiry</b>	Extremely complex, new and original level of inquiry	Extremely complex, and comparatively new and comparatively original level of inquiry	Complex, and original level of inquiry	Moderate and original level of inquiry	Moderate and continued from earlier study level of inquiry	Normal and continued from earlier study level of inquiry	Normal and low level of inquiry	Normal and poor level of inquiry	Absence of inquiry
<b>Ability to demonstrate the Learnings from the Studio</b>	Extremely well-articulated	Very well-articulated	Well articulated	Articulated normally	Moderately Articulate	Less Articulate	Needs work	No Articulation	No Attempt
<b>Attendance, time management and participation in Studio</b>	100 % attendance, working and high level of interaction in the studio	80 % attendance, working and high level of interaction in the studio	75 % attendance, working and high level of interaction in the studio	70 % attendance, working and high level of interaction in the studio	65 % attendance, working and good level of interaction in the studio	60 % attendance, working and good level of interaction in the studio	55 % attendance, working and good level of interaction in the studio	50 % attendance, not working and low level of interaction in the studio	less than 50% attendance, not working and no level of interaction in the studio

CO-PO mapping for a course of “UG program”									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	<b>The study of the architecture will be used to explain one’s position and the question of ethics and code of conduct will be explored out of that position.</b>	2	1	2	1	3	2	2	2
CO2	<b>To build a framework around how these practices have situated themselves within various contexts and establish a powerful way of understanding contemporary practices.</b>	3	1	2	1	3	2	2	3
CO3	<b>To understand ethical positions taken up by practices to contribute responsibly to the society, fellow professionals as well as the profession itself</b>	2	0	1	2	3	3	3	3

1 – Slight (Low) Correlation

2- Moderate (Medium) Correlation

3- Substantial (high) Correlation

0 – No Correlation

<b>COURSE CODE</b>	BARD 1011	<b>CREDITS</b>	16
<b>COURSE NAME</b>	Design Dissertation	<b>SESSIONAL MARKS</b>	200
<b>FACULTY</b>	Aneerudha, Manoj, Ainsley, Rohan, Jamshid, Vikram, Sonal, Shweta, Kimaya, George, Ginella, Minal, Pinkish, Shirish, Mamta, Sandeep, Nemish, Nikhil, Jude, Apurva	<b>EXAM SCHEME</b>	Viva-Voce (200 Marks)
<b>CLASS DAY/TIME</b>	8:00 to 3:00 (Tuesday & Friday)	<b>NON-CLASS TIME</b>	-

<b>PEDAGOGIC INTENT</b>	The intent of the course is to make the students realise and manifest their research concerns into architectural projects with an awareness of the rigour of the architectural profession.
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<b>COURSE METHODOLOGY</b>	Weekly meetings with individual guides. This is followed up with a monthly discussion with allied faculties.
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WEEK	DATE	TEACHING CONTENT	ASSIGNMENTS	MARKING WEIGHTAGE
Week 1	3-7 January 2022	Preparation for Jury		
Week 2	10-14 January 2022	The primary focus of the jury would be Site Analysis and Program Finalization Out of	Site Drawing and Analysis Program and Detailed area statement Building Services Ideas and Mapping of site services Spans that one might have in their building and the construction system to be used accordingly. Material ideas - Are you using frugal, simple materials or cutting edge innovative ones. Mapping of Environmental systems and climate response strategies	
Week 3	17-21 January 2022	Working Studio		
Week 4	24-28 January 2022	Diagrams and Systems	Requirements: Design Diagrams and their placement on site Ideas of Systems : Structural systems Services systems Roofing Systems Ideas for fenestrations	
Week 5	31 January – 4 February 2022	Working Studio		
Week 6	7-11 February 2022	Working Studio		
Week 7	14-18 February 2022	Working Studio		
Week 8	21-25 February 2022	Design Development	Requirements: Building Language Facade systems based on Language and Climatic Response Deep Structure Diagrams Relationship of all the above to the Design Diagram and Massing done previously	
Week 9	28 February – 4 March 2022	Working Studio		
Week 10	7-11 March 2022	Working Studio		
Week 11	14-17 March 2022	Design Resolution	Design Development Design Resolution	
Week 12	21-25 March 2022	Working Studio		
Week 13	28 March – 1 April 2022	Working Studio		
Week 14	4-8 April 2022	Symposium	All requirements as expected for the university jury	
Week 15	11-15 April 2022		The guide will mark overall for the Semester	
Week 16	18-22 April 2022			

<b>LEARNING OUTCOMES</b>	
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<b>READING LIST/ REFERENCES</b>	
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## CO-PO mapped syllabi of B.Arch Course 2021-2022 – *Design Dissertation*

### Program Educational Objective (PEOs): B.Arch.

1. To nurture individuals towards a better understanding of learning methods to bridge the gap between theory and practice.
2. To respond to innovative needs and environmental and social responsibility one should acquire excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad-minded perspective on things.
4. To nurture an intent to unlearn and reinterpreted learning through the change, proceeding towards efficient and sustainable responses to varied situations.
5. To be able to assimilate knowledge to enhance spatial exploration, theorise and conceptualise ideas with respect to time and space. To define boundaries and regions to collaborate and meet the constantly changing world of climate change.

### Program-Specific Outcomes (PSOs):

1. To enable the student to be equipped with tools for communicating the spaces and objects around them in mediums that are abstract (both nonlinear and non-conventional as well as those that are scientific and mathematical).
2. To enable the student to delay the self through one's associations, one's familiarity with the world around and the body as a site of personal experiences.
3. To enable the student to recognize and build empathy towards the collective, other cultures, environments, and ecologies.
4. To engage the student in enquiry through hands-on work.
5. To enable the student to script one's own project
6. To enable the student to observe, experience, analyze space, its physicality and its associations through the body.
7. To enable the student to extract and the abstract from the experiential and center it as the basis of design
8. To enable the student to break the boundary between abstract thought and material realities
9. To enable students to discover multiple methods and tools to develop their own process of learning
10. To engage the student in collective work to build a sense of shared responsibility.

### POs for UG program: B.Arch.

1. The course intends to foster individuals who can question and critique existing systems of spatial production to allow for new and inventive way of intervening as architects through critical thinking.
2. To enable students with design skills that are able to navigate the space between the analytical and the intuitive. (Analytical / Intuitive)
3. To enable students with design skills that are able to navigate the space between the abstract and the concrete. (Abstract / Concrete).
4. To challenge students to evolve empathy and understanding to cultures outside of their own comfort

zones. ( Self / Other)

5. To instill in students the ability to work within groups without sacrificing their own identity. (Individual / Collective)
6. To enable students to discover the relationship between material cultures and socio-economic systems (Technical / Social)
7. To enable students to understand questions of architectural form in relationship with the systems it is embedded in and emerges from. (Object / System)
8. To enable students to question the relationship between the professional skills and role of the architect and the production of the spatial environment we inhabit. (Architect / Architecture)

**Course: Design Dissertation**  
**Course Code: BARD 1011**

**Sem: 10**

**Name - 2021-2022**

**Course Objectives:** The Architectural Thesis is the culmination of the development of the student's knowledge, attitudes and skills over the course of studies in architecture.

**Course Outcomes (CO):** (Maximum number of course outcomes should be 5 and min 3 as per NAAC guidelines, Ethics based etc )

Course Outcome (Co)	Description
CO1	Develop analytical skills and apply design strategies to create a socially and ecologically responsive architecture.
CO2	Ability to respond to site characteristics, including urban context and developmental patterns, historical fabric, soil, topography, ecology, climate, and building orientation, in the development and resolution of the architecture.
CO3	Understand and develop tectonic and structural resolution. Learn to combine the systematic/methodological learning from various stages of study and analysis in the design process towards culmination of an informed design.
CO4	Develop graphical representation and presentation skills to explain architecture design proposal.

**Rubrics:**

Year of Assessment: 2021-2022	USM's Kamla Raheja Vidyaniidhi Institute for Architecture and Environmental Studies / Bachelors of Architecture								
2021-2022	Subject:	Subject Code	University Subject Code	Sessional Marks: 100	Exercise 01 & 02: Marks out of	Credits	Date of submission		
FIFTH YEAR - SEM 10	Design Dissertation		1011	400		16			
Exercise: Title									
Exercise Note / Task									
Assessment			Outstanding	Excellent	Very Good	Good	Fair	Satisfactory	Fail
Grade	O++	O+	O	A	B	C	D	E	F
Percentage	90% and above	80%	79% - 75%	74% - 70%	69% - 65%	64% - 60%	59% -55%	54% - 50%	49% -40%
Equivalent out of 10.0	9.0	8.0	7.9 - 7.5	7.5 - 7.0	6.9 - 6.5	6.4 - 6.0	5.9 - 5.5	5.4 - 5.0	4.9 - 3.0
Area of Evaluation									
Site Analysis and Documentation	Exceptional understanding of analyzing and understanding site context.	Outstanding understanding of analyzing and understanding site context.	Excellent understanding of analyzing and understanding site context.	Sophisticated understanding of analyzing and understanding site context.	Very good understanding of analyzing and understanding site context.	Good understanding of analyzing and understanding site context.	Fair understanding of analyzing and understanding site context.	Satisfactory understanding of analyzing and understanding site context.	Poor understanding of analyzing and understanding site context.
Program development and Ideas	Exceptional program development and ideas.	Outstanding program development and ideas.	Excellent program development and ideas.	Excellent program development and ideas.	Very Good program development and ideas.	Good program development and ideas.	Fair program development and ideas.	Satisfactory program development and ideas.	Poor program development and ideas.
Conceptual Diagram and Design Development	Exceptional skill displayed for developing conceptual diagrams and design iterations.	Outstanding skill displayed for developing conceptual diagrams and design iterations.	Excellent skill displayed for developing conceptual diagrams and design iterations.	Sophisticated skill displayed for developing conceptual diagrams and design iterations.	Very good skill displayed for developing conceptual diagrams and design iterations.	Good skill displayed for developing conceptual diagrams and design iterations.	Fair skill displayed for developing conceptual diagrams and design iterations.	Satisfactory skill displayed for developing conceptual diagrams and design iterations.	Poor skill displayed for developing conceptual diagrams and design iterations.
Technical and Structural Resolution	Exceptional understanding of analyzing, understanding and resolving technical and structural elements of design project.	Outstanding understanding of analyzing, understanding and resolving technical and structural elements of design project.	Excellent understanding of analyzing, understanding and resolving technical and structural elements of design project.	Sophisticated understanding of analyzing, understanding and resolving technical and structural elements of design project.	Very good understanding of analyzing, understanding and resolving technical and structural elements of design project.	Good understanding of analyzing, understanding and resolving technical and structural elements of design project.	Fair understanding of analyzing, understanding and resolving technical and structural elements of design project.	Satisfactory understanding of analyzing, understanding and resolving technical and structural elements of design project.	Poor understanding of analyzing, understanding and resolving technical and structural elements of design project.
Representation Technique and final submission	All the architecture representation skills have been exceptionally employed with great rigor, precision and neatness. The presentation is self-explanatory and shows an	Most of the architecture representation skills have been exceptionally employed with great rigor, precision and neatness. The presentation is self-explanatory and shows an	Most of the architecture representation skills have been employed with great rigor, precision and neatness. The presentation is self-explanatory and shows an excellent level of skill in arranging and organization	Most of the architecture representation skills have been employed with great rigor, precision and neatness. The presentation is self-explanatory and shows an	Most of the architecture representation skills have been employed with great rigor, precision and neatness. The presentation is self-explanatory and shows a very good level of skill in arranging and organization	Not all of the architecture representation skills have been employed with rigor, precision and satisfactory neatness. The presentation shows a good level of skill in arranging and organization of	Not all of the architecture representation skills have been employed with rigor, precision and satisfactory neatness. The presentation shows a fair level of skill in arranging and	Not all of the architecture representation skills have been employed with rigor, precision and satisfactory neatness. The presentation is not self-explanatory and requires to achieve a satisfactory level	Most of the criteria have not been employed. Lack rigor, precision and neatness. The presentation lacks clarity and shows poor level of skill in arranging and organization of

	exceptional level of skill in arranging and organization of a design project..	outstanding level of skill in arranging and organization of a design project..	of a design project..	level of skill in arranging and organization of a design project.	of a design project..	a design project.	organization a design project.	of skill in arranging and organization of a design project..	a design project.
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COPO Mapping Setup for Sem .....

CO-PO mapping									
Sr. No.	CO description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Develop analytical skills and apply design strategies to create a socially and ecologically responsive architecture.	3	3	2	2	0	2	2	2
CO2	Ability to respond to site characteristics, including urban context and developmental patterns, historical fabric, soil, topography, ecology, climate, and building orientation, in the development and resolution of the architecture.	3	3	3	2	1	3	3	3
CO3	Understand and develop tectonic and structural resolution. Learn to combine the systematic/methodological learning from various stages of study and analysis in the design process towards culmination of an informed design.	2	2	3	2	0	3	3	3
CO4	Develop graphical representation and presentation skills to explain architecture design proposal.	1	1	1	1	0	1	1	3

1 – Slight (Low) Correlation      2- Moderate (Medium) Correlation      3- Substantial (high) Correlation  
 0 – No Correlation

