



Sinhgad Institutes

Sinhgad Technical Education Society's
Smt. KashibaiNavale College of Architecture
Bachelor of Architecture

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COURSE OUTCOME FOR B. ARCH 2019 PATTERN

Course objectives as mentioned in syllabus of 2019 pattern are referred.

FIRST YEAR B.ARCH – SEM 1			
Sr.No	Subject Name	Course Code	Course Outcome
1	Basic Design	1201901 (SS)	Basic design is a fundamental subject to understand design elements and principles. Students should understand these basic principles right from the primary aspects till the complex formulations.
			The student will learn to inculcate design thinking ability among students by creating observation based, creativity inspiring exercises.
			Students will be sensitized by introducing design theories which are environmentally conscious, user centric for better understanding of design application.
2	Building Construction and Materials I	1201902(Theory) 1201903 (SV)	Students will develop a fundamental understanding of basic building elements, their function and behavior under various conditions & the relationship of materials to construction systems, techniques, and methodology with specific reference to load bearing construction.

			Students will study the principles of designing components of load bearing structures – foundation, plinth, wall, openings etc. with study of materials suitable for load bearing construction.
3	Theory of Structures I	1201904 (Theory)	The Student should understand the basic theories of Applied Mechanics and their significance.
			The student should understand Different Systems of Forces and their Equilibrium.
			The student should understand the behaviour of elements like walls, beams and columns subjected to tension, compression, shear and bending.
4	Architectural Drawing and Graphics I	1201905 (SS)	Demonstrate an understanding of basic form & develop perception, the ability to think graphically and utilize drawing as a language of communication.
			Learn the architectural rendering techniques by using pen & ink, color, values, tones, etc.
			Learn drafting, lettering
5	History of Architecture and Culture I	1201906 V(SS)	Students understood architecture considering settlements, landscapes, and buildings as a cultural product shaped by various factors.
			Students will derive knowledge of the formal, structural, and stylistic aspects of architectural development.

6	Communication Skills	1201907 (SS)	Student should be able to communicate fluently in English language.
			Student should be able to use the tools of communication such as verbal, non-verbal, and graphical skills for effective communication through various mediums.
7	Workshop 1	1201908 (SS)	Students will learn the Significance of Model making in Architecture in exploring and representing Massing, form of buildings and spaces
			Students will learn basic model making techniques and materials and their relationship.

FIRST YEAR B.ARCH – SEM 2

Sr.No	Subject Name	Course Code	Course Outcome
1	Architectural Design II	1201909 (SV)	Students, after understanding the basic design principles will learn about design and its process stepwise from micro to macro level.
			Students will learn standards-based design aspects such as anthropometry, climate, form, function, structure and material.
			Experiential, spatial understanding of students will be improved through multisensory space exploration of case studies of particular space.

			To comprehensively understand the role of socio cultural and geographical factors in shaping of rural settlements and architecture.
2	Building Construction and Materials II	1201910(Theory) 1201911(SV)	Students will develop a fundamental understanding of basic building elements, their function and behaviour under various conditions with specific reference to Timber construction.
			Students will study the principles of designing, components of Timber Structure – Floor, Roofs Door, Windows.
			Students will expand a basic knowledge about earthquakes, understanding of properties, construction techniques of timber with specific reference to use of timber in superstructure (spanning, framing techniques).
3	Theory of Structures II	1201912 (Theory)	The student will understand the effect of various forces in terms of various stresses and deflection for various structural members like beams and columns.
			The student will understand working of trusses as lattice construction and structural actions in its members.
4	Architectural Drawing and Graphics II	1201913 (SS)	Student will be efficient in drawing, which is seen as a communication tool in the practice of architecture just like language.
			Student will familiarize with a

			range of techniques of expression beginning with manual drawing.
			Student will learn drafting, lettering, and rendering techniques.
			Student will learn visualisation and representation of various geometrical forms.
			Student will develop appropriate graphic skills and technical drawings which is helpful to explain the contents of a design.
5	History of Architecture and Culture II	1201914 (SS)	Students will understand architecture as a cultural product shaped by various factors.
			Students will derive knowledge of the formal, structural, and stylistic aspects of architectural development.
			Student will gain knowledge of Indian architecture of the twentieth century in the context of its historical precedents.
6	Fundamentals of Architecture	1201915 (SS)	Student will understand the field of architecture ,its scope and fundamentals of architecture as a discipline
			Student will gain knowledge of function, form, space and factors affecting architectural design.
			Student will have understanding on structural system and various building typologies.
7	Workshop II	1201916 (SS)	Student will understand the

			different tools and processes used to create architectural models.
			The students will be prepared to make their own architectural models of their ideas.
			Students will learn basics of Digital modelling with basic softwares like autocad and google sketchup.
SECOND YEAR B.ARCH – SEM 3			
Sr.No	Subject Name	Course Code	Course Outcome
1	Architectural Design II	2201917 (SV)	The student will learn from case, referral, live studies - process of observation, analysis,documentation and deriving inferences.
			The student will learn to address functional aspects of design (activity, use of space, adequacy, and efficiency of space for a particular activity, essential adjacencies of spaces, ease and efficiency of circulation, light,ventilation, user-space relationship, vertical connections)
2	Building Construction and Materials III	2201918(P) 2201919(SV)	Students will develop a basic understanding of the relationship of materials to construction systems, techniques and methodology with specific reference to reinforce cement concrete construction; an understanding of the concepts of concrete as a building construction material.
3	Theory of Structures IV	2201520 (P)	The student will understand the concepts of Fixity, Continuity and Torque.

			The student should be able to Design small spanned Wooden Beams
4	Computer Aided Drawing and Graphics	2201521(SS)	Students will be able to comprehend and express nuances of graphic language through various presentation techniques and methods learnt.
			Students will be able to communicate various ideas through architectural graphic representations (drafting and sketching).
5	History of Architecture and Culture III	2201922 (SS)	Students will understand architecture as a product shaped by various factors like religion and society.
			Students will understand the formal, structural, and stylistic aspects of architectural development.
			Students will understand the factors that bring about the processes of change in architectural manifestations and its meanings.
6	Building Services I	2201923 (P) 2201924 (SS)	Students will understand the Plumbing scope in the MEP services integration.
			Students will understand the following Plumbing Services in low, medium and high rise buildings and inculcate them the integration of services required in architectural design.
			-Systems for hot and cold water supply in a building

			premises
			-Systems for Sewage, Sullage, Storm water & and its disposal within or from building premises
7	Climatology	2201925 (SS)	Students will understand climate as a determinant of architectural design and it will help students to evolve climate responsive design.
			Students will understand sun movement, wind and confirm in building by using bioclimatic chart, site analysis matrix, sunpath.
			Students will understand how to incorporate passive strategies in their design.

SECOND YEAR B.ARCH – SEM 4

Sr.No	Subject Name	Course Code	Course Outcome
1	Architectural Design III	2201926 (SV)	The student will be able to represent the identification of core design aspect, formulation of design approach and development, and the final design outcome through architectural drawings along with a narrative and representative details of construction.
			The student will be able to address functional aspects of design (activity, use of space, adequacy and efficiency of space for a particular activity, essential adjacencies of spaces, ease and efficiency of circulation, light, ventilation, user-space relationship, vertical connections)
2	Building Construction and	2201927(P)	Students will develop an

	Materials IV	2201928(SV)	understanding about concrete and its variants and artificial materials such as glass and plastic and their application in construction.
			Students will be developing knowledge about the vertical transportation systems and their design and construction requirements.
3	Theory of Structures IV	2201929 (P)	The student will understand the mechanism of supporting Balconies and Staircases.
			The student will understand of how dividing Larger Rooms in Smaller One Way or Two Way Slab Units is done.
			The student will gain Understanding of Steel as a Material and Various Steel Sections and their use.
			The student will gain understanding of using Steel Girders and Stanchions
4	Environmental Science	2201930(SS)	<p>Students will learn Basic introduction to Multidisciplinary nature of environmental studies with focus on</p> <p>Natural Resources</p> <p>Eco Systems</p> <p>Biodiversity and its conservation</p> <p>Environmental Pollution</p> <p>Environment Legislation and Social aspects of environment</p> <p>Environment friendly buildings</p>
5	History of Architecture and Culture IV	2201931 (SS)	The student will gain an

			understanding of architecture as a product shaped by various factors like technological developments, colonization, globalization, economy, and urbanization.
			The student will gain an understanding of the formal, structural, and stylistic aspects of architectural development.
			The student will gain an understanding of contemporary architecture of the world with reference to historical precedents and responses to the same.
			The student will gain an understanding of the architecture of colonial and post-independence India.
6	Building Services II	2201932 (P) 2201933 (SS)	To introduce students to Building Services in low, medium and high-rise buildings and inculcate in them the understanding of integration of services in architectural design.
			The Building Services will include <ul style="list-style-type: none"> - Solid Waste Management - Lighting –Natural and - lighting - Artificial - Electrification
7	Site Survey and Analysis	2201934 (SS)	The students would be able to comprehend the site characteristics, reading and interpreting survey drawings, understanding equipment and methods of surveying leveling.

THIRD YEAR B.ARCH – SEM 5

Sr.No	Subject Name	Course Code	Course Outcome
1	Architectural Design IV	3201935 (SV)	Students will be able to design progressively complex spaces and buildings in terms of area, typology, function etc, with emphasis on scale and complexity of the project both.
			Students will be able to draw communicative architectural drawings that are of readable scales, preferably in: 1:200 (Site level drawings & Model) 1:100 (Cluster level drawings) Appropriate details to be explored at 1:50/20/10 etc. prepared.
			Students will understand campus Design with emphasis on site planning & relationship of built and open spaces, circulation and movement pattern, activity pattern, architectural character, image, identity, philosophy etc.
2	Building Construction and Materials V	3201936(P), 3201937(SV)	Students will learn the proprietary construction techniques for partition ceilings with the latest available materials.
3	Theory of Structures V	3201938(P)	Students will be able to understand doubly Reinforced Beams, T and L Beams and to adopt span to depth ratios for them
			Students will be able to understand the designing of columns across multiple floors changing grade and percentage

			of steel and grade of concrete
			Students will be able to understand how to increase M.R of girders and Load carrying capacity of Stanchions. To study alternative methods of spanning vis-à-vis Portal Frames
			Students will be able to understand lateral pressure and understand the proportioning and stability of a gravity retaining wall
4	Landscape Architecture	3201939(SS)	To understand the elements and principles of landscape design and role of landscape elements in design of outdoor environments on the site.
			To understand the Intent and content of designed landscapes.
			To develop understanding of site analysis and site planning and integrated design of open and built spaces
			Creating awareness about using Landscape design as a tool to address environmental concerns in Architecture.
5	Elective 1 (Contemporary Architecture)	3201940 (SS)	<p>The students will learn</p> <p>To analyse the contemporary trends/approaches in architectural production in terms of design, practices, its perception, appreciation and critical discourses. Application of the knowledge gained through the study of history of architecture to analyse</p>

			contemporary architecture
			To critically reflect and comment on contemporary architecture across the world. Development of individual view point and construction of an argument to put it across.
			Skill of orally presenting a topic of choice, and generating a discussion.
6	Building Services III	3201941 (P) 3201942 (SS)	Students will understand principles of working of natural ventilation, heating, cooling and HVAC systems, components, materials and provisions in architectural design.
			Students will understand the aesthetical and functional aspect of building services coordination in architectural design
7	Working Drawing I	3201943(SS)	Students learned about the concept of working drawings and their importance. Graphical presentation of all the components of a building along with dimensioning and annotations. Understand and apply IS Codes and internationally accepted norms / conventions / methods of repairing a working drawing along with tabulation of schedules of materials, finishes and hardware. In 1st semester load bearing structure has been given to understand basics of draftings, sectional details etc.
THIRD YEAR B.ARCH – SEM 6			
Sr.No	Subject Name	Course Code	Course Outcome

1	Architectural Design V	3201944(SV), 3201945(P)	Students improved understanding in terms of Socio-Cultural Aspects, Aesthetics, Anthropometry &Function,Climate, Building Material and Construction Technology, Building Services, Site, Universal Design concept in the process of designing.
			Students developed a design program from not only client or user's requirements but also in response to context specific factors like socio-economic, socio-cultural, environmental etc.
			Learned Integration of functions, structure and services in a building with relevant structural system and its resultant effect on visual form / character of building.
			Communicative architectural drawings that are of readable scales, preferably in: 1:200 (Site level drawings &Model) 1:100 (Cluster level drawings) Appropriate details to be explored at 1:50/20/10 etc. prepared.
2	Building Construction and Materials VI	3201946(SV)	Students will develop an understanding of the possibilities of steel as an important building construction material.
			Understanding the properties of ferrous and non ferrous metals as materials for buildings will able students to use Steel innovatively in building projects.

3	Theory of Structures VI	3201947(P)	To the study of effect of Lateral Pressure of Soil and Water for increasing heights.
			To Develop in Students the Feel for Structural Principles and their Relates to Building Design.
			To Develop in Students the Concept that "Every Structure is a System that Forms the Space" and the fact that Architecture and Structure cannot be conceived independently.
			To Develop in Students the fact that Structural Engineering is a Specialist Discipline and that the Architect has to appreciate the consultant's concern and make an informed choice about the most appropriate Structural System for his Building with Reasonable Understanding of its Economic and Operational Implications.
			To Develop in Students the Mathematical logic that would enable him to Design the Structural System for Ground +2 Storey R.C.C Structure and a medium span Factory Building in steel.
			To in-still in the Students a Confidence that they could develop and explore a Structural System of their own design and execute the same.

4	Research in Architecture I	3201948(SS)	<p>To introduce students to Research in Architecture and its value in design</p> <p>To enable the students to prepare a research proposal.</p>
5	Elective II	3201949 (SS)	<p>A subject of their interest and developed theoretical as well as practical understanding of the same but relevant to the field of architecture that developed as their expertise.</p> <p>To document their study through the field study report consisting measure drawings, photographic/video graphic mapping and surveys.</p> <p>To prepare proposals presenting solutions to number of social issues identified during analysis of their documentation and surveys report.</p>
6	Building Services IV	3201950 (P) 3201951 (SS)	<p>Students will understand properties of sound, strategies for reducing noise, aspects of treatments for good acoustical conditions to design any space acoustically sound.</p> <p>Students will learn how to make provisions for fire prevention, life safety and fire protection as per NBC 2016 so they can apply it in their design.</p>
7	Working Drawing II	3201952(SS)	<p>Students learned about working drawings & actual Design development and detailing of their own design to resolve the design idea to one which can be executed/constructed, exposing students</p>

			to construction parameters, limitations and sequencing. Generating a working drawing set for the chosen design/building with framed/composite construction including schedules of material, finishes, components and accessories Developing and drafting details of Civil work and furniture/interior design including schedule of finishes students got prepared for international standards.
FORTH YEAR B.ARCH – SEM 7			
Sr.No	Subject Name	Course Code	Course Outcome
1	Architectural Design VI	4201953 (SV)	Students should be able to design complex housing spaces and buildings in terms of area, user group, typology and functional aspects.
			Students should understand and analyse housing in urban areas focusing on aspects like density, climate, social structure, culture, architectural typology, construction technology, urban fabric, economy, services, traffic movement and any other issue which needs to be considered for envisaging a design project in totality.
			Students should develop a building design program not only from client's or user's requirements but also in response to context specific factors like socio-economic structure, cultural aspects and environmental sustainability.

			Students should be able to develop a design philosophy/narrative as a thought process in their design.
			Students should be able to design the buildings within the housing projects/ neighbourhoods giving due consideration to built form and open spaces, elements of landscape, pedestrian and vehicular movement.
			Students should be able to analyse and understand the relationship between various built typologies, their combinations, clustering, and resultant design incorporating privacy, socio-cultural needs, built-form configuration, structural/ service efficiency, density, topography and climate.
			To design buildings integrating functions, structural system and services and understand its resultant effect on visual form / architectural character of building.
			To understand various issues and aspects of sustainability, earthquake resistant construction, universal accessibility and understand how these may be integrated in the architectural design process.
			To apply relevant legislative

			provisions (Building byelaws, GDCR, CRZ, EPA, ECBC, GRIHA etc.) to the design project.
2	Advance Building Construction and Services I	4201554 (SV)	Students learned about advanced structural systems, materials and services required in buildings with complex and special requirements and enable the students to integrate the same in Architectural design, this includes swimming pools, multi basements , industrial building or shades, so various complex structural systems as well as services students went through.
3	Urban Studies I	4201955(SS)	<p>Students Developed following outcomes</p> <ol style="list-style-type: none"> 1. Basic understanding of Urban Planning, Urban Design its principles and applications 2. Urban Housing, issues related to housing and subdivisions of plots 3. Strategies to resolve the various Urban Housing issues.
4	Research in Architecture II	4201956(SS)	To enable students to carry out research focused on an issue related to the built environment
			To prepare students to write a technical research paper.
			To train students to present their research paper in front of an audience.
5	Elective III	4201970(SS)	Students should be able to understand the relationship between art and architecture. film is a very new medium of

			expression compared to other art forms and it has a very significant role in world art moment.
			To understand Architecture comes as a backdrop or sometimes becomes an important character of the film. And that is the purpose of studying this subject. To understand art, film, world politics, socio economic conditions and architecture.
6	Quantity Surveying and Specification Writing I	4201958 (Theory)	The students should be able to take dimensions from drawings and calculate quantities of various items of work for load bearing as well as framed structure.
			The students should be able to prepare Abstract sheet.
7	Professional Practice	4201959 (Theory)	Students will be able to understand the role & stature of the Architect in the society and understand duties, liabilities, responsibilities & ethics as a professional.
			To understand the scope & avenues of Professional Architectural services and the demands & mode of the Professional Practice field.
			Students will get get adequate knowledge of an Architect's office administration, documentation, banking, taxation & other procedures of office along with the Laws

			applicable to Architects.
			Students will help to understand rules and regulations of Council of Architecture, Architect's Act, Architectural competitions & other allied professional organisations.
FORTH YEAR B.ARCH – SEM 8			
Sr.No	Subject Name	Course Code	Course Outcome
1	Architectural Design VII	4201960(SV)	Students should be able to design complex Urban spaces and buildings (excluding housing) in terms of area, user group, typology and functional aspects.
			Students should understand and analyse urban areas focusing on aspects like density, climate, social structure, culture, architectural typology, construction technology, urban fabric, economy, services, traffic movement and any other issue which needs to be considered for envisaging a design project in totality.
			Students should develop a building design program not only from client's or user's requirements but also in response to context specific factors like socio-economic structure, cultural aspects and environmental sustainability.
			Students should be able to develop a design philosophy/narrative as a

			thought process in their design.
			Students should be able to analyse activities around the buildings within a complex/ campus and understand the same in context of the built form and open spaces, elements of landscape, pedestrian and vehicular movement, their segregation, managing sloping sites and contours.
			analyse and understand the relationship between multiple (existing and/or proposed) buildings to establish continuity of form, construction, materials, climate and design theme.
			To design buildings integrating functions, structural system, and services and their resultant effect on visual form / architectural character of building.
			To understand various issues and aspects of sustainability, earthquake resistant construction, universal accessibility and understand how these may be integrated in the architectural design process.
			To apply relevant legislative provisions (Building byelaws, GDCR, CRZ, EPA, ECBC, GRIHA etc.) to the design project.
2	Advance Building	4201961 (SV)	As part of the second semester

	Construction and Services II		more advanced structural systems, materials and services are required in buildings with complex and very specific requirements. Students should be able to comprehend the special requirements of high rise or multi storied and modern buildings and be able to integrate the same in design. Considering the maximum out put there was options in unit 03 so that students can give more attention to multiplex and auditorium design and its detailed drawings with services.
3	Urban Studies II	4201962(SS)	<p>Students Developed following outcomes</p> <ol style="list-style-type: none"> 1. Basic understanding of Urban Planning, Urban Design legislations, planning processes. 2. Understanding of urban economics and urban transportation issues
4	Elective IV	4201963 (SS)	<ol style="list-style-type: none"> 1. To introduce the students to Environmental Design and its scope. 2. To understand the different aspects of the subject. 3. To understand the world wide categories of climate and its impact . 4. To develop understanding of climate change and its impact. 5. Creating awareness

			about biodiversity and giving design to maintain the ecosystem.
5	Elective V	4201964 (SS)	<p>Students Developed following understanding &outcomes</p> <ol style="list-style-type: none"> 1. BIM - Building Information Modelling as one of the tools of Industry 4.0 Technology 2. Industry 4.0 and its evolution stages from I 1.0 to I 4.0 3. Green jobs and Brown Jobs in the context of Industry 4.0
6	Quantity Surveying and Specification Writing II	4201965 (Theory)	<p><i>The students should be able to work out quantities of materials required for different items of work.</i></p> <p><i>2) The students should be able to working out quantities of various items of work for an Industrial structure.</i></p>
7	Project Management	4201966 (Theory)	<p>Student will be exposed to basic key concepts of Project Management and its importance in managing Project.</p> <p>2.The student should be competent enough to handle and manage a small-scale project from conceptualization to completion (hand over).</p> <p>3.Subject knowledge gain may help few of the students to</p>

			pursue master's education in the field of Project Management.
FIFTH YEAR B.ARCH – SEM 9			
Sr.No	Subject Name	Course Code	Course Outcome
1	Practical Training	5201967 (SV)	<p>The aim of the 'Practical Training' is to enable the students to gain the kind and range of practical experience which will prepare them for their likely responsibilities, immediately after qualifying B. Arch.</p> <p>Students are supervised by an employment mentor as they discover the many aspects of this fascinating profession, and experience at first hand- the design and construction processes.</p> <p>After completing the training under the guidance of experts / professionals students will be able to:</p> <ul style="list-style-type: none"> • Understand Architectural Profession as a whole. • Understand project procurement until its execution • Learn Different aspects about Project management, construction management. • Understand the work environment, professional ethics. • Get adapted with the legalities associated with professional

			<p>practice.</p> <ul style="list-style-type: none"> • Prepare herself /himself for their professional pursuits as an architect.
FIFTH YEAR B.ARCH – SEM 10			
Sr.No	Subject Name	Course Code	Course Outcome
1	Architectural Design IX	5201968 (SV)	<p>To provide an opportunity to the students to apply the knowledge and skills gained in earlier years to a full-fledged Architectural Design project of student's choice with a holistic approach including background research, programme formulation, site selection investigations and design demonstration.</p> <p>The Architectural Design Project shall consist of Design Demonstration i.e. formulation of design programme, site investigation and selection, and culmination in architectural design proposal.</p> <p>SUGGESTED CATEGORISATIONS OF THE TOPICS ARE AS UNDER:</p> <p>a) Institutional Buildings</p> <p> Infrastructural Buildings</p> <p> Work places</p> <p>Commerce and Trade buildings</p> <p> Habitats</p> <p> Healthcare</p>

			<p>Hospitality</p> <p>Religious Buildings</p> <p>Recreational Buildings</p> <p>Industrial Buildings</p> <p>Cultural Buildings</p> <p>Urban Design project / Urban Design Insertions of suitablescale</p> <p>) Conservation including Rejuvenation, Revitalisation of suitable scale.</p> <p>The students may link the topic of the thesis to earlier explorations through Research in Architecture done in previous years or explore new concern as per his/her choice.</p> <p>The scale of the project must do justice to the depth of involvement, (e.g., in case of very small projects in-depth design demonstration is expected).</p>
2	Entrepreneurship Development	5201969 (SS)	<p>Upon completion of the course students will develop a spirit of entrepreneurship as a budding architects, and get empowered and encouraged as “Archipreneurs”.</p> <p>They will be equipped with Various professional pursuits to apply after graduation.</p> <p>Students will be able to explore</p>

			new vistas of entrepreneurship in the 21st century environment to generate innovative business ideas.
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