



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

S.No. 10/ Part, Ambegaon (Bk), Pune 411041
Tel no. 020-24100000 Ext- 876 Email – skncoa@sinhgad.edu

FIVE YEAR DEGREE COURSE IN ARCHITECTURE [B.ARCH.]
2015 Pattern

Programme Educational Objectives (PEO)

1. **Theoretical Base** – To establish strong theoretical base and understanding of Architecture and work of an architect.
2. **Knowledge and Skills** – To inculcate design sensitivity and ability, as well as knowledge in the domains of humanities, technology & art and impart skills so as to equip the graduate student to undertake work of an architect.
3. **Values** – Sensitize the students to the universal values of equity, environmental care, accessibility, and respect for heritage and equip them to address these through design.
4. **Research** – Train the students to methodically research an issue or a situation to find a creative solution to meet the contextual challenges in the realm of changing technologies, socio economic and cultural changes.
5. **Practice and Ethics** – To enable the students to practice as architects and imbibe them with the knowledge of the professional practice and ethics.
6. **Changes and Diversification** – To expose the students to the changes in architectural practice, diversifications and evolving role of an architect.

Programme Outcomes (PO)

1. **Knowledge** - Understanding about role of various knowledge domains such as humanities, technology, and environment in design of built environment.
2. **Principles & Theory** - Knowledge of principles of architecture & theoretical knowledge and its application in design.
3. **Creativity** - Creative and design thinking ability.
4. **Practice** - Ability to understand real life situation of Architectural Practice and to work with ethical and professional responsibilities.
5. **Collaborative Working** - Ability to communicate effectively and work in interdisciplinary groups.
6. **Inclusivity** - Sensitivity in design for inclusivity, equity, environment, diverse cultures, and heritage.
7. **Technological Knowhow** - Ability to review, comprehend and report technological developments in the profession of architecture and construction.
8. **Ability to choose Area of Specialisation or Practise** - Able to judge one's area of interest and accordingly choose the field of practice.



Sinhgad Institutes

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COURSE OUTCOME FOR B. ARCH 2015 PATTERN

Course objectives as mentioned in syllabus of 2015 pattern are referred.

FIRST YEAR B.ARCH – SEM 1			
Sr.No	Subject Name	Course Code	Course Outcome
1	Design 1	1201501	To enable students to relate the fundamentals and principles of basic designs to architectural design.
			To enable students to analyse the various fundamentals, principles of basic design and spatial relationships.
			The students should create their own designs demonstrating their learnings in understanding and applications of basic design fundamentals and principles to spatial design.
2	Building Technology and Materials 1	1201502(SV) 1201503(PP)	The student should be able to identify all the basic building elements, their function and behavior under various conditions with specific reference to load bearing construction.
			The student should be able to understand the basic principles of construction and materials suitable for load bearing construction.
			The student should be able to develop and understand the analytical and logical sequence in thinking about structural aspects of

			architecture.
3	Theory of Structures I	1201504	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	1201505	The student will learn about the architectural drawing techniques and the language of graphics, its vocabulary and grammar such as scale, annotations, labelling and dimensioning.
			The students will be able to construct simple 3D objects and building components by making use of various drawing techniques
			The student will learn about the various techniques of sketching for recording, studying and communicating objects, buildings and building components.
			The student will be equipped to produce his own set of architectural drawings to explain his design.
5	Humanities	1201506	The student will learn the role of studying humanities and human settlements in architecture.
6	Introduction to Architecture	1201507	The student will understand wide expanse of the field of Architecture, its scope, and fundamentals.
7	Workshop 1	1201508	The student will learn about the working of various

			materials and techniques used in making Architectural models.
			The student will be equipped to prepare their own architectural models representing their designs.
FIRST YEAR B.ARCH – SEM 2			
Sr.No	Subject Name	Course Code	Course Outcome
1	Design II	1201509	To introduce students to iterative design process and various channels of creativity
2	Building Technology and Materials II	1201510(SV) 1201511(PP)	Students will understand the basic building elements, their function and behaviour under various conditions with specific reference to timber construction.
			Students will develop a clear understanding of the basic principles of construction and materials suitable for load bearing construction.
			Students will develop an analytical and logical sequence in thinking about structural aspects of architecture.
3	Theory of Structures II	1201512	The student should understand the effect of various forces in terms of various stresses and deflection for various structural members like beams and columns.
			The student should understanding of trusses as lattice construction and structural actions in its members.
4	Architectural Drawing and Graphics II	1201513	Understanding and drawing composite and complicated 3D things created by the interpenetrating or adding of several items in different

			planes. various three-dimensional objects' surfaces being developed. orthographic projections of sectional planes' actual forms.
			A measured drawing of a straightforward two-story structure with a stair and/or bathroom is drawn to scale and includes plans, sections, elevations, and isometric and axonometric views
			Basics of computer-aided drawing are introduced, including the necessary drawing, modification, text, and annotation (dimension) instructions to create basic geometric shapes
5	History of Architecture I	1201514	Student studied architectural development with reference to time, space and people.
			Project based assignments conducted to study various civilizations.
			Learning of Linkages between architecture and the socio-cultural, political, geographical, and economic context with respect to the ancient civilisations.
6	Climatology	1201515	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.

7	Workshop II	1201516	To introduce computer aided 3D modelling softwares.
			Enabling Students to make Architectural models for study and presentation.
SECOND YEAR B.ARCH – SEM 3			
Sr.No	Subject Name	Course Code	Course Outcome
1	Design III	2201517	The student should be able to understand architectural design as a process .
2	Building Technology and Materials III	2201518(SV) 2201519(PP)	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 III	2201520	The student should understand the concepts of Fixity, Continuity and Torque.
			The student should able to dividing Larger Rooms in Smaller One Way or Two Way Slab Units
			The student should Understanding of Steel as a Material and Various Steel Sections and their use.
			The student should able to design Steel Girders and Stanchions.
4	Building Services I	2201521(SS) 2201522(PP)	To introduce students to following Building Services in low, medium and high rise buildings and inculcate in them the integration of services in architectural

			design.
			Commonly used systems for Sewage, Sullage & and Garbage disposal
			Systems for hot and cold water supply in a building premises.
5	History of Architecture II	2201523	To introduce students to architectural development with reference to time, space and people.
6	Architectural Drawing and Graphics III	2201524	Students will able to communicate an architectural idea / proposal in a legible and effective manner through graphical language.
			Students will gain knowledge about perspective projections, use of shades and shadows, and various architectural presentation and rendering techniques.
			Students will able to generate simple architectural drawing using CAD
7	Surveying and Levelling	2201525	The students would be able to comprehend the site characteristics, reading and interpreting survey drawings, understanding equipment and methods of surveying leveling

SECOND YEAR B.ARCH – SEM 4

Sr.No	Subject Name	Course Code	Course Outcome
1	Design IV	2201526	<p>Students will learn the bellow mentioned objectives through design process.</p> <p>Building response to site and surrounding</p> <p>Design principles in planning</p> <p>Activities and zoning of campus</p> <p>Circulation:</p>

			vehicular/pedestrian Climatic responsive factors: Form of building Materials
2	Building Technology and Materials IV	2201527(SV) 2201528(PP)	Students will develop an 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 III	2201529	The student should be able to Design small spanned Wooden Beams
			The student should be able to Design Small Spanned R.C.C Structure w.r.t Slabs, Beams and Columns and use it for his B.C.M and W.D. subjects.
4	Building Services II	2201530(SS) 2201531(PP)	To introduce students to following Building Services in low, medium and high rise buildings and inculcate in them the integration of services in architectural design.
			Lighting and electrification.
			Introduction to rainwater harvesting and alternative energy sources.
5	History of Architecture III	2201532	To introduce students to architectural development with reference to time, space and people.
6	Technical Communication	2201533	Considering the professional course of architecture, students will develop their communication skills using various modes of communication such as

			graphical, textual, oral, listening, writing, etc.
			Students will focus on: Writing skills : Formal letter writing, job applications, preparing a resume, reporting an event, précise writing, comprehension in English.
			Oral skills : Group discussions, giving a speech, appearing for an interview.
			Presentation skills: Presenting using PowerPoint presentation, graphical modes (sketching, 3D views)
			Body language, appearance, gestures, voice modulation, speech organisation etc.
			Using various computer applications such as word processing, MS excel, photoshop etc.
7	Working Drawing I	2201534	Students prepare drawings of an architectural project and imbibe the significance of working drawings from the point of view of execution of the work on site and as important component of tender documents. In 1st semester load bearing structure with minimum size of 100 sqmt Ground floor to work on. Students get well understanding of load bearing principals and its limitations
THIRD YEAR B.ARCH – SEM 5			

Sr.No	Subject Name	Course Code	Course Outcome
1	Design V	3201535	Learning Design of a campus that consists of multiple buildings and changes over time in response to the land, its features, and the immediate environment or context.
			Understanding the design process in a different socio geographic context with various design parameters in built-unbuilt spatial relationship including services and suitable structural systems.
			Detail study of creating and design of open spaces with in the campus involving holistic design approach.
2	Building Technology and Materials V	3201537(SV), 3201536(PP)	Students should understand various types of Reinforced Cement Concrete Flooring Systems for medium spans like Flat plate, Flat slab, Ribbed slab, Waffle slab, Band beam and slab, prestressed slab
			Students should understand Construction systems used for long span construction. <ul style="list-style-type: none"> • Section/bulk active systems • Vector active systems • Surface active systems • Form active systems

			This semester the focus is also on interior systems, partitions, false ceiling, furniture details and material study of wood and wood derivatives. So students are supposed to understand these systems in detail.
3	Theory of Structures V	3201538(PP)	
4	Landscape Architecture I	3201539(SS)	To introduce the students to Landscape Architecture and its scope.
			To understand the elements and principles of landscape design and role of landscape elements in design of outdoor environments on the site.
			To introduce the students to various traditions in designed and vernacular 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	Building Services III	3201540 (SS) 3201541(PP)	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
6	History of Architecture IV	3201542 (SS)	Students will understand the evolution of building characteristics and different styles of architecture in different eras from industrial revolution to architecture in India.

			Students will understand the salient socio- political, cultural, economic and technological markers of the nineteenth and twentieth centuries.
7	Working Drawing II	3201543(SS)	Students are expect to Design Development and detailing and its relevance in converting 'concept design' to working drawing and hence the realization of design on site. • To imbibe further the importance of working drawings as an essential tool for effective site execution and execution of a building contract. • To expose to the standard methods, conventions, drawing annotations including International standards, IS codes, its application in working drawing set with material and component and schedules.
THIRD YEAR B.ARCH – SEM 6			
Sr.No	Subject Name	Course Code	Course Outcome
1	Design VI	3201544(SV), 3201545(PP)	Students learnt designing Buildings by stacking multiple functions vertically, taking into account issues such as coordinating building services, vertical circulation, underground parking, and structural grids, and introducing disaster management design ideas and methodologies.
			Introduced exposure to the idea of accessible or universal design.
			The design communicated

			through architectural graphics, two and three-dimensional sketches, models and narratives.
2	Building Technology and Materials VI	3201546(PP), 3201547(SV)	Students should understand various types of Reinforced Cement Concrete Flooring Systems for medium spans. a) Flat plate, Flat slab, Ribbed slab, Waffle slab, Band beam and slab. b) Pre-stressed slabs.
3	Theory of Structures VI	3201548(PP)	
4	Landscape Architecture II	3201549(SS)	To study the use of Landscape design as a tool to address environmental concerns in Architecture.
			Application of site planning principles in integrated design of open and built spaces.
			To study the work of Master Landscape Architects and their contribution to the built environment.
5	Building Services IV	3201550 (SS) 3201551(PP)	To understand building services as integral part of comprehensive architectural design
			To obtain knowledge for fire safety measures and aspects of good acoustics and treatment in comprehensive architectural design
6	Contemporary Architecture Seminar	3201552 (SS)	Students learnt to establish a critical and comprehensive viewpoint about the contemporary Trends/approaches in architectural production in terms of design, practices, its perception, appreciation, and

			critical discourses.
			To critically reflect and comment on contemporary architecture across the world. Development of individual viewpoint and construction of an argument to put it across.
			Skill of orally presenting identified issues, ability to take position and development of an architectural argument and generate a discussion.
7	Interior Design I	3201553(SS)	<p>The students learned</p> <ul style="list-style-type: none"> To comprehend the relationship between Architecture and Interior Design as a Space making discipline.
			About thoughtful design of interior spaces & how it can increase efficiency and add depth and meaning to the built environment.
			To comprehend the connection that the subject of Interior design has with other Design Disciplines like Conservation, Preservation, Restoration, Sustainability, Art, Product design and Graphic design.
			Various aspects of the subject including basic principles, case studies, application in

			building projects etc
			To prepare proposals presenting designing solutions to the identified spaces following the process and sequence of executing the project.
FORTH YEAR B.ARCH – SEM 7			
Sr.No	Subject Name	Course Code	Course Outcome
1	Design VII	4201554 (SV)	Subject aims at preparing the students to handle complex architectural issues addressing various challenges in terms of scale, complexity of functions, social economic context, traffic and vehicular movement.
			Along with the challenges of physical issues, students are also expected to address spatial and visual language of their project with reference to the urban context and setting of their site.
			Students should be able to design Multifamily Residential Development with Focus on : Mixed Use Development, Development of Communities, Addressing Issues of Social Stratification v/s Inclusiveness, Identification of target Group/ End User's requirement, Relation of Location/ Land values on Defining the Housing Project, Project being part of the City, Context, Green Initiatives and Efficient Planning of Services.
			Students should be able to design a Housing project for Minimum 100 to 200 units

			depending on Context and Complexity within parameters as laid out by Local Authority and NBC.
			One Esquee / Charette to be undertaken in each of the Terms (One week Duration) exploring design solution for a project / component , ideas for which would help the Main Design project
2	Advance Building Technology and Services I	4201555 (SV)	Students will understand the importance of advanced structural systems, materials and services required in buildings with complex and special requirements and enable the students to integrate the same in design. There are multi basements and other long span building construction systems that will help to students to study larger scale structures with MEP.
3	Professional Practice I	4201556(PP)	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 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, and utility during his professional training in the field in Semester IX.
4	Urban Studies I	4201557 (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.
5	Research in Architecture 1	4201558 (SS)	<ul style="list-style-type: none"> • To introduce students to Research in Architecture and its value in design • To enable the students to prepare a research proposal.
6	Quantity Surveying and Estimation I	4201559 (PP)	<p>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.</p> <p>The students should be able to prepare Abstract sheet.</p>

7	Specification Writing I	4201560 (PP)	<p>To acquaint students with methodology of writing specifications with reference to building, trades, materials, workmanship & performance of different items of work.</p> <p>To know importance of specifications in contract document for any construction project.</p>
8	Elective II – Design and Technology	4201561(SS)	

FORTH YEAR B.ARCH – SEM 8

Sr.No	Subject Name	Course Code	Course Outcome
1	Design VIII	4201562(SV)	<p>Study of Urban Areas in terms of Urban level issues like Mobility, movement network, Built form disposition, character, identity, activities, open space networks, walkability, inclusiveness, Community participation initiatives and analysis.</p>
			<p>Students should be able to Identify issues related to above aspects at Neighbourhood level and offer design solutions for improving the status of the neighbourhood with reference to the above aspects.</p>
			<p>Students should attempt at Setting up of Guidelines to achieve the master plan objectives and broad implementation strategy to achieve sustainable neighbourhoods.</p>

			Students should attempt at Setting up of Guidelines to achieve the master plan objectives and broad implementation strategy to achieve sustainable neighbourhoods.
			The project shall include a Study area and Master Plan area of 2- 3 Ha. with detailed Architectural Resolution of a component/s admeasuring not less than 10000 to 20000 sqm area of Functional space.
			The Architectural project should evolve from the study of the Area and be an outcome of issue formulation, Development Plan proposals for the area if any and a subset of the overall Master Plan for the Area.
2	Advance Building Technology and Services II	4201563 (SV)	Second semester is expected with more complex work on auditorium with all specifications, architectural details, high rise structures with their analysis and case studies with materials and services required in buildings with complex and special requirements and enable the students to integrate the same in design.
3	Professional Practice II	4201564 (PP)	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 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 organizations and utility during his professional training in the field in Semester IX
4	Urban Studies II	4201565 (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
5	Research in Architecture II	4201566 (SS)	<p>To enable students to undertake research focussed on an issue related to the built environment.</p> <p>To report research in a technical manner.</p>

			Students shall be able to write a research paper in proper technical manner.
6	Quantity Surveying and Estimation II	4201567 (PP)	The students should be able to work out quantities of materials required for different items of work.
			The students should be able to be working out quantities of various items of work for an Industrial structure.
			The students should be able to working out quantities for items of plumbing and sanitation work in a structure.
7	Specification Writing II	4201568 (PP)	To acquaint students with methodology of writing specifications with reference to serviceinstallations of different items of work in construction.
			To know importance of specifications in contract document for any construction project.
8	Elective III – Allied elective	4201569 (SS)	<p>Students Developed following outcomes.</p> <ol style="list-style-type: none"> 1. Opted for specific subjects of choice. 2. Understood larger possible scope of work in the selected subject. 3. Developed understanding of linkage of selected areas of subject and its relation to architecture.
FIFTH YEAR B.ARCH – SEM 9			

Sr.No	Subject Name	Course Code	Course Outcome
1	Practical Training	5201570 (SV)	<p>After completing the training under the guidance of experts / professional's 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 practice. • 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	Elective IV	5201572 (SS)	To allow students to study a particular subject their liking in greater detail but in the larger context and to give students an opportunity to develop their skills in a subject they may opt to make their career in future.
			To introduce students to "Management Concepts" since they are to manage projects right from design stage through the documentation and construction stage.

			<p>To make students aware of the fact that the Architectural Practice is a team effort and understanding the necessity of management in this field.</p>
			<p>The probable management elective topics are as follows:</p> <ul style="list-style-type: none"> _ Project Management _ Construction Management _ Environment and Energy management _ Architectural Design Management
2	Architectural Design Project	5201571 (SV)	<p>To provide an opportunity to the students to apply the knowledge gained in earlier years to 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>