Crafting Dimensions that Speak the Language of the New Millennium
SINHGAD TECHNICAL EDUCATION SOCIETY'S
SINHGAD COLLEGE OF ARCHITECTURE
(Affiliated to University of Pune & Approved by AICTE& COA) (ID No. PU/PN/Engg./151/2000)
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Founder President	Founder Secretary	Principal

M. ARCH. COMPUTER APPLICATION
Program Outcome (PO) defined by institution

At the end of a program, students should be able to do

PO 1. **Architectural Knowledge:** Work professionally toward synthetic architectural design solutions that incorporate requirements of users, contextual and environmental connections, technological systems with sensible and responsible approach to environmental, historical, and cultural commitments.

PO 2. **Professional Competence:** Work with established professional standards and analyze various subjects related to architectural and allied fields

PO 3. **Technological Knowhow:** Apply appropriate technology required through design research

PO 4. **Commitment to the society:** Crafting sensible and responsible architects for future

PO 5. **Sustainable Approach:** Understand the real-life situation in architectural practice and its impact on environment and sustainable factors

PO 6. **Architectural Ethics:** Work with ethical responsibilities and analyze critically by conducting research

PO 7. **Collaborative work culture:** Work in collaboration in architectural profession for designing and execution, as well as develop interpersonal and leadership skills

PO 8. **Communication skills:** Apply effective communication skills using advanced tools in producing professional quality graphic presentations and technical drawings/documents

Program Specific Outcome (PSO) defined by institution

PSO 1 Investigating Computational tools for computer modelling, simulation, analysis, Logic building, Coding, Presentation, GIS and parametric thinking process in Architectural Design.

PSO 2. Broadly understand the established and ongoing developments and research work in the domain Smart materials, Self-assembly, Advanced construction, Parametric design and specially in new emerging technologies.

PSO 3. Understanding of different digital design theories in Architecture and its application at various scales of Design.

PSO 4. Emergent Technologies in Robotics, Hardware Prototyping, Artificial Intelligence, Machine Learning, A.R, V.R)

PSO 5. Exposure to the practical work of digital fabrication and latest technologies in fabrication. Understanding various approval processes, code of conduct

SINHGAD COLLEGE OF ARCHITECTURE	
COURSE OUTCOMES – SECOND YEAR - TERM I	
students at the end of the semester will be able to …	
1	**FIRST YEAR M.ARCH.-TERM-I- DIGITAL DESIGN STUDIO - I (2019CA101)**
CO1	Introduction of the first project
CO2	Using Parametric tools on the given project
CO3	Presentation of the project
CO4	Introduction of the second project
CO5	Parametric design project
2	**FIRST YEAR M.ARCH.-TERM-I - ELECTIVE - I (2019CA102)**
CO1	To Paraphrase,do for colloquium format. Research on potential topics through books, magazines, internet and other sources.
CO2	To select of the topic and colloquium on the literature.
CO3	To do Analytical presentation - Colloquium presentation based on the selected topic with the understanding of analytical reading**.**
CO4	Drawing inferences - Reading and analysis of the topic and drawing inferences based on the focus of the study.
CO5	To Write Book reviews with own understanding and views.
CO6	Concluding - To write own conclusions, generate research questions,with technical understanding of writing
3	**FIRST YEAR M.ARCH.-TERM-I - DIGITAL TOOLS &TECHNIQUES - I (2019CA103)**
CO1	To introduce rhino NURBS modelling software
CO2	To gain understanding of basic rhino modelling
CO3	To introduce grasshopper parametric modelling software
CO4	To introduce Digital Presentation skills in Photoshop, Illustrator
CO5	To introduce examples of A.I / A.R / V.R any emergent software
4	**FIRST YEAR M.ARCH.-TERM-I - DIGITAL THEORY - I (2019CA104)**
CO1	To Introduce Digital Design Theory
CO2	To understand Concepts in Critical Theory
CO3	To understand Digital culture
CO4	To understand Curvilinearity in architecture
CO5	To understand theory of Architecture and science
CO6	To understand theory of Architecture and cybernetics
5	**FIRST YEAR M.ARCH.-TERM-I - AUTOMATION DESIGN - I (2019CA105)**
CO1	To introduce Automation
CO2	To produce coding for controlling Hardware
CO3	To formulate design of interactive installation
CO4	To solve issues of joinery, power delivery, assembly, mechanism
CO5	To demonstrate final working of Interactive Prototype
6	**FIRST YEAR M.ARCH.-TERM-I -DIGITAL FABRICATION - I (2019CA106)**
CO1	To introduce Digital Fabrication
CO2	To use parametric tools for Drawing preparation, optimal layout, numbering
CO3	To make scaled down model and explore various methods of digital fabrication.

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COURSE OUTCOMES – SECOND YEAR - TERM I	
students at the end of the semester will be able to …	
1	**SECOND YEAR M.ARCH.-TERM-I- DIGITAL DESIGN STUDIO - III (2019CA301)**
CO1	Students will learn digital design processes and their application in Design studio in Urban Design projects with focus on sustainability/energy efficiency.
CO2	Simulation software: Introduction to various simulation software and its applications in Architecture.
CO3	Analysis software: Introduction to various Analysis software and its applications in Architecture.
CO4	Learning software to implement design effectively
2	**SECOND YEAR M.ARCH.-TERM-I- RESEARCH - II (2019CA302)**
CO1	Selecting research area from broader area of study
CO2	Writing introduction and literature review of selected topic of research
CO3	Finalising aim & objectives of research with clear understanding of methods used for conducting research
CO4	Conducting case studies or experiment depending on study area
CO5	Analysing data with required techniques
CO6	Writing conclusions from analysis and scope of further research
3	**SECOND YEAR M.ARCH.-TERM-I- DIGITAL PRACTICES & PROFESSIONAL TRAINING (2019CA303)**
CO1	Discuss Ethics, code of conduct and liabilities as an architect
CO2	Explain Approval processes of different authorities
CO3	Practice as Parametric Designer
4	**SECOND YEAR M.ARCH.-TERM-I- INTERACTION DESIGN (2019CA304)**
CO1	The Human- I/P, O/P channels, Human memory, Thinking, Emotion, Individual differences (diversity), Human psychology.
CO2	Principle 1: Recognize diversity, Principle 2: 8 golden rules of id, Principle 3: Prevent errors 1. Guidelines for data display, Guidelines for data entry, Study of HCI patterns
CO3	The process of design, user focus, and aims of user entered design process, three pillars of design, participatory design, scenarios, navigation design, screen design, development methodology. s/w tools: design tools, and s/w engineering tools.
CO4	Use of audio in computer applications, basic concepts, capture, digital representation of sound and processing music, speech, file formats for sound, streaming.
CO5	Text in multimedia, hypertext, hypermedia, Principle of animation, 2D, 3D animation
5	**SECOND YEAR M.ARCH.-TERM-I- SMART MATERIALS & ADVANCED CONSTRUCTION (2019CA305)**
CO1	Distinguish between Traditional Materials, Advanced Materials and Smart Materials.
CO2	Discuss the different class of materials, Characteristics of Smart materials, classification of smart materials
CO3	Describe working principles and theory. Discuss and list manufacturing processes, applications and new advancements in the field.
CO4	Learn about advanced fabrication techniques
6	**SECOND YEAR M.ARCH.-TERM-I- COMPUTATIONAL DESIGN SKILLS (2019CA306)**
CO1	Introduction to GIS software & digital database in a GIS
CO2	Types of pictorial data products & Digital image processing
CO3	GIS definition and terminology & Spatial data modelling
CO4	Data analysis and modelling

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COURSE OUTCOMES – FIRST YEAR - TERM II	
students at the end of the semester will be able to …	
1	**FIRST YEAR M.ARCH.-TERM-II- DIGITAL DESIGN STUDIO - II (2019CA201)**
CO1	Small scale digital designing for a selected site
CO2	Digital design process with selected concept derived from theory
CO3	Presentation with detailed designing
CO4	Medium scale digital designing for a selected site
CO5	Digital design process with selected concept
CO6	Presentation with detailed designing
2	**FIRST YEAR M.ARCH.-TERM-II- ELECTIVE - II (2019CA202)**
CO1	Make complex Arduino models
CO2	Discuss advanced system of assembly Theory
CO3	Discuss Robotics in manufacturing & assembly
CO4	Discuss Robotics in construction
CO5	Discuss advantages of mass customization
3	**FIRST YEAR M.ARCH.-TERM-II- DIGITAL TOOLS & TECHNIQUES - II (2019CA203)**
CO1	Outline the basic fundamentals of data management in GH
CO2	Illustrate proficiency in using Ladybug for climate analysis
CO3	Identify appropriate plugins according to project requirements to expand functionality of GH
CO4	Produce well composed, proportionate diagrams and sheets
CO5	Discuss and describe characteristics of A.I tools
4	**FIRST YEAR M.ARCH.-TERM-II- DIGITAL DESIGN THEORY - II (2019CA204)**
CO1	Understand different digital designing processes and its representation
CO2	Understanding environmental influences and forces to create ever more complex organizations, forms and structures (Biomimicry)
CO3	Understanding the shape rules and a generation engine that selects and processes rules in the theory
CO4	Gain knowledge of folding architecture and blobism
5	**FIRST YEAR M.ARCH.-TERM-II- RESEARCH - I (2019CA205)**
CO1	Different methodologies and related methods used for specific type of research
CO2	How to conduct literature review and what is research design along with its importance
CO3	How to compose data collected from case studies and methods of analysing it
CO4	Various components of research paper
CO5	How to write research paper and citation detailing
CO6	Various types of research
6	**FIRST YEAR M.ARCH.-TERM-II- COMPUTER GRAPHICS (2019CA206)**
CO1	Students will learn about computer graphics Line, circle and polygon generation
CO2	Students will learn Basics of Programming & scripting
CO3	Students will learn Generation of 2D, 3D geometry
CO4	Students will learn All transformation rules for 2D, 3D geometry
CO5	Curve generation, Interpolation, Interpolating, B-splines, Bezier curves,Fractals, Fractal surfaces and lines
CO6	Diffused illumination, Point source illumination, Colour models RGB,HVS, CYM etc., Transparency, Reflection and shadows

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COURSE OUTCOMES – SECOND YEAR - TERM II	
students at the end of the semester will be able to …	
1	**SECOND YEAR M.ARCH.-TERM-II- DIGITAL DESIGN PROJECT - II (2019CA401)**
CO1	To select Project Topic of individual preferences .
CO2	To do design as per Digital design process.
CO3	Completing project for pre final Design
CO4	To work on a final Design model to demonstrate a reasonable amount of interesting ideas and execution techniques.
2	**SECOND YEAR M.ARCH.-TERM-II- ELECTIVE - II (2019CA402)**
CO1	Introduction with its functioning and objectives
CO2	Information related to job analysis and major HRM activities
CO3	Fundamental Concepts, Nature and Significance of CSR & Legislations in India related to CSR
CO4	Role of CSR in company & Dimensions of Sustainable Development