



# MEENAKSHI COLLEGE OF ENGINEERING

No-12, Vembuli Amman Koil Street, West K.K Nagar,  
Chennai - 600 078

Department of Architecture  
B.ARCH (REGULATION-2021)

## COURSE OUTCOMES

**Course Name :** AR3101 - Introduction To Architecture

<b>CO1</b>	Ability to recognise different facets of architecture
<b>CO2</b>	Basic understanding of form and design in all aspects and scales.
<b>CO3</b>	Ability to discern the relationship between manifestations of form and its effects on humans.

**Course Name :** AR3102 - Introduction To Language And English Skills

<b>CO1</b>	An understanding of basic role of language in humans.
<b>CO2</b>	Skill and confidence in everyday requirements of the English language.
<b>CO3</b>	Ability to express experience, explore meaning and construct reality through language.

**Course Name :** AR3103 - Mathematics For Architects

<b>CO1</b>	Ability to understand the mathematical properties of geometric figures and objects
<b>CO2</b>	Skill in solving mathematical problems that would be useful for the field of architecture.
<b>CO3</b>	Ability to analyse and interpret data.

**Course Name :** AR3121 - Geometrical Understanding And Representation

<b>CO1</b>	Ability to understand the relationship between geometry and architectural form.
<b>CO2</b>	Understanding of various attributes of geometric forms and skill in their creation and dissection
<b>CO3</b>	Ability to represent geometric forms through technical drawings

**Course Name :** AR3122 - Art As Cognition And Expression

<b>CO1</b>	Sensitivity and knowledge of art as basic human endeavour.
<b>CO2</b>	Ability and skill to record experience through art.
<b>CO3</b>	Ability to abstract thought, observation and experience through art.



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## COURSE OUTCOMES

**Course Name :** AR3111 - Foundational Design Studio

<b>CO1</b>	Awareness of the totality and components of form in the creation of design.
<b>CO2</b>	Ability to explore the visual/ cognitive language and grammar of the universal elements and principles of design.
<b>CO3</b>	Ability to understand needs as encompassing functional, behavioural, cultural, experiential, etc.,
<b>CO4</b>	Ability to engage awareness towards creating a morphology that fulfils stated intents and needs.

**Course Name :** AR3201 - World Architecture And Urbanism: Early Civilisations To Renaissance

<b>CO1</b>	An overall understanding of the timelines and early history of civilisations and their contributions across the world.
<b>CO2</b>	Knowledge about the contributions of Greece and Rome to architecture and urbanism.
<b>CO3</b>	Familiarity with the intersecting forces in Europe from decline of Roman empire to Medieval times and their manifestation in cities and architecture.
<b>CO4</b>	An understanding of Renaissance and humanism and the resultant architecture and urbanism.

**Course Name :** AR3202 - Structural Mechanics

<b>CO1</b>	Ability to apply the concepts of action of forces on a body and should be able to apply the equilibrium concepts.
<b>CO2</b>	Understanding the concept of bending moment and shear force of beam.
<b>CO3</b>	Understanding of the basic geometrical properties of sections.
<b>CO4</b>	Knowledge about elastic properties of solids.
<b>CO5</b>	Ability to solve problems of principal stresses and strains using numerical and graphical method.



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## COURSE OUTCOMES

**Course Name :** AR3203 - Environmental Science For Architecture

<b>CO1</b>	Understanding of the functions of environment, ecosystems and biodiversity and their conservation.
<b>CO2</b>	Ability to identify the causes, effects and environmental pollution and natural disasters and contribute to the preventive measures in the immediate society.
<b>CO3</b>	Understanding of renewable and non-renewable resources and contribute to the sustainable measures to preserve them for future generations.
<b>CO4</b>	Familiarity with different forms of energy and apply them for suitable applications in for technological advancement and societal development.
<b>CO5</b>	Knowledge of societal activity on the long and short term environmental issues and abide by the legal provisions, National and International laws and conventions in professional and personal activities and to identify and analyse effect of population dynamics on human value education, consumerism and role of technology in environmental issues.
<b>CO6</b>	An understanding of the design of built environment with due consideration of environmental implications.

**Course Name :** AR3221 - Building Components And Their Representation

<b>CO1</b>	Ability to recognise and name components of a building.
<b>CO2</b>	Ability to measure and draw components of a building.
<b>CO3</b>	Ability to make isometric and perspective projections of components of a building.
<b>CO4</b>	Understanding a building in total or in part through the process of measured drawing

**Course Name :** AR3222 - Thinking Through Diagrams And Models

<b>CO1</b>	An understanding of diagrams and models as a mode of thought and analysis.
<b>CO2</b>	An ability to discern the important attributes of a building through diagrams and models.
<b>CO3</b>	Ability to project thoughts towards the future through diagrams and models.



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## COURSE OUTCOMES

**Course Name :** AR3211 - Basic Space Design Studio

<b>CO1</b>	Ability to design simple spaces for human use addressing spatial, social, cultural and temporal human needs.
<b>CO2</b>	Ability to consider the particular context in the process of designing.

**Course Name :** AR3301 - Architecture In India: Early Civilisations To Colonialism

<b>CO1</b>	An understanding of the diversity of architecture in India and sensitivity towards its syncretic aspects.
<b>CO2</b>	Ability to appreciate particular cultural, symbolic, spatial and material qualities in architecture and cities as givers of meaning and continuity.
<b>CO3</b>	Ability to appreciate universal qualities of architecture and their effects.

**Course Name :** AR3302 - Structural Systems And Their Analysis

<b>CO1</b>	Understanding of concept of loads.
<b>CO2</b>	Ability to apply the concepts of determining the techniques of finding the stresses.
<b>CO3</b>	Ability to use the theory of simple bending to find the deflection in beams.
<b>CO4</b>	Ability to analyse and solve the different types of columns and analyse the different types of indeterminate beams

**Course Name :** AR3303 - Climate And Built Environment

<b>CO1</b>	An understanding of climate, comfort and heat balance in human beings.
<b>CO2</b>	An understanding of material effects in buildings.
<b>CO3</b>	Ability to conceptually design buildings considering the effect of sun and wind on buildings.



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## COURSE OUTCOMES

**Course Name :** AR3321 - Non Structural Building Elements And Finishes

<b>CO1</b>	Ability to design and detail appropriate doors, windows, ventilators, etc., for a building using wood, metal and plastic based materials.
<b>CO2</b>	Familiarity with building interior elements and systems.
<b>CO3</b>	Knowledge about building finishes and related techniques

**Course Name :** AR3322 - Digital Drawing, Visualisation And Representation

<b>CO1</b>	Ability to express using digital tools in the realm of visual composition, drafting, 3D visualisation and rendering
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**Course Name :** AR3311 - Advanced Space Design Studio

<b>CO1</b>	Ability to perceive, understand and represent fundamental attributes of form-space with respect to human experience and use.
<b>CO2</b>	Ability to ideate, innovate and create meaningful built environment in basic human situations

**Course Name :** AR3401 - Regional And Vernacular Built Environments In India

<b>CO1</b>	An understanding of the built environment as a process and knowledge of its determinants.
<b>CO2</b>	Ability to analyse built environment through the knowledge of approaches to its study.
<b>CO3</b>	Knowledge of settlement morphologies and regional/ vernacular architecture in specific regions of India.

**Course Name :** AR3402 - Structural Design Of Masonry And Timber

<b>CO1</b>	Knowledge about soil mechanics.
<b>CO2</b>	Ability to design structural masonry walls
<b>CO3</b>	Ability to design timber beams, columns and trusses by applying the code provisions.



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## COURSE OUTCOMES

**Course Name :** AR3403 - Water Supply And Sanitation In Buildings

<b>CO1</b>	Ability to understand environmental services from macro to micro level human environment.
<b>CO2</b>	Ability to adopt sustainable practices and systems for environmental services.
<b>CO3</b>	Ability to design environmental services in a building/ small campus.

**Course Name :** AR3421 - Building Construction With Basic Materials

<b>CO1</b>	Familiarity with the properties and uses of basic building materials.
<b>CO2</b>	Knowledge about the construction details of the basic building materials.
<b>CO3</b>	Ability to design buildings using a combination of basic materials.

**Course Name :** AR3422 - Site Surveying And Planning

<b>CO1</b>	Sensitivity towards aspects of site at macro and micro contexts
<b>CO2</b>	Ability to exploit potential of site to design the built environment.
<b>CO3</b>	Ability to measure, draw, analyse and plan a particular site for a specific purpose.

**Course Name :** AR3411 - Rural Habitat Design Studio

<b>CO1</b>	Ability to collect, assimilate and integrate knowledge in a holistic manner.
<b>CO2</b>	Sensitivity towards the nature and values of unselfconscious and collective design as well as the disconnectedness of human society and environment.
<b>CO3</b>	Ability to observe and analyse changes in the above.
<b>CO4</b>	Ability to project future transformations and give possible/ appropriate ways to address issues, if any.
<b>CO5</b>	Sensitivity in design approach in community oriented projects with respect to context, collective values and needs



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## COURSE OUTCOMES

**Course Name :** AR3501- Architecture And Urbanism Of Colonialism And Modernity

<b>CO1</b>	An understanding of modernity as a fundamental transformation in Western society that spread across the world and the resultant architectural production.
<b>CO2</b>	An insight into the development of various strands of modernism and modern architecture.
<b>CO3</b>	An understanding of architecture of colonialism, nationalism and modernity in India.

**Course Name :** AR3502 - Structural Design Of Concrete

<b>CO1</b>	Ability to understand the different concepts of WSM and LSM.
<b>CO2</b>	Ability to design RCC beams, slabs, staircase, columns, foundations and retaining wall.

**Course Name :** AR3503 - Electricity, Lighting And Acoustics In Buildings

<b>CO1</b>	Ability to understand electrical services in a building.
<b>CO2</b>	Ability to design artificial lighting in a building.
<b>CO3</b>	Knowledge of principles of acoustic design in different building typologies.

**Course Name :** AR3521 - Concrete In Building Construction

<b>CO1</b>	Ability to use concrete as a versatile material in different contexts.
<b>CO2</b>	An understanding of the concepts of concrete as a building construction material.
<b>CO3</b>	Ability to design and detail specific components in concrete where there is scope for architectural design.
<b>CO4</b>	Ability to use concrete innovatively in simple projects.



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## COURSE OUTCOMES

**Course Name :** AR3511 - Urban Architecture Design Studio

<b>CO1</b>	Ability to understand the nature, needs and ways of contemporary urban society as well as relate the existing built environment as a reflection of this.
<b>CO2</b>	Ability to draw from this understanding and identify issues/ challenges involving contemporary urban life and the built environment.
<b>CO3</b>	Ability to give appropriate/ innovative design solutions in the above context.

**Course Name :** AR3601 - Specification, Estimation And Budgeting

<b>CO1</b>	An understanding of the art of building construction through specification writing.
<b>CO2</b>	Ability to work out the approximate estimate and detailed estimate for small scale building projects and low cost housing.
<b>CO3</b>	An understanding of valuation and budgeting.

**Course Name :** AR3602 - Structural Design Of Steel

<b>CO1</b>	Ability to design steel joints for maximum efficiency and strength.
<b>CO2</b>	Ability to design tension and compression members for different conditions by applying the code provisions.
<b>CO3</b>	Ability to design different types of laterally unsupported and supported steel beams for different conditions.

**Course Name :** AR3603 - Advanced Building Services

<b>CO1</b>	Familiarity with different air conditioning systems, their context of use and basics of planning involved.
<b>CO2</b>	An understanding of fire safety, fire fighting, fire prevention and installations in buildings.
<b>CO3</b>	An understanding of mechanical, communication and security systems in a building.
<b>CO4</b>	Ability to design building layouts and sections for service integration.





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## COURSE OUTCOMES

**Course Name :** AR3621 - Steel, Glass And Plastic In Building Construction

<b>CO1</b>	Knowledge of properties of ferrous and non ferrous metals as materials for buildings.
<b>CO2</b>	Knowledge of the use of glass and plastics in building industry.
<b>CO3</b>	An understanding of possibilities of steel as an important building construction material.
<b>CO4</b>	Ability to use steel, glass and plastic appropriately in building projects.

**Course Name :** AR3611 - Environmental Design Studio

<b>CO1</b>	Ability to critically and sensitively understand and address issue of resources.
<b>CO2</b>	Ability to balance diverse aspects/concerns of buildings by making informed choices and innovative design in the context of buildings with intense or complex programmes.
<b>CO3</b>	Ability to apply knowledge intensively in realms such as sustainable built environment, services.

**Course Name :** AR3701 - Contemporary Architecture: Theories And Practice

<b>CO1</b>	An awareness of the spread and varied later directions of modern architecture across the world.
<b>CO2</b>	An understanding of architectural production from the 1960s as driven by large scale changes across the world.
<b>CO3</b>	Familiarity with contemporary forces and directions in architecture across the world.
<b>CO4</b>	An understanding of post independence architecture in India contemporaneous with the rest of the world, along with its own particular influences.

**Course Name :** AR3702 - Professional Practice Of Architecture

<b>CO1</b>	An understanding about the evolution of the architectural profession.
<b>CO2</b>	An awareness of the role and responsibilities of an architect in all realms.
<b>CO3</b>	Familiarity with the laws related to architecture.
<b>CO4</b>	Knowledge about current issues and aspects related to the architectural profession.



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**Course Name :** AR3703 - Contemporary Housing

<b>CO1</b>	Knowledge of various issues concerning housing and housing development in Indian and global context covering a cross section of income groups.
<b>CO2</b>	Ability to appreciate socio-economic aspects in housing.
<b>CO3</b>	An understanding of housing standards, site planning principles, housing concepts and types.
<b>CO4</b>	An understanding of key issues in housing today

**Course Name :** AR3711 - Critical Design Studio

<b>CO1</b>	Ability to understand the wider implication of design decisions and their interdependency with
<b>CO2</b>	Ability to take creative, critical and informed decisions in the context of significant projects that

**Course Name :** AR3811 - Practical Training

<b>CO1</b>	An overall idea of the nuances of architectural practice.
<b>CO2</b>	An understanding about the total process that goes into the making of a building.
<b>CO3</b>	Clarity about the field of architecture that could be carried forth to the higher semester(s).

**Course Name :** AR3901 - Urban Design

<b>CO1</b>	Awareness of the evolution and characteristics of urban forms, their components and interdependencies.
<b>CO2</b>	Understanding of urbanism through theories, aspects, issues and solutions.
<b>CO3</b>	Knowledge of ways to look at and interpret urbanism today.



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## COURSE OUTCOMES

**Course Name :** AR3902 - Landscape And Ecology

<b>CO1</b>	An understanding of reasons for evolution of landscapes across time and context.
<b>CO2</b>	Ability to discern the role of natural and human actions with respect to macro scale of sustainability and ecology as well as in the micro scale of shaping of outdoor environments.
<b>CO3</b>	Knowledge about the elements of landscape design and their scope.
<b>CO4</b>	An understanding of landscape design with respect to site planning and different functional typologies of spaces

**Course Name :** AR3903- Construction And Project Management

<b>CO1</b>	Ability to understand a project from concept to commissioning, feasibility study and facility
<b>CO2</b>	Ability to apply project management techniques in achieving objectives of a project like client
<b>CO3</b>	An understanding of principles of management, construction scheduling, scope definition and team roles.

**Course Name :** AR3911- Dissertation

<b>CO1</b>	A dissertation report with a coherent line of thought as reflected in the written structure and the
<b>CO2</b>	Ability to research deeply into a subject and develop depth in thought in any specific area based
<b>CO3</b>	Ability to look at architecture from an informed, analysed and well thought out personally unique or objective perspective which would help strengthen the thesis process.



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## **COURSE OUTCOMES**

**Course Name : AR3912 - Urbanism And Architecture Design Studio**

<b>CO1</b>	Ability to perceive and design buildings as contributing to/ transforming the urban fabric.
<b>CO2</b>	Ability to bring inclusivity into the architectural design process.

**Course Name : AR3081 - Thesis**

<b>CO1</b>	Skill, knowledge and expertise in the domain of architectural design.
<b>CO2</b>	Ability to handle a major architectural project independently through all stages.
<b>CO3</b>	Ability to intensify thought process directed at a specific area of focus and convert it to a product