

Department of Architecture
ITM University, Gwalior

Programme Specific Outcomes:

PSO1 –Professional responsibility and ethics:The candidate shall develop the skills and core values for taking up the responsibilities of the architectural profession. Understand the ethics of the profession and its social implications.

PSO2 – Social responsibility: The candidate shall understand and learn the basic design principles and skills to produce functional design solutions to various spatial and planning issues within the society. Develop analytical and problem-solving skills to handle diverse social issues.

PSO3 - Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.

PSO4 - Effective Communication: Develop verbal and visual communicative skills for effective communication.

PSO5 - Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.

PSO6 - Effective Citizenship:Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PSO7 – Global outlook: Ability to function in a global scenario through exposure to world history of civilizations and global design and technologies.

PSO8 - Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context with respect to socio-economic and technological changes.

Course Outcomes (CO):

I SEMESTER

AR 101- BASICS OF DESIGN

Upon completion of this course the student should be able to

1. Ability to identify elements and principles of design.
2. Understand Design as a process.
3. Exercise the process to communicate a thought or idea through spaces, forms and graphics.
4. Learn the basics of architectural design through understanding of measurements, plans and various spaces.

AR 102 - Building Construction & Materials-I

Upon completion of this course the student should be able to

1. Understand the skeleton of the building.
2. Develop an understanding of the basic materials and techniques used for construction.
3. Familiarize with materials, their uses and, methods of construction in the world around them and impart reasons for their use.
4. Develop understanding of tools used for construction.

AR 103 - Architectural Graphics-I

Upon completion of this course the student should be able to

1. Develop comprehension and visualization of geometrical forms.
2. Enhance the capability of imagination and perspectives.
3. Builds the skill of lettering, drafting and sketching as an aid for design.
4. Understand the fundamentals of plans, elevations and views through examples of objects.

AR 104 - Structure-I

Upon completion of this course the student should be able to

1. Learn about the structural features and elements of a building.
2. Understand the basic forces and structural principles that apply to buildings.

3. Know the fundamentals of load bearing and structural sensitivity
4. Enhance analytical skills

AR 105 - History of Architecture-I

Upon completion of this course the student should be able to

1. Understand the timeline of ancient civilizations.
2. Develops the understanding of cultures, needs and climates that shaped the forms and functions of shelters in various eras.
3. Develops a reasoning ability to understand why and, how of the ancient buildings and settlements.
4. Ability to understand the parameters of built environment with reference to socio-political factors, geo-climatic factors, technology, and culture.

AR 106 - Communication Skills-I

Upon completion of this course the student should be able to

1. Develop skills of reading and writing fluently.
2. Enhance skills of presentations, public speaking, and formal communication used in the field of Architecture.
3. Develop Leadership qualities and essentials

AR 107 - Workshop and Model making

Upon completion of this course the student should be able to

1. Develop three dimensional spatial perceptions through model making.
2. Enhance the ability to understand the behavior of various materials through practical usage.

ESL0101 - Environmental Science

Upon completion of this course the student should be able to

1. have a general knowledge of environmental topics such as eco-system, pollution, environment impact assessment, waste management.

2. Develop a sensitivity towards environment and sustainability so that the choice of design, material & technical approaches are molded as environmentally friendly and inclined towards protecting the nature.
3. have motivation to participate in environment protection and environment improvement.
4. Acquire skills to help the concerned individuals in identifying and solving environmental problems.

II SEMESTER

AR 201 - Architectural Design – I

Upon completion of this course the student should be able to

1. Understand the space requirements linked with functions.
2. Increase knowledge of fundamental area requirements in conjunction with feel of spaces to humans and their basic requirements.
3. Explore built forms in three dimensions to understand space morphology.

AR 202 - Building Construction & Materials-II

Upon completion of this course the student should be able to

1. Expand their knowledge of a primary material of timber, along with its production and usage.
2. Understand the construction techniques and various products of Timber.
3. Learn about various building elements and their joints
4. be able to draw and detail basic building elements in timber

AR 203 - Architectural Graphics-II

Upon completion of this course the student should be able to

1. Develop graphic drawing skills.
2. Enhance their creativity by developing an understanding of sections and combination of various surfaces.
3. Exercise the ability of producing views and sciography as a graphical aid for design.

AR 204 - Structure-II

Upon completion of this course the student should be able to

1. Understand the basic principles of structural mechanics so that it forms the basis for study of structural design.
2. Understand the working of basic structural elements.
3. Demarcates the uses of timber as a structural element and identify the stresses acting on it.

AR 205 - History of Architecture-II

Upon completion of this course the student should be able to

1. Understand the development of architectural principles and built forms in the context of evolution of the society and civilization.
2. Develop an understanding of Indian architecture, vernacular materials, and construction techniques.
3. Comprehend Indian history with its architecture through various factors of religion, culture and needs.
4. understand and draw the typical elements in Indian architectural styles

AR 206 - Communication Skills-II

Upon completion of this course the student should be able to

1. Learning the skills of presentations through computer aids and technology.
2. Develop a visual literacy enabling communication and presentation of design ideas.

AR 207 - Theory of Design-I

Upon completion of this course the student should be able to

1. Develop an understanding of elements and principles of Design.
2. Understand the process of architectural design and design methodology.
3. Expand the knowledge of art movements.
4. Developing sensitivity to the creative process and visual perception.

AR 208 - Computer Application-I

Upon completion of this course the student should be able to

1. Develop technological and software skills as a medium for architectural designs, analysis and presentations.
2. Learn software like Auto Cad & Adobe Photoshop along with their commands.

III SEMESTER

AR 301 - Architectural Design – II

Upon completion of this course the student should be able to

1. Ability to understand and design forms with respect to functions, sites and climate.
2. Develop a link in built and open spaces.
3. Understanding of architecture as an outcome of ‘space and structure’.

AR 302 - Building Construction & Materials-III

Upon completion of this course the student should be able to

1. Enhance their knowledge of materials and construction techniques including bamboo.
2. Understand the both vernacular and contemporary construction methods and materials, their properties, testing and uses
3. Learn constituents, manufacturing process/ availability, properties/ characteristics, defects, classifications and uses of building materials used in construction

Course Name: Climatology(AR 303)

Upon completion of this course the student should be able to

1. Learn the properties of various climates and climatic phenomenon.
2. Know the behavior of wind, temperatures, and solar radiations on humans and buildings.
3. Understand human thermal comfort as an essential function of a building and its analysis and use in Architecture.
4. Learn the techniques and processes used to build more sustainable and climate responsive designs.

AR 304 - Structure-III

Upon completion of this course the student should be able to

1. Expand the knowledge of designing the structural systems of a building.
2. To understand the analysis of indeterminate structures and their use in field.

AR 305 - History of Architecture-III

Upon completion of this course the student should be able to

1. Expand the knowledge and development of Western Architecture and infer the various factors and materials that shaped them.
2. Understand the techniques used for tackling various cultural, structural and functional challenges that helped shape the architecture of western countries.
3. Study of the building 'types' and the development of architectural form and character based on the developments in construction and technology exemplified through specific building examples that identify the works of the period.

AR 306 - Building Services-I

Upon completion of this course the student should be able to

1. To understand the basic principles of water supply and sanitation.
2. To familiarize the student with plumbing bye laws as per BIS & standard codes
3. To draw the basic service layout system for different types of building such as residential, commercial, educational, public building etc.

AR 307 - Theory of Design-II

Upon completion of this course the student should be able to

1. To provide an insight into the ideas of influential theorists from antiquity to the present time.
2. Enhance communication and interpretations in Architecture

AR 308 -Computer Application-II

Upon completion of this course the student should be able to

1. Enhance and explore AutoCAD which aids them in presentations and design.
2. Learning of 3d visualization and other graphics.

IV SEMESTER

AR 401 - Architectural Design – III

Upon completion of this course the student should be able to

1. Understanding of human scale relationship with building form, space in mono functional building.
2. Development of clusters of repetitive units managing horizontal circulation and understanding of relative space.
3. Use of appropriate presentation techniques to explain the contents of design.

AR 402 - Building Construction & Materials-IV

Upon completion of this course the student should be able to

1. Knowledge of new construction materials and their suitable uses at various stages of construction.
2. Understanding of working with R.C.C. at different levels of construction.
3. draw design details for RCC work in buildings

AR 403 -Surveying and Leveling

Upon completion of this course the student should be able to

1. Learn various types of techniques of site surveying and instruments
2. Gain a broad understanding of Land Survey
3. Get accustomed with the angular and linear measurements
4. record the field information and convert it into drawings

AR 404 - Structure-IV

Upon completion of this course the student should be able to

1. Understand the design elements of Reinforced Cement Concrete, Steel structures along with soil mechanics and foundation engineering
2. Design of Reinforced Cement Concrete structural elements like beams, columns, slabs etc. by different methods.

AR 405 - History of Architecture-IV

Upon completion of this course the student should be able to

1. A sound knowledge base of the processes and events in 20th century that shaped the architecture of the present.
2. Development of critical analysis of the contributing factors and an overview of the issues facing the contemporary world.
3. Foster a sensibility of the architectural idiom

AR 406 - Building Services-II

Upon completion of this course the student should be able to

1. A fair understanding of space requirements and distribution of electrical service provisions.
2. The understanding of lighting principles and different electric light sources available.
3. Learn and practice the schematic layout of simple electrical, illumination, lift and firefighting systems for domestic and office buildings.

AR 407 - Building Sciences

Upon completion of this course the student should be able to

1. Inculcate a general understanding of the importance of acoustics in buildings.
2. Develop an ability to address Architectural Design in terms of space and form for areas of climate responsive and energy efficient design concerns.
3. Understand Energy Efficiency in buildings

AR 408 - Computer Application-III

Upon completion of this course the student should be able to

1. Develop an understanding of the design-based software like Sketchup, 3Ds Max, Revit Architecture.
2. Learning the application of the above said software in design exercises so as to make use of maximum commands.

AR 409 - Art appreciation

Upon completion of this course the student should be able to

1. Learn and practice in various art mediums and forms.
2. Understand the mutual influences of art and architecture.
3. Develop a basic appreciation of art and its history through the ages.

V SEMESTER

AR 501 - Architectural Design – IV

Upon completion of this course the student should be able to

1. Design of buildings addressing the socio -cultural / economic needs of different user groups with integration of basic building services, suitable use of appropriate materials & construction techniques and structural systems in rural areas.
2. Develop design skills and creative abilities, to understand, explore and create complex architectural relationships of design elements with climate and its impact on to a designed environment.

AR 502 - Building Construction & Materials-V

Upon completion of this course the student should be able to

1. Enhance knowledge of new construction materials and their suitable uses.
2. Understanding of working with steel on mass scale construction, working with longer spans and various steel and aluminum sections.

AR 503 - Working Drawing

Upon completion of this course the student should be equipped with

1. skills to prepare working drawings for construction with proper workmanship assurance in accordance with the specification and the contract document.
2. Enhanced analytical skills to understand the constructional implications of design

AR 504 - Structure-V

Upon completion of this course the student should be able to

1. Design Reinforced Cement Concrete structures and elements with respect to Soil properties.
2. Design different types of footings and suitable use of foundations.
3. Enhance basic understanding of structural details of seismic design.

AR 505 - History of Architecture-V

Upon completion of this course the student should be able to

1. Understand how builders in the past solved their structural, functional, and aesthetic problems.
2. Know the sociological background i.e. political, religious, technical and philosophical ideas which lie behind all buildings.
3. Understand works of architects around the world.
4. Learn contemporary approaches in architecture and develop the skills of Architectural Criticism.

AR 506 - Building Services-III

Upon completion of this course the student should be able to

1. Inculcate a fair understanding of integration of various mechanical systems and services and their implication on architectural space design and facilitation.
2. Understand the schematic layout of simple air conditioning system
3. Understanding of intelligent buildings and devices used in them

AR 507 - Landscape Design

Upon completion of this course the student should be able to

1. Enhance awareness amongst students, of the architecture beyond building, in the outdoor environment and landscape.
2. Exploring the role and importance of landscaping and site planning in enhancing and improving the quality of building environs, functionally and aesthetically at local level and urban level.
3. Understand landscape elements as a component of our ecosystem
4. develop skills for a basic landscape design drawing

VI SEMESTER

AR 601 - Architectural Design – V

Upon completion of this course the student should be able to

1. Understand various types of housing typologies and support amenities.
2. Analysis of housing parameters, understanding of land use and architectural design solutions for mass housing.
3. Gain understanding of parameters of building byelaws.

AR 602 - Building Construction & Materials-VI

Upon completion of this course the student should be able to

1. Awareness and knowledge about rapid or speedy construction using precast and modular construction techniques.
2. Understand various construction equipment's required for speedy and effective construction works.
3. Gain understanding for the system to be adopted for the construction of large span structures

AR 603 - Quantity surveying, estimation & specifications

Upon completion of this course the student should be able to

1. Estimate the cost of any building
2. Write technical specifications for any project
3. Carry out rate analysis of different items, equipment & materials in construction

AR 604 - Structure-VI

Upon completion of this course the student should be able to

1. Understand the design elements of Reinforced Cement Concrete, Steel structures along with soil Mechanics and foundation engineering

AR 605 - Behavioral&environmental psychology

Upon completion of this course the student should be able to

1. Develop people-oriented design approach and user sensitive approach in understanding and conceptualizing the built environment through analysis of user's perception & behavior.
2. Understand behavioral sciences

AR 606 - Seminar I

Upon completion of this course the student should be able to

1. Understand the basics of research
2. Gather knowledge to search, review, analyze, present and document the research efficiently and effectively
3. Explore a selected subject of study with background study, literature study/case study and present the same.

AR 607 - Elective I

Upon completion of this course the student should be able to

1. Get command on the chosen elective
2. Enhance their liking and vision as a choice of subject.

VII SEMESTER

AR 701 - Architectural Design – VI

Upon completion of this course the student should be able to

1. Understanding design as a function of specific agenda such as site conditions, orientation, climate, circulation and essential services.
2. Design in the context of integrated public use
3. Understanding incorporation of aspects of structure, services, detailed site planning in the design process

AR 702 - Building Construction & Materials-VII

Upon completion of this course the student should be able to

1. attain a basic knowledge of modular coordination and its applications.
2. Understand the causes of defects in buildings
3. Gain understanding of principles of earthquake resistant construction

AR 703 - Project management & Building Economics

Upon completion of this course the student should be able to

1. Understand the concept of project management and the role of an architect/ project manager in the various stages of planning and execution
2. Know the fundamentals of Building Economics.
3. Understand projects in terms of short term and long term costs

AR 704 - Professional Practice

Upon completion of this course the student should be able to

1. To understand the role of the architect in the professional field and his technical, legal and professional duties.
2. Understand the process of tenders & contracts
3. Learn the basic office management at Architects' office & architectural competitions

AR 705 - Urban Design and Conservation

Upon completion of this course the student should be able to

1. Understand the urban settlement in terms of evolution and perception and the role of conscious urban design.
2. Understand the role of conservation as an inherent part of urban continuity
3. Know the vocabulary, principles and philosophies in urban design

AR 706 – Elective II

Upon completion of this course the student should be able to

1. undertake the course of study which shall supplement the basic course content from among the alternative subjects provided.

VIII SEMESTER

AR-801 PROFESSIONAL TRAINING [P]

Upon completion of this training period

1. The student gains practical knowledge of design, working drawings & site work.
2. The student becomes familiar with the working of an architectural office.
3. The student gains experience of interpersonal skills and networking opportunities in the work field.

IX SEMESTER

AR-901 ARCHITECTURAL DESIGN VIII

Upon completion of this studio course

1. The student can deal with a project at the urban scale
2. The student becomes aware of the multiple factors to be taken into account in a large project
3. The student learns to work in a team

AR-902 URBAN PLANNING

Upon completion of this course the student should be able to

1. understand the concepts and levels of planning from city level to regional levels

2. understand the concepts and theories of settlement planning, land use planning and its socio-cultural contexts
3. get a working knowledge of planning norms and regulations
4. get an overview of transportation planning
5. gain an understanding of a master plan/ Development Plan and its components

AR-903 RESEARCH TECHNIQUES [T]

Upon completion of this course

1. The student becomes aware of the potential of research in the field of architecture and allied subjects.
2. The student learns to outline a research study in terms of aim, hypothesis, scope, limitations and develop a basic research design
3. The course helps the student to apply research principles in his seminar study.

AR-904 SEMINAR II [P]

1. The course leads the student to explore a subject of his choice in reasonable depth.
2. The student learns to research a subject, put forth his ideas and analysis to his peers and others in visual, written and verbal format.

AR 905 – Elective III

Upon completion of this course the student should be able to

1. undertake the course of study which shall supplement the basic course content from among the alternative subjects provided.

X SEMESTER

AR-1001 Thesis [P]

1. The student applies his learning of the previous semesters in selecting, proposing and designing an architectural project of his choice.
2. The student creates a complete project from feasibility to detail design

AR 1002– Elective IV

Upon completion of this course the student should be able to

1. undertake a course of study which shall supplement his working knowledge of the field from among the alternative subjects provided