



!! SHREE GAJANAN MAHARAJ PRASANNA!!

P. R. PATIL COLLEGE OF ARCHITECTURE

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2.6.1 Teachers and students are aware of the stated Programme and course outcomes of the Programmes offered by the institution.

Sr.no.	Content
1.	Course outcome (CO)
2.	Program outcome (PO)
3.	Program specific outcome (PSO)

Principal
P.R. Patil College of Architecture
Kathora, Amravati.

B. ARCH - COURSE OUTCOMES (CO)**FIRST SEMESTER**

S.N O	SUBJECT NAME AND COURSE CODE	COURSE OUTCOMES	
1	1AR01 BUILDING MATERIALS & CONSTRUCTION-I	CO1	To study basic building elements and understand the concept of sub and super structure.
		CO2	Will be able to understand and use various materials like bricks, mud and clay and to learn their properties
		CO3	To understand the types of bricks and brick bonds, plinth filling details in plan and section and to graphically represent it.
		CO4	Will be able to thoroughly understand the types of stones and its properties related to architectural practice.
		CO5	Will be able to distinguish between various types of masonry and its usage according to its functions
		CO6	To understand the various levels in the super structure like ground, Sill, lintel, roof, parapet etc.
2	1AR 02 ARCHITECTURAL GRAPHICS-I	CO1	The students will be able to learn various fonts and lettering styles, types of lines and its gradation, graphical codes and learn how to scale the given drawing.
		CO2	To understand various eye levels and set views accordingly.
		CO3	Draw orthographic projections of simple and complex objects and hollow objects.
		CO4	Development of surfaces, cutting and penetrating the solids.
		CO5	To learn the Architectural plans, elevations and sections and apply the same knowledge in the years to come.
3	1AR03 HISTORY OF ARCHITECTURE & CULTURE-I	CO1	Architecture is considered as a combination art and science and how it is being evolved since the early times- the patterns, reasons and the need of settlement.
		CO2	Learn the River Valley Civilizations, its social, architectural , cultural impact and to learn the art styles related to the same
		CO3	To be able to distinguish between various types of Indian and Western Sculptures and knowledge of the sculptors
		CO4	Miniature Paintings and learning how to implement it i n the interiors as well as the exteriors
		CO5	Study of various art styles such as impressionism, expressionism, cubism, Abstract art and futurism- making Murals, paintings and arranging varies activities on above subjects and to learn about various sculptors and painters from the past till date.

4	1AR04 COMPUTERGRAPHICS-I	CO1	To be able to understand and have mastery over basic computer applications, as required in the course of architecture in later years to present the data digitally.
		CO2	To learn about the software's and hardware's.
		CO3	Learn the use of PPT's and internet and other computer applications.
		CO4	To learn AutoCAD and drafting a simple plan in it using its various properties.
5	1AR05 ARCHITECTURAL COMMUNICATIONSKILLS	CO1	To be able to understand the basic terminologies in architectural practice
		CO2	To communicate in various mediums like graphics, drawings, presentation skills and various modes of presentation.
		CO3	To be able to understand the concepts behind the verbal and non-verbal communication.
		CO4	To understand the difference between Meetings, seminars, workshops and group discussions
		CO5	To be able to write office reports, site visit reports, inspection reports etc.
		CO6	To be able to write letters and understand the parameters of a C.V.
6	1AR06 ARCHITECTURAL DESIGN- I	CO1	To implement the design fundamentals and design principles graphically and to formulate varied concepts from the same.
		CO2	To study the elements of architecture and to build various types of spaces from it and understand the various types of spaces.
		CO3	To apply the basic Principles of design and graphically represent it.
		CO4	Understanding of open, semi open and covered spaces and to understand the emotional character related to it.
		CO5	To formulate the co-relation between the Basic Design and Architectural Design and formulate concepts on its basis.
7	1AR09 VISUALARTSSTUDIO-I	CO1	To understand the visual codes of the arts and drawings and also to understand the technical language and apply it in formulating various concepts of design.
		CO2	To successfully apply the knowledge of various historical and art styles in murals, sculptures, paintings and art works.
		CO3	To understand and apply the basic knowledge of principles of design and use it in formulating various concepts in the later years to come.
		CO4	To develop co-ordination skills between the eye and hand and to apply it drawing free hand sketches in outdoors and indoors.

SEMESTER SECOND			
8	2AR01 BUILDING MATERIALS & CONSTRUCTION- II	CO1	To understand the various building elements, terminology related to the building structures.
		CO2	Use of Timber as a building material, its properties and application to various building elements such as door, windows, partitions etc.
		CO3	To study the treatment of timber and its storage
		CO4	To study the types of windows, doors, portions and apply the same knowledge in coming years.
		CO5	To study the types of timber trusses and its application with respect to span.
9	2AR 02 ARCHITECTURAL GRAPHICS-II	CO1	To study and understand the ways and means of measure drawing and applying the same knowledge in Architectural Graphics and Architectural Design.
		CO2	To draw one point and two point perspectives of simple objects and in later years apply the same knowledge for drawing views from the design projects.
		CO3	To understand various mediums for drawing the perspectives.
		CO4	To draw isometric and axonometric views of initially simple objects and later of complex building elements and forms.
		CO5	To make the drawings more visually communicative with the help of sciography in plans, elevations and views.
10	2AR03 HISTORY OF ARCHITECTURE-II	CO1	Understand the different types of planning features, use of materials, construction techniques of various historical styles.
		CO2	To understand the settlement pattern, social order and impact of society on architecture.
		CO3	Evolution of various temple forms and understand the complexities of the temple planning related to the social order.
		CO4	To understand various construction methodologies of the temple precincts.
11	2AR04 THEORY OF ARCHITECTURE-I	CO1	To understand the Basics of architecture and concepts behind the term Architecture.
		CO2	To formulate the scope of Architecture and Architectural field.
		CO3	To understand the basic difference between the mass and space and form and understand its transformation from original concept to the final output.
		CO4	To actually understand the Principles and Elements of Designs with Live Examples.
		CO5	To understand the emotional character of the colours, colour wheel, colour schemes and combination of various colour

			symbolism.
12	2AR05 MECHANICS OF STRUCTURE-I	CO1	To study the inter-relationship of the Architectural design parameters and the structural aspects.
		CO2	To understand the basics of mechanism of structures and how to attain equilibrium or balance.
		CO3	To apply the knowledge in balancing structures and deciding the type of structural system to be used according to the span and site details.
		CO4	To study various types of forces and their behavior, to study inertia and simply supported beams and cantilevers load calculations.
13	2AR06 ARCHITECTURAL DESIGN-II	CO1	Study of 2D and 3D graphics, co-relating it with the elements of design and principles of design.
		CO2	Formulating assignments on each of the above said exercises and to distinguish between the Basic Design Principles and Architectural Design.
		CO3	To study the anthropometrics and related data for various projects and how to successfully use the same study for various projects to come in later years.
		CO4	Study of types of spaces; design a small project keeping in mind the context and design parameters.
		CO5	To study the basic aspects and methods of measured drawings and study of our rich cultural and historical heritage and to document it.
14	2AR09 MODELLING WORKSHOP- I	CO1	Use of different types of materials such as clay, POP, jute fabric, metal scraped and, understand its properties and create various kinds of models, sculptures, murals etc.
		CO2	Apply the same knowledge in coming years in Architectural Design's Model Making
		CO3	Understanding the 2D and 3D surfaces and its treatment.
		CO4	Co-relating the concepts , Principles and Elements of Design with Model Making.
SEMESTER: THIRD			
15	03AR01 APPLIED MATERIALS	CO1	To differentiate among the properties of various building materials and successfully suggest its use according to different climatic conditions and depending upon the respective properties of the materials
		CO2	To carry out market survey for knowing about the cost specifications and use the best possible alternative wherever needed.
		CO3	Use of all the above mentioned materials, its properties and its application in the interiors and the exteriors

		CO4	To study and apply the knowledge of acoustics and acoustical materials in various projects as per need.
16	03AR02 BUILDING MATERIALS & CONSTRUCTION- III	CO1	To apply the gained knowledge about the types of timber floors and its application in projects such as stage design, auditoriums, dance theatres etc.
		CO2	According to the span and requirement, selection of type of false ceiling and its construction details.
		CO3	Detailed study of cement as a building material and its constructional application details. The students will be able to undertake various types of stability tests of cement.
		CO4	To study the meaning and properties of foundation and its types and usage according to site conditions
		CO5	To study formwork and its importance and comparing timber and steel formwork.
17	03AR03 HISTORY OF ARCHITECTURE-II	CO1	To Differentiate between the River valley civilization in terms of its salient features, social order, architectural details and characteristics of The Egyptian and the Mesopotamian Architecture.
		CO2	To understand the chronology, salient features and architectural details of the West Asiatic Architecture; namely - Greek civilization, Roman, Early Christian Architecture and Byzantine Architecture, Romanesque, Gothic and Renaissance Architecture.
		CO3	Study of Islamic Architecture, its parameters and salient features with respect to geometry, symmetry and balance.
		CO4	Study of basic architectural elements of the Islamic architecture- tomb, gardens, minarets, arches, landscapes etc.
18	03AR04 APPLIED CLIMATOLOGY-I	CO1	To understand the co-relation of Architectural Design concepts and features of Applied climatology and to formulate a climate responsive design solution.
		CO2	To be able to state the earth-sun relationship, sunpath diagram, wind flow pattern, study of temperature ranges, average annual rainfall scales, etc.
		CO3	Various parameters of climatic factors and terminologies related to it.
		CO4	Study of climatic elements and use of data collection equipment's for calculating various parameters and successfully apply it in design.
		CO5	To differentiate between types of Tropical Climates and suggest design solutions for each.
19	03AR05 ARCHITECTURAL STRUCTURE-II	CO1	Will be able to understand various types of loading systems and calculate the loading patterns.

		CO2	To calculate the strain energy, simple bending in beams and shear and bending stress on horizontal section.
		CO3	To understand the concept of foundation design in varied soil conditions, direct and bending stress, eccentric load on short column etc.
20	03AR06 ARCHITECTURAL DESIGN STUDIO– III	CO1	Understanding of the design process and various stages of design namely study of project, case study analysis, data collection and area analysis, site and contextual study, study of climatic data- sunpath diagram, wind flow pattern etc. and ultimately evolve a holistic design solution by combination of the above said parameters.
		CO2	Recognize the relationship between user, activity and space, potentials and constraints of the site and the pre-requisites of the design program.
		CO3	Acquire proficiency to design simple built environments in terms of single activity spaces which will be user-friendly, emphasizing the environmental characteristics, cost-efficient and stressing on the use of varied materials and structural techniques.
		CO4	Creatively understand the relationship between form, space and structure.
21	03 AR09 SURVEYING AND LEVELLING- LAB	CO1	Understand the importance of Study of Surveying in the field of Architecture.
		CO2	Understand the types of maps and detailed study related to it.
		CO3	Use of various equipment's like levels, compass ,theodolites, tachometer, EDM, total stations etc.
		CO4	Successfully measure the distances, elevations, contours using various equipment's.
		CO5	Apply the same knowledge and prepare contour plans and successfully read it.
		CO6	Undertake types of surveys by traversing, triangulation method, plane table survey and mapping and successful use of GPS system.
SEMESTER:FOURTH			
22	04AR01 ARCHITECTURAL DESIGN–IV	CO1	Understanding of the design process and various stages of design namely study of project, case study analysis, data collection and area analysis, site and contextual study, study of climatic data- sunpath diagram, wind flow pattern etc. and ultimately evolve a holistic design solution by combination of the above said parameters.
		CO2	Recognize the relationship between user, activity and space, potentials and constraints of the site and the pre-requisites of the design program.
		CO3	To understand the designing of multifunctional community buildings.

		CO4	To understand culture, tradition, topography, climate and building bye laws in generating built form.
		CO5	Students will be able to generate design solutions for a small scale multi-functional buildings like library, club, gymnasium, low rise apartment, low cost housing element, office cum shop, etc.
23	04AR02 BUILDING MATERIALS & CONSTRUCTION- III	CO1	To understand a various types of ferrous material with its manufacturing process and it's uses within building.
		CO2	To understand various types of non-ferrous material with its manufacturing process, it's uses within the building and construction details of doors made of steel and aluminum.
		CO3	To understand various types of metal casement window and ventilator with its fixing detail.
		CO4	To understand various types of metal partitions and its fixing detail.
		CO5	To understand various types of glass available in the building industry.
		CO6	To understand different types of plastics used within building.
		CO7	To successfully apply the same knowledge according to site conditions and pre requisites of the design requirements.
24	04AR03 HISTOTY OF ARCHITECTURE- III	CO1	To study and understand different styles of Imperial style or Delhi style.
		CO2	To study and understand different styles and architectural elements and construction techniques of Provincial Style (fusion of Islamic style and Local Regional Architectural Elements) and distinguish between the same in terms of the above said parameters
		CO3	To study and understand different styles of various Mughal rulers and their contribution to Islamic Architecture in Indian Sub-Continent.
		CO4	To study and Revolution on society, economy, living styles and most importantly the Architecture and society planning. Evolution of Exhibition pavilions and their respective importance.
		CO5	To distinguish between the salient features of the varied Architectural styles and School of Thoughts like Cubism, Chicago School, Bauhaus, Minimalism and many more.
		CO6	To study and understand philosophy and work of pioneer and contemporary Architects in Western and Indian context and to assimilate their design philosophies and if possible implement them in later years.
25	04AR04 APPLIED CLIMATOLOGY-II	CO1	Impact of climatic conditions on the planning, orientation, material selection, fenestration details to achieve comfortable living conditions

		CO2	To understand the impact of micro and macro climate on built and un-built masses
		CO3	Construction practices as per various types of climatic conditions.
		CO4	Day lighting factors and importance of natural lighting and ventilation in the built mass.
		CO5	Understand the Passive Cooling and heating elements and to implement it in design, namely orientation, Fenestrations, daylight, micro climatic features, wind directions, sunpath diagrams, cavity walls, cross ventilations, stack effect, reverse stack effect etc. to achieve climate responsive design solutions.
26	04AR05 ARCHITECTURAL STRUCTURE-II	CO1	To understand the basic theory and principles of structural analysis and structural properties of elements.
		CO2	Will be able to understand the fixed beams with different types of loading patterns.
		CO3	To calculate the moment distribution method for portal frames and understands the concept of continuous beams and its various loading probabilities.
		CO4	Calculating loading conditions in fixed beam, overhanging beams, continuous beams, Portal frames etc.
		CO5	Will be able to design simple load bearing structures.
27	04AR08 COMPUTER GRAPHICS STUDIO-II	CO1	To understand the work in multiple screens in Auto Cad and also to successfully use various commands to create and draft a working plan with various rendering techniques.
		CO2	To be able to do 3D Drafting and 3D modeling using various techniques, construction planes, setting up elevations etc.
		CO3	To understand 3D Rendering and setting to create an interesting and realistic background to the view created.
28	04AR09 WORKING DRAWING-I	CO1	To be able to successfully understand the difference between the Architectural drawings and Working Drawings.
		CO2	To execute the working drawing of a load bearing structure consisting of the municipal drawing, toilet details, staircase details, etc and also all possible constructional details on the site plan - rain water harvesting pit, STP, parking details, structural details, landscaping details, internal roads, etc.
		CO3	Other details comprising of electrical layout, water supply layout and working sections and elevations.

SEMESTER: FIFTH

29	5AR01&05AR07 BUILDING MATERIALS & CONSTRUCTION-	CO1	Understand the steel members with connections of girders, stanchions and grillage foundations.
		CO2	Advantages of R.C.C Frame Structure over load bearing masonry, details of R.C.C. slabs, beams, columns, footings

	V		and its types.
		CO3	Study of Cantilevers, staircases and its reinforcement details.
		CO4	Low cost construction techniques and study of concrete and its types.
30	05AR02 BUILDING SERVICES AND EQUIPMENTS.	CO1	Computing water demands, water impurities , water supply systems for low and high rise structures.
		CO2	Water supply pipes and fittings, material, size and classifications. Types of taps, toilet and kitchen fittings.
		CO3	Water storage reservoir, their types and importance in water supply scheme.
		CO4	Electrical wiring systems and electrical appliances.
		CO5	To understand the Drainage systems, conservancy and water carriage systems. Types of traps and sanitary fittings.
		CO6	Understand the Sewage disposal systems from building.
31	05AR03 ARCHITECTURAL STRUCTURE-IV.	CO1	To distinguish between the types of concrete- cements, fine and coarse aggregates, water cement ratio, formwork.
		CO2	To understand mild steel, its various sections and use of I.S. codes.
		CO3	To understand the R.C.C. Theory, column , beam, slab and footing design by limit state method
32	05AR04 SPECIFICATION	CO1	To write a detailed specification with rate charts and quality analysis of the materials.
		CO2	To understand the importance of specification in Architecture.
		CO3	To understand the Primary considerations for selections of materials for various operations.
		CO4	To write specifications for basic materials, specification for various works of residential buildings and Specifications for demolitions work , temporary constructions.
		CO5	Study of proprietary building materials along with manufactures specifications, trade name of such materials
33	05FEAR05 FREE ELECTIVE FUNDAMENTALS OF ARCHITECTURAL DESIGN	CO1	To understand the Basics of architecture and concepts behind the term Architecture.
		CO2	To formulate the scope of Architecture and Architectural field.
		CO3	To understand the basic difference between the mass and space and form and understand its transformation from original concept to the final output.
		CO4	To actually understand the Principles and Elements of Designs with Live Examples.

		CO5	To understand the emotional character of the colours, colour wheel, colour schemes and combination of various colour symbolism.
		CO6	To understand the Architectural design process -an analysis -integration of aesthetic and functional utility of spaces.
34	05FEAR05 FREE ELECTIVE LANDSCAPE ARCHITECTURE	CO1	Understanding of relationship between man nature and land.
		CO2	Understanding history and concepts of different types of art of gardens.
		CO3	To understand new garden designs
		CO4	To understand basic principles and elements of landscape design.
		CO5	To understand characteristics, design and visual aspects of various types of plants
		CO6	Understanding the process of site analysis, data collection, interpretation and evolution of landscape plans
35	05AR06 ARCHITECTURAL DESIGN STUDIO- V	CO1	Will be able to design a multi-functional community building emphasizing the site and site context, culture, tradition, topography, climate and building bye laws.
		CO2	To state importance of case studies, data collection, area analysis, evolution of planforms, climatic oriented planning and design features, space utilization, building & site services, site analysis and site planning, etc. in the Architectural design process.
		CO3	A study tour shall be organized and a site relating to the same tour would be selected.
36	05AR08 INTERIOR DESIGN - I	CO1	Master the vocabulary of interior design, its elements and principles, and will understand an overview of furniture design through Vernacular architecture in India.
		CO2	Understand the various components of interior design like function, themes, concept etc and apply it in later years to come.
		CO3	Understand various components of interior space like walls, floors, ceilings etc and treatment and finishes for the same as per the requirement and emotions of the space to be designed.
37	05AR09 WORKING DRAWING-II	CO1	To be able to successfully understand the difference between the Architectural drawings and Working Drawings.
		CO2	To execute the working drawing of a R.C.C. Frame structure consisting of the municipal drawing, toilet details, staircase details, centerline plan, etc. and also all possible constructional details on the site plan - rain water harvesting pit, STP, parking details, structural details, landscaping details, internal roads, etc.

		CO3	Other details comprising of electrical layout, water supply layout, landscape layout and working sections and elevations.
SEMESTER: SIXTH			
38	06AR01 & 06AR07 ARCHITECTURAL DESIGN- VI	CO1	Will be able to design a multi-functional community building emphasizing the site and site context, culture, tradition, topography, climate and building bye laws.
		CO2	To state importance of case studies, data collection, area analysis, evolution of plans, climatic oriented planning and design features, space utilization, building & site services, site analysis and site planning, etc. in the Architectural design process.
		CO3	To co-relate between Building services and Architectural Drawings.
		CO4	A study tour shall be organized and a site relating to the same tour would be selected.
39	06AR02 BUILDING MATERIALS & CONSTRUCTION- VI	CO1	Understanding design of various types of Steel trusses and applying the knowledge in long span structures.
		CO2	Understanding design of north light truss with details of their joining and fabricating it in industrial sheds.
		CO3	Understanding the concept and design of patent glazing.
		CO4	Understanding the concept and design of precast building elements and its advantages.
		CO5	Understanding the design of pile foundations, Knowing about their types and construction.
		CO6	Understanding the design of Underpinning and Shoring and its purpose.
40	06AR03 ARCHITECTURAL STRUCTURE -V	CO1	To understand the concept of Precast concrete, thumb rules for beams, columns, slab for fixing & sectional properties.
		CO2	To understand the execution of Water tanks resting on ground with flexible and rigid base by I.S. code method.
		CO3	To Understand the types of joints in steel structures, riveted, welded and bolted joints. Types of steel section and their properties
		CO4	Simple welded and riveted connection, design of simple tension and compression member of trusses.
41	06AR04 ESTIMATE AND COSTING	CO1	Understand the meaning of Estimate and its uses
		CO2	Understand the importance of estimate in different public bodies and the procedures of its approval, i.e. tender document.
		CO3	To understand the measurement sheet, abstract sheet format and with an example of 1 room.
		CO4	To understand the calculations for rcc and load bearing structure with an example.

		CO5	To understand an importance of rate analysis and its use in preparation of estimate
		CO6	To understand the role of computer in preparation of estimate and various attachments of sheets.
42	06FEAR05 FREE ELECTIVE. CLIMATE RESPONSIVE ARCHITECTURE	CO1	To understand the co-relation of Architectural Design concepts and Climate Responsive Architecture features of and to formulate a climate responsive design solution.
		CO2	To be able to state the earth-sun relationship, sunpath diagram, wind flow pattern, study of temperature ranges, average annual rainfall scales, etc.
		CO3	Various parameters of climatic factors and terminologies related to it.
		CO4	Understanding of planning, designing, materials and techniques considered in traditional structures with respect to climate.
		CO5	Solar charts, types of shading devices, shadow angles and its use.
		CO6	Planning and design of building in hot and dry climates.
43	06FEAR05 FREE ELECTIVE SUSTAINABLE ARCHITECTURE.	CO1	To understand the co-relation of Architectural Design concepts and features of Sustainable Architecture and to formulate a climate responsive design solution satisfying the solutions of global warming and conservation.
		CO2	Study of sustainable architecture in context with resource efficiency related to constructions and operation of buildings.
		CO3	To understand the concepts of Sustainable and conservation practices, water conservation, sewerage treatment, solid waste treatments, economics and managements.
		CO4	Low energy design, hybrid system, modeling and simulation of energy system, integration of P.V. and wind system in the building, wind, solar and other non-conventional energy systems.
		CO5	Climatic factors and sustainability.
44	06FEAR06 ACOUSTICS AND ILLUMINATION	CO1	To enable the students understand the articulation of sound within and around building, fundamentals of sound propagation and lighting requirements in buildings.
		CO2	To understand Sound transmission and absorption – outdoor noise levels, acceptable indoor noise level, sonometer.
		CO3	To understand Acoustical defects and remedies.
		CO4	Acoustical Treatment conditions in various interior spaces.
		CO5	Principles of Illumination and Lighting Design.
45	06AR09 INTERIOR DESIGN-II	CO1	To Impart the knowledge of interior design as an integral part of Architectural Design process and the study of latest interior materials.

		CO2	To understand the building elements and various methods of their treatments with materials and construction techniques with market survey.
		CO3	Understand the various components of interior design like interiors spaces, functions, form, scale proportions, balance, harmony and rhythm.
		CO4	Able to design furniture layout for specific types of recreational, educational, office and commercial activities, furniture details, ceiling design, electrical layout, tile layout in particular theme or concept in interiors with respect to human comfort.
		CO5	Visual perception of interiors spaces, functions, form, scale proportions, balance, harmony and rhythm.

SEMESTER:SEVENTH			
46	07AR01 ADVANCE CONSTRUCTION-I	CO1	Understanding of various types of soil with its bearing capacity of load of building and co-relating the same knowledge in the design solutions.
		CO2	Basic knowledge of earthquake cause, its type and its effects on load bearing and frame structure.
		CO3	Understanding of remedial measures and retrofitting for earthquake region.
		CO4	Understanding of construction rapidness due to modular co-ordination and its multipurpose functional application.
		CO5	Understanding of construction details of curtain wall and structural glazing material and applying it whenever necessary.
		CO6	Understanding of architectural glass system and its application.
47	07AR02 ENVIRONMENTAL SERVICES-I	CO1	To understand various aspects of city level water supply systems, drainage and solid waste disposal.
		CO2	Understanding of water collecting, treating and distributing at the city level by tapping the various types of water sources.
		CO3	To understand various ways and means of rain water disposal and rain water harvesting system
		CO4	Understanding of water pollution and its preventive measures
		CO5	Understanding of different factors affects to decide a location of STP
		CO6	Understanding of green practices to garbage disposal and recycling methods of liquid and solid wastes.
		CO7	Understanding of sewage disposal in un-sewered location.
48	07AR03 PROFESSIONAL PRACTICE	CO1	To learn the present trends of architectural practice and valuation.
		CO2	To understand the role of professional bodies, working, byelaws, categories of membership, election procedure and code of conduct.

		CO3	To study The Architects Act of The Architects Act of 1972 and about the Council of Architecture.
		CO4	To understand Professional responsibilities of the architect, Techniques of valuation, elements of valuation and factors affecting valuation. Methods, valuation of landed and building property, comparable cost of sale, purchase and mortgage.
		CO5	To understand in detail the concept of Valuation.
49	07AR04 URBAN PLANNING	CO1	To develop the understanding of urban planning process through surveys, analysis, alternative planning strategies and urban planning issue.
		CO2	To understand the inter- connection between Architectural Design, Urban Planning, Urban Design, Urban Landscape Design and its differences.
		CO3	To study the hierarchical levels of planning.
		CO4	To Understand the historical development of social order and town planning from the ancient civilization to the modern day concepts.
		CO5	To study about various great town planners and their contribution; and applying the same knowledge in later years to come.
		CO6	To get accustomed with the various types of planning types and importance of survey in urban planning.
		CO7	To understand the recent trends in town planning and various town planning schemes.
		CO8	On the basis of above gained knowledge, generate a layout following all the parameters and norms of urban planning, this layout is an extension of the Design problem from the Architectural Design- VII subject.
50	07AR05 ARCHITECTURAL STRUCTURE-VI	CO1	To understand the load calculation, analysis design and detailing of slab, beam, column, footing as per relevant IS code practice.
		CO2	Understand the effect of wind pressure on tall structure.
		CO3	Understand the theories of flat slab, combine footing & eccentric footing & its selection criteria.
		CO4	Understand types of failure in various structure, causes of failure, Evaluation of damage, nondestructive testing & interpretation of the result for concrete structures, techniques to prevent collapse failure of structures, apply rehabilitation & repair process.
		CO5	Understand design procedures of riveted, bolted & welded connections
		CO6	Understand design procedures of tension members, compression members of roof trusses
51	07AR06 ARCHITECTURAL DESIGN STUDIO- VII	CO1	Will be able to design a mass housing project emphasising an issue or potential of the site tapping its site context, culture, tradition, topography, and climate and building bye laws.

		CO2	To state importance of case studies, data collection, area analysis, evolution of planforms, climatic oriented planning and design features, space utilization, building & site services, site analysis and site planning, etc; in the Architectural design process.
		CO3	A study tour shall be organised and a site relating to the same tour would be selected.
		CO4	A detailed study of housing typologies will be done in this semester, and the same project will also be dealt in urban planning with respect to its clustering patterns and area calculations. In eight semesters its landscaping will be dealt in landscape design and Amenities will be designed in A.D.-VIII, hence creating a holistic design proposal.

SEMESTER: EIGHTH

52	08AR01 ARCHITECTURAL DESIGN-VIII	CO1	Will be able to design the Amenities for the mass housing project dealt in seventh semester.
		CO2	To state importance of case studies, data collection, area analysis, evolution of plan forms, climatic oriented planning and design features, space utilization, building & site services, site analysis and site planning, etc.; in the Architectural design process.
		CO3	A study tour shall be organized and a site relating to the same tour would be selected.
		CO4	Its landscaping will be dealt in landscape design and Amenities will be designed in A.D.-VIII, hence creating a holistic design proposal.

53	08AR02 ADVANCECONST RUCTION-II	CO1	To understand the development of large span structures, high-rise structures with its planning and construction aspects
		CO2	Understand RCC and steel space structure; understand the history of shell structure and its construction techniques
		CO3	Understand the temporary structures for short term events and used of modular techniques and materials
		CO4	Recognize various Ferro cement techniques and its applications
		CO5	Will understand the principals, method advantages and disadvantages of pre stressed concrete
		CO6	Learn details of various types of elevators and Escalators its mechanisms.

54	08AR03 ENVIRONMENTA LSERVICES-II	CO1	To study the concepts of specialized services like natural and artificial ventilation and its methods.
		CO2	To study various methods of Refuse disposal and its execution in high rise buildings.
		CO3	Modes of vertical circulation like escalators, lifts and building automation services.

		CO4	To study means of fire-safety norms and application of the same knowledge in designs.
		CO5	Study of fire detectors and fighting installation. Type of detectors and usage. Alarm system, Firefighting pumps, fire tank, dry and wet risers, automatic sprinkler, fire drill, refuge areas.
55	08AR04 SUSTAINABLE ARCHITECTURE	CO1	To understand the importance and need for Sustainable Planning concept and its co-relation with Architectural design.
		CO2	To study the Environmental Impact Analysis and its salient features and steps to be followed while execution.
		CO3	To understand the Historical Background of Sustainable Architecture.
		CO4	To work out the resource efficiency and ecofriendly construction practices
		CO5	To study the Sustainable Planning and Policies and its terms and conditions.
56	08AR05 LANDSCAPE DESIGN	CO1	Understanding of relationship between man, nature and land and landscape designing and effectively applying it the design solutions.
		CO2	Understanding historical developments and concepts of different types of evolution of gardens.
		CO3	To understand modern garden designs.
		CO4	To understand basic principles and elements of landscape design and apply it successfully in the projects of campus planning according to need.
		CO5	To understand characteristics, design and visual aspects of various types of plants and its uses with respect to landscape design.
		CO6	To understand the process of site analysis, data collection, interpretation and evolution of landscape plans.
57	08AR06 PROFESSIONALE LECTIVE-I (1)HOUSING	CO1	To study the need for , demand and supply of housing in India, to expose the role or function of various housing agencies, the typologies of housing with basic environmental issues.
		CO2	To differentiate between the housing typologies and its importance.
		CO3	To understand the role of socio-economic, historical and cultural and traditional factors in shaping up the housing typologies.
		CO4	To understand the housing surveys and its types and its importance.
		CO5	To study the National habitat and housing policy slum improvement scheme, ISHDP, DCR relevant to housing.
		CO6	To study the housing schemes designed by eminent designers and understand their ideologies behind the respective designs.

58	08AR06 PROFESSIONALE LECTIVE-I ENVIRONMENTAL PLANNING	CO1	To Provide advanced knowledge on how all issues and concerns of environment can integrate to architectural design process.
		CO2	To understand the early settlement patterns with respect to the street patterns, layout, orientation, nature of built and un-built spaces.
		CO3	Quality of Urban Environment and Living, Conservation of Water, Land, Energy its methods.
		CO4	To study Solid & Liquid Waste from residential & Commercial Buildings and Salient Features of environmental laws.
59	08AR06 PROFESSIONALE LECTIVE-I CONSTRUCTION MANAGEMENT	CO1	The student acquires general understanding of the basic terminology of the subject and knows the PROJECT lifecycle. He will also know about the CPM, PERT NETWORK diagrams, construction time, scope and cost management and quality management techniques in detail.
		CO2	Understand the scope and structure of construction management.
		CO3	Understand the time management concepts in construction management.
		CO4	Understand the modern concepts of management.
		CO5	Gain knowledge on the significance and principles of CPM and PERT Networking.
		CO6	Understand the financial management concepts in construction management.
		CO7	Gain knowledge about quality control management.
SEMESTER: NINTH			
60	09AR01 PRACTICAL TRAINING	CO1	Work on working drawings and presentation drawings, prepare detailed drawings of toilet details, staircase details etc.
		CO2	Prepare Estimates for a small scale building.
		CO3	Do survey and site analysis in all respects of a small project
		CO4	Do site supervision and Field Observations.
		CO5	Write Site Visit and Office Reports.
SEMESTER:TENTH			
61	10AR01 PROFESSIONALE LECTIVE-II INDUSTRIAL ARCHITECTURE	CO1	To impart knowledge of planning and design features, materials and techniques useful in industrial structures.
		CO2	Impact of Industrial Revolution on various aspects and its application while in practice or in the Thesis Project.
		CO3	To study the Automation techniques & its impact, circulation and area requirement, influence on design.
		CO4	To study the Pioneers and Architects role in industrial design.

		CO5	To understand Zoning principle, Factories Act and Rules (1948) in India –Role of Pollution Control Boards, organizing principles. Environmental Control & Waste Management.
62	10AR01 PROFESSIONALE LECTIVE–II CLIMATE RESPONSIVE ARCHITECTURE	CO1	To understand the importance and need for Climate Responsive Architecture Design concept.
		CO2	To study the Non-conventional Energy Systems, Solar Thermal Application for heating and cooling.
		CO3	To understand the ideas, issues and concepts of sustainable Architecture and its application in design problems or Thesis.
		CO4	To understand the knowledge of various Passive methods of Construction practices and its application.
		CO5	To study the Planning and Design features to be considered with respect to various Climate.
63	10AR01 PROFESSIONAL ELECTIVE – II (3) VERNACULAR ARCHITECTURE	CO1	To understand the co-relation between manmade and natural forces behind the evolution of traditional architecture.
		CO2	To study various concepts and approaches of Vernacular Architecture, Traditional Principles of Planning in Western & Northern India.
		CO3	To study Vernacular Architectural of South India, Western influences on Vernacular Architecture and Secular Architecture and its application in Design Proposals.
64	10AR02 ARCHITECTURAL PROJECT/THESIS	CO1	A detailed and individual project dealt by the students themselves carrying out and studying all the details and technicalities involved with the project.
		CO2	It is a rigorous and extensive process of an issue based or potential based topic selection, preferably on a workable site. Carry out case studies of related topic, site selection and justification, development of concept and formulating zoning and initial planning.
		CO3	Devising final plans after rigorous discussion sessions with the allotted Guide and finalizing of Structural, technical and Aesthetic Details and preparing a holistic, workable design in itself.
		CO4	Same knowledge and process will be applicable for the Professionals during individual practice.
65	10AR03 SEMINAR	CO1	Choosing a topic which will be indirectly related to Thesis Design Topic.
		CO2	Detailed study of Case illustrations, research and application of the topic.
		CO3	Drawing conclusions and observations from the area of selected study.



!! SHREE GAJANAN MAHARAJ PRASANNA!!

P. R. PATIL COLLEGE OF ARCHITECTURE

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PROGRAMME OUTCOME

PO1. Technical and Professional Skill: Understanding of established concepts, theories and fundamentals that form the primary knowledge base of the architectural profession.

PO2. Design Development: Demonstrating a meaningful analysis and application of the same towards solving various issues and problems of the built environment.

PO3. Critical and analytical thinking: Ability to plan and prepare a comprehensive program for an architectural project and design assessment criteria. Understanding of national traditions and the local/ regional heritage in architecture, landscape design, and urban design, including the vernacular tradition.

PO4. Socially responsible individuals: We seek to serve society through our students by educating and passing on students a set of skills and commitment to social engagement. hence being an architect we should consider societal need and creates such academic environment which enriched through diverse perspectives where all individual can flourish.

PO5. Inculcate research: PRPCOA seek to integrate education, research and service so that each enrich and extends the others. This integration promotes academic excellence and nurtures innovation and scholarly development in our students.

PO6. Use of Modern Tool: Training in the usage of various techniques and tools of the different laboratories of climatology, building materials, model making, surveying and construction techniques. Training towards developing the various graphical communication skills of architecture such as architectural drawing, presentation techniques and architectural drafting: both manual and computer aided.

PO7. Environment and Sustainability: Understanding of the principles of sustainability in making architecture and urban design decisions that conserve natural and built resources, including culturally important buildings and sites, and in the creation of sustainable buildings and communities.

PO8. Ethics: Engage in the process of design and building in the discourse of social, ethical and professional responsibility.

PO9. Individual and team work: Students can effectively work as an individual and as team leader or member in diverse multidisciplinary settings.

PO10. Communication: Making student to Communicate effectively on architectural issues in the architectural profession, and on their perspective towards community and society, also able to write reports, design documentation and presentations.

Principal
P.R. Patil College of Architecture
Kathora, Amravati.

PO11. Project Management and Finance: A sound knowledge base to enable the student to be industry/profession ready through courses on professional practice, urban economics, estimation, construction management and surveying and an opportunity to learn through apprenticeship.

PO12. Lifelong Learning: Demonstrate knowledge of architectural theory and design methodology in the solution of architectural design problems in a global society.

PROGRAM SPECIFIC OUTCOME (PSO)

PSO 1: Demonstrate professional practices learned through internship and solve the problem using technical knowhow acquired and research.

PSO 2: Our graduates must attain statement making architecture respecting local practices, climate, culture in coordination with the society.

PSO 3: The program is oriented to revitalized local art, architecture and culture for sustainable future.

