1. COURSE OUTCOMES FOR B.ARCH

1st year (1st Semester) Bachelors of Architecture			
Subject Code	**Subject Name**	**Course Outcomes**	
1S-A-1	**Architectural Design - I**	CO1	To develop skills of visualisation and its communication through drawings
		CO2	To develop analytical skills and its interpretation
		CO3	To develop skills of representation through various techniques
1S-A-2	**Allied Design Studio -I**	CO1	To develop various manual presentation & drawing skills
		CO2	To recognize and demonstrate 2-D & 3-D composition
		CO3	To recognize and implement design principles
1S-A-3	**Building Construction and Materials -I**	CO1	To identify building materials & its application in construction of various building elements
		CO2	To design & demonstrate building elements & represent through drawings
1S-A-4	**Architectural Graphics-I**	CO1	To develop the skills of visualisation and drawing abilities
		CO2	To recognize different type of scales & various graphical respresentation
1S-A-5	**Structural Design & Systems-I**	CO1	To understand basic knowledge of structural systems used in buildings.
		CO2	To familiarize the concepts of basic structural mechanics.
1S-A-6	**History of Civilisation**	CO1	Understanding the evolution of various styles of art and architecture as a manifestation of climate, culture and socio-political conditions of a place
		CO2	To apply this understanding to analyse architecture as an outcome of Physical factors like geography, climatology, location, Building Materials and available Technology and also the influence of Art, Culture and Society
1S-A-7	**Computer Application-I**	CO1	To develop computer-aided presentation skills
		CO2	To develop the graphical skills through softwares & applications

1S-A-8	Workshop I	CO1	To recognize & demonstrate various tools,processes and materials for architectural model making
		CO2	To recognize workshop rules, safety norms & care in handling various manually operated & motorized tools
1S-A-9	Elective I - Appreciation of Art &	CO1	To understand various types of art & appreciate it in terms of form,content & context through various historical art works
		CO2	To develop the visual perception of art & design & to senstize towards aethetics & techniques used in architecture in the past
	Elective I - Numerical Abilities	CO1	To understand and apply the mathematics & numerical skills to determine aesthetics & design
		CO2	To understand & demonstrate mathematical derivatives in deriving various patterns
	ective -I Presentation ski	CO1	To develop the ability to read and communicate
		CO2	To enhance communication and convincing skills
	Elective -I Sketching& Rendering	CO1	To demonstrate and apply various sketching & rendering techniques
		CO2	To develop various mediums for thinking & exploration
	Elective - I Public Speaking	CO1	To develop the skills to address the crowd
		CO2	To develop visual aids in public speaking

1st year (2nd Semester) Bachelors of Architecture			
Subject Code	**Subject Name**	**Course Outcomes**	
2S-A-1	**Architectural Design II**	CO1	To develop skills of visualisation and its communication through drawings
		CO2	To develop analytical skills and its interpretation
		CO3	To understand various considerations to work out facilitation to enhance spaces and related activities
2S-A-2	**Allied Design Studio II**	CO1	To develop various manual presentation & drawing skills
		CO2	To identify and demonstrate principles of design
2S-A-3	**Building Construction and Materials II**	CO1	To understand various properties and advantages of timber as a building materials & its application in construction
		CO2	To understand and analyse concept of span & its application in making openings
		CO3	To understand various simple foundations for load bearing walls in stone & brick masonary
2S-A-4	**Architectural Graphics II**	CO1	To develop the understanding of graphical projection systems including sections
		CO2	To understand and demonstrate the technique of graphical documentation of a built structure / environment through measured drawing/s.
2S-A-5	**Structural Design & Systems II**	CO1	To make students familiar with the basics of stresses and strains developed in the material.
		CO2	To study simple structural behavior by understanding bending moment and Shear force.
2S-A-6	**History of Architecture I**	CO1	Understanding the evolution of various styles of art and architecture as a manifestation of climate, culture and socio-political conditions of a place
		CO2	To apply this understanding to analyse architecture as an outcome of Physical factors like geography, climatology, location, Building Materials and available Technology and also the influence of Art, Culture and Society
2S-A-7	**Computer Application II**	CO1	To develop the visualization and form development of third dimension through sketch up and other equivalent softwares
		CO2	To understand various advanced computer-aided tools to apply for complex geometry in design

2S-A-8	Workshop II	CO1	To identify & demonstrate various tools, processes and materials for architectural model making
		CO2	To understand & demonstrate various surface finishing techniques
2S-A-9	Elective II - Art and Architecture	CO1	To develop the understanding of design as a multidimensional creative art
		CO2	To develop the understanding of the relations & theories in Art, Design & Architecture with a historical perspective
	ective II - Graphic Designi	CO1	To understand and demonstrate different ways of visual communication
	Elective II - Fundamentals of painting	CO1	To develop the technical skills and the ability to organize the visual elements necessary to communicate concepts and experiences across various media.
		CO2	To develop skills to translate concepts into visual composition
	Elective II - Fundamentals of Sculpture	CO1	To develop the Visual skills by examining a sculpture's formal and sensory qualities
		CO2	To analyze how the elements (i.e. scale, balance, rhythm, proportion, etc.) are organized.
	Elective II - Architectural Photography	CO1	Develop the skills of visual Composition, People & nature, Lighting & color and understand the mechanics of imaging.

2nd year (3rd Semester) Bachelors of Architecture			
Subject Code	**Subject Name**	**Course Outcomes**	
3S-A-1	**Architectural Design - III**	CO1	To analyse and detail various architectural elements in the context of functions, construction techniques, characteristics of material and its implications on architectural form.
		CO2	To develop the understanding of spatial organisation & circulation within and around the built form
		CO3	To develop the conceptual abilities and to respond to the context taking into account various factors like climate, culture etc
3S-A-2	**Allied Design Studio - III**	CO1	To develop various manual presentation & drawing skills
		CO2	To identify and demonstrate principles of design
3S-A-3	**Building Construction and Materials - III**	CO1	To recognize reinforced cement concrete as a building material and its applications in a building.
		CO2	To identify different methods of designing various structural members using reinforced cement concrete.
		CO3	To develop the understanding of concept of spanning and its application in formation of floors
3S-A-4	**Architectural Graphics - II**	CO1	To develop the skills of communicating an architectural idea / proposal through perspective projections, use of shades, graphics etc
		CO2	To develop the skills architectural presentation and rendering techniques.
3S-A-5	**Structural Design & Systems - III**	CO1	To understand various principles of strength of materials like various kinds of simple, shear & bending stresses in beams.
		CO2	To understand the behaviour of different types of arches and Struts.
3S-A-6	**History of Architecture II**	CO1	Understanding the evolution of various styles of art and architecture as a manifestation of climate, culture and socio-political conditions of a place
		CO2	To apply this understanding to analyse architecture as an outcome of Physical factors like geography, climatology, location, Building Materials and available Technology and also the influence of Art, Culture and Society

3S-A-7	Computer Application - III	CO1	To develop drafting skills and design testing methods through various computer softwares
3S-A-8	Climatology	CO1	To develop the understanding of fundamentals of climatology and its relation to human thermal comfort in buildings.
3S-A-9	Elective III- Scale and Proportion	CO1	To develop the skills of judgement, visualisation, proportioning system, & composition
		CO2	To develop the understanding of dimensional relationship
	Elective III- Anthropometrics and Ergonomics	CO1	To develop the understanding of the Statics and measurement of human body, user experience, & human tasks
	Elective III- Rural Architecture	CO1	To underestand various rural construction techniques and planning strategies.
		CO2	To develop sensitivity about the use of natural resources & develop the understanding of climate responsive design.
	Elective III- Traditional Arts and Crafts	CO1	To understand various properties & behavior of materials, generation of creativity & its application
		CO2	To understand & identify elements of particular art and craft form.
	Elective III-Biomimicry	CO1	To develop the understanding of bio mimicry in Architecture.
		CO2	To develop the understanding of various processes that occurs in nature & how the way biological systems solves the problem.

2nd year (4th Semester) Bachelors of Architecture			
Subject Code	**Subject Name**	**Course Outcomes**	
4S-A-1	**Architectural Design IV**	CO1	To understand the relationship between various building systems and design
		CO2	To analyse the integration of building systems with architectural concepts and form generation
		CO3	To develop the understanding of a community setup, its people and their spatial requirements
		CO4	To develop the enquiry for various theories and design process development in architectural design
4S-A-2	**Allied Design Studio IV**	CO1	To develop various manual presentation & drawing skills
		CO2	To identify and demonstrate principles of design
4S-A-3	**Building Construction and Materials - IV**	CO1	To make students learn about various types of floors and flooring material, partitions, panelling and various surface finishes
		CO2	To understand various advanced building construction methods and its applications
4S-A-4	**Surveying and Documentation**	CO1	To develop the skills of locating the object positions in horizontal and vertical planes with desired accuracy as needed for architecture
4S-A-5	**Structural Design & Systems IV**	CO1	To foster the understanding of basic principle of limit state design in RCC structural systems.
		CO2	To develop the understanding of characteristics of soil on structural behavior.
4S-A-6	**History of Architecture III**	CO1	To develop an understanding of the impact on Mughal and Colonial rule in India and on its Architecture
		CO2	To apply this understanding to analyse architecture as an outcome of Physical factors like geography, climatology, location, Building Materials and available Technology and also the influence of Art, Culture and Society

4S-A-7	**Building services I**	CO1	To recognize the importance, installation and working of essential services in buildings and a way building services help in generating a cleaner and healthier built environment.
		CO2	The develop understanding of various I.S. codes related to services.
		CO3	To develop the understanding of functioning of a building wrto services so as to achieve balance of efficient working of a building
4S-A-8	**Climate and Architecture**	CO1	To develop the understanding and application of climatology for design in different climatic conditions with emphasis on tropical climate.
4S-A-9	**Elective IV Regional Architecture**	CO1	Developing understanding of context, its conditions for deriving the regional techniques.
		CO2	To develop the understanding of the impact of culture and customs for particular region on architecture.
	Elective IV Furniture Design	CO1	To develop the critical and anlytical ability to work with the material and process technology.
	Elective IV Design of Building Elements	CO2	To develop an understanding of design elements and principles relative to their use in the architectural design process
	Elective IV Building Bye Laws and DCR	CO3	To develop the understanding of rules and regulations of building construction
	Elective IV Theory of Design	CO1	To develop understanding of Design principles, Development of design vocabulary, generation of creativity & System integration.
		CO2	To acquire understanding of design as a broader field and the changing role of designer in society.
		CO3	To understand various methodologies, theories and models of the design process.
		CO4	To understand in depth the process of creativity as well as to introduce techniques which will enable creative thinking.

3rd Year (5th Semester) Bachelors of Architecture			
SUBECT CODE	**SUBECT NAME**	**COURSE OUTCOME**	
5S-A-1	**ARCHITECTURAL DESIGN IV**	CO1	To understand the Concept of User and Service Interface
		CO2	To Develop understanding of builing rules and regulations among the students
		CO3	Understanding complexity of activities circulation and user on site as well as in building
		CO4	To develop understanding of form and function
		CO5	
5S-A-2	**CONSTRUCTION TECHNOLOGYY AND MATERIAL V**	CO1	Awareness of various kinds of paints and plasters used in building construction, their application and their form of commercial availability
		CO2	Knowledge about various kinds of joints in building construction and methods of water proofing a building
		CO3	Introduction to large span roofing materials and techniques
		CO5	False ceilings in the interiors of a building using arious materials
		CO6	Introduction to advanced RCC foundations lie pile foundation, raft steel grillage etc.
		CO7	Introduction to design considerations to be tae while designin buildings in an earthquae prone zone
5S-A-3	**STRUCTURAL DESIGN AND SYTEMS -V**	CO1	To understand Limit state method of RCC design.
		CO2	To design singly reinforced and Doubly reinforced beam & T Beams.
		CO3	To understand detailed design of shear reinforcement in beams.
5S-A-4	**BUILDING SERVICES II**	CO1	Introduction and design of electrical layout for a single dwelling unit
		CO2	Introduction to plumbing and sanitation layouts for multi dwelling typologies like apartments,, hostel blocks, row houses, etc.
		CO3	Hot water supply system (localised and centralised) in building design
		CO4	introduction and sensitising students to various rain water harvesting techniques
5S-A-5	**ARCHITECTURAL GRAPHICS V (WORKING DRAWING)**	CO1	Study of building byelaws building regulations and development control rules
		CO2	To train the students for preperation of Submission drawings as per the local building byelaws
		CO3	Working drawings required to carry out actual construction work. The graphics of the drawings are with specific reference to the code of practice for architectural and structural drawings

5S-A-6	**THEORY OF ARCHITECTURE II**	CO1	To Study spatial organisation, Principles of Architectural composition and various factors that influence the organisation of form and space
		CO2	Understanding design of horizontal and vertical movement patterns and elements that define character of the building
5S-A-7	**SPECIFICATION**	CO1	To understand the significance of Specification in building construction and design
		CO2	To understand different types of Specification and their applications
		CO3	Method of writing specification using standards for various building elements
5S-AA-1	**ELECTIVE A- COMPUTER APPLICATION II**	CO1	To understand handling of various parametric design software to create building elements.
		CO2	To develop the skill of walkthroughs in design using softwares
		CO3	To create rendered architectural views as a medium to explain your design
5S-AA-2	**ELECTIVE B- LANDSCAPE DESIGN STUDIO**	CO1	To study various Elements and principles of landscape design
		CO2	To study Aspects of outdoor design and site planning in enhancing and improving the quality of building environs, functionally and aesthetically
		CO3	Analysing artistic and technical aspects of designing open spaces at different scales

3rd Year (6th Semester) Bachelors of Architecture			
SUBECT CODE	**SUBECT NAME**	**COURSE OUTCOME**	
	At the end of the course students shall be able to :		
6S-A-1	**ARCHITECTURAL DESIGN V**	CO1	To study complexities and challenges in Designing a building/ campus on a undulating sites.
		CO2	Functional organization of spaces in harmonious response to the surroundings and to climate
		CO3	To understand design limitations and possibilities by incarporating Development Control Regulations, surrounding context, building byelaws and other standard codes
6S-A-2	**CONSTRUCTION TECHNOLOGY AND MATERIAL VI**	CO1	Awareness about different cladding materials used in building construction their form of commercial availability and their installation techniques
		CO2	Exploring Bamboo, mud and ferro cement as alternative materials for building construction
		CO3	To understand high rise structures, giving an overview of different structural techniques and architectural design considerations in designing them
		CO4	Introduction to advance slab systems lie flat slab, coffered slab, lift slab etc.
6S-A-3	**STRUCTURAL DESIGN AND SYSTEMS -VI**	CO1	To understand methods of designing various types of RCC slabs.
		CO2	To understand design of sections in compression & footing design
		CO3	To understand the structural behavior of large span RCC structural frames.
		CO4	Study of IS 1893 for earthquake resistant structures.
6S-A-4	**BUILDING SERVICES III**	CO1	Understanding various automation systems in Building Design
		CO2	To understand Fire safety and preventive measures and providions of fire fighting regulations in Building Design
		CO3	Study of Fire detection systems, smoke detectors, heat detectors and fire alarms , design and location of fire escapes etc.
		CO4	Study and Design of natural and Mechanical ventilation systems in a building
6S-A-5	**ARCHITECTURAL GRAPHICS VI (WORKING DRAWING)**	CO1	To develop a skill of design and detailing of various architectural elements
		CO2	To learn Site development techniques and generating a plan showing various details
		CO3	To understand the fundamentals of Toilet and kitchen and demonstrating those through details showing water supply and drainage layout
		CO4	To understand the concept of Electrical layout showing meter board and power supply lines to different parts of the building and to different equipments

6S-A-6	**DESIGN OF HUMAN SETTLEMENT**	CO1	Understanding and learning about key determinants in the evolution of various settlements from ancient to contemporary
		CO2	Studying the principles of planning theories from the masters
		CO3	Understanding governance in the planning process
		CO4	Housing scenario in India
6S-A-7	**ESTIMATE AND COSTING**	CO1	To know the purpose of estimating and to introduce types of estimates in building construction
		CO2	To develop ability to estimate the quantity and the cost of the building and project from given set of drawings
		CO3	Learn the method of calculating the bill of quantities for single storey structure
6S-AA-1	**ELECTIVE A- COMPUTER APPLICATIONS IN ESTIMATING AND COSTING**	CO1	Learning to create building elements using CAD Software
		CO2	To develop skill in Creating a walk through using various sofwares
		CO3	Create rendered architectural views as a medium to explain your design
6S-AA-2	**ELECTIVE B- MAN ENVIRONMENT RELATIONSHIP**	CO1	To understand natural systems; Complex relationships between the built and natural environments
		CO2	To develop a sensitive approach towards interventions that are in symbiotic relationship with the natural context
		CO3	To understand the Concepts of urban ecology and landscape

4th Year (7th Semester) Bachelors of Architecture			
SUBJECT CODE	**SUBJECT NAME**	**COURSE OUTCOME**	
	At the end of the course students shall be able to :		
7S-A-1	**ARCHITECTURAL DESIGN VI**	CO1	To understand complex Urban Context and parameters that define architectural insertion at an Urban level
		CO2	Addressing to complex typologies, activities, users, specialised and advanced building services, building regulations and construction techniques
		CO3	Site development defining entry/exit points to the site, landscape elements, parking requirements etc.
7S-A-2	**CONSTRUCTION TECHNOLOGY AND MATERIAL VII**	CO1	Understanding advanced and more complex aspects of construction like large span structures introducing space structures shell structures folded plates, space frames etc.
		CO2	Understanding the concept of precast concrete its advantages pointing details modular possibilities in design etc.
		CO3	Introduction to prestressed concrete and their application in building design
		CO5	Introduction to temporary structures various material explorations through design and detailing of a small design problem
		CO5	Understanding Various materials and techniques used in external cladding systems
7S-A-3	**BUILDING SERVICES IV**	CO1	Understanding Concept of Air conditioning, types of air conditioning systems, various design parameters and its applications
		CO2	Understanding Principles of Psychometric and heat transfers
		CO3	Electrical supply system in group housing projects, urban high rise buildings, calculating load and understanding the distribution system
		CO4	To seek Knowledge of electro-mechanical means of vertical transportations in building, standards, meachanism, space calculations, load calculations and architectural implications
		CO5	Knowledge of Escalators and Travolators and various other details
7S-A-4	**STRUCTURAL DESIGN AND SYSTEMS VII**	CO1	To understand the use and application of IS 800 and Steel table.
		CO2	To understand the behavior of large span structures.
		CO3	To design the various members in tension, compression, eccentric sections and sections in bending and torsion.
		CO4	To introduce the design of welded connections.
7S-A-5	**RESEARCH SILLS AND PROJECT INTRODUCTION**	CO1	Encouraging students to Research writing in architecture
		CO2	To Understand different Methods of analysis having a scientific base and thorough investigative research having data availability through primary and secondary sources

	At the end of the course students shall be able to :		
7S-A-6	ACCOUSTICS AND ILLUMINATION	CO1	To realise the importance of behaviour of sound in an enclosed space
		CO2	To understand the carious technical terminologies affecting sound behaviour and its relationship with architectural material
		CO3	To understand the technique in manipulating sound to achieve the desired acoustical comfort
		CO4	To realise the importance of modulation of artificial light in architectural spaces
		CO5	To understand the various technical terminologies affecting progression of artificial lights and its effect on various surfaces
		CO6	To understand the technique in controlling artificial light, to achieve an efficient and aesthetic architectural space
7S-AA-1	ELECTIVE A- LANDSCAPE DESIGN	CO1	To understand various landscape theories and relate it to architectural design
		CO2	Overview of ecological balance
		CO3	To study Impacts of human activities and the need for environmental protection and landscape conservation.
	ELECTIVE A- INTERIOR DESIGN	CO1	To understand various approaches to Design of Interior environment and spaces
		CO2	Creating a design approach to designing interior spaces that function and respond effectively to the clients needs and demands
		CO3	Acquire skills and knowledge in the latest trends in interior materials and techniques by exposure to the present market trends.
		CO4	Preparation of presentation drawings and design details for a residence design or for an office measuring 100/150 sqm
7S-AA-2	ELECTIVE B-URBAN AESTHETICS	CO1	Introducing Urban Planning as a discipline
	ELECTIVE B-URBAN PLANNING	CO2	Introducing to various components of a city and their interdependent roles
		CO3	To understand various Urban form determinants - interpretation of the urban form in different layers
		CO4	The study is carried out on site in an Urban precinct, as a part of the field trip

5th Year (10th Semester) Bachelors of Architecture			
SUBECT CODE	**SUBECT NAME**	**COURSE OUTCOME**	
	At the end of the course students shall be able to :		
10S-A-1	**PROJECT**	CO1	To demonstrate an ability to comprehend the nature of architectural problem and create a brief which sets the frame work for design of architectural project
		CO2	To demonstrate an advanced level design ability to convert the brief set forth earlier into a comprehensive design proposal
		CO3	To articulate and delineate the propositions of design into an architectural solution addressing all the dimensions
10S-A-2	**CONSTRUCTION TECHNOLOGYY AND MATERIAL VIII**	CO1	Introduction to large span structures using various advanced construction techniques
		CO2	Study various defects in Buildings and learn about their remedial methods
		CO3	Learning about high rise building construction
		CO4	Awareness about various changes in terms of space and elemental level alterations in buildings
10S-A-3	**PROFESSIONAL PRACTICE**	CO1	To understand the The architectural profession and the role of professional bodies and statutory bodies
		CO2	To study Code of Conduct and ethics in professional practice and the mandatory provisions of the Architects Act 1972
		CO3	To Understand the concepts of Project Management through tender and contract
		CO4	To study Various means of Setting up an Architectural practice.
10S-AA-1	**ELECTIVE A- URBAN DESIGN (SETTLEMENT STUDIO)**	CO1	Understanding old settlement patterns with its distinctive character influenced by various parameters that include social organisation cultural manifestation political and economic backgrounds environmental context etc.
		CO2	To relate these tangible and the intangible aspects are studied by the student to understand and relate to their built environment
		CO3	The carry out existing live study as part of the field trip by making students work to document, analyse and synthesis the on site data collected