Gujarat University
B. Arch. Syllabus (2015)
Semester – I Content Outline

Code	Subject	Content outline
AR – 101	Studio – I	Introduction to creative exploration of the environment, this studio explores the principles of space making. Imparting the skills of recording the built environment, model making and sketches as tools of expression, the idea of the human body and its measurement, and basic principles of space making.
AR – 102	Building Construction – I	Introduction to building construction and materials – brick, stone, mud, timber **Construction of wall – in these materials, hands on training, site visits** Introduction to various elements of building from foundation to roof. • Construction and the logic of stability as its basis. • Concept of load bearing: Support and Supported building elements **Introduction to Sub Structure and Its Construction Methods**
AR – 103	Structures - I	Understanding and identification of location of forces, bending moment and bending stress in fixed beams, over hanging beams, continuous beams, portal frames etc. • Deflection in simply supported beams and cantilevers with distributed and point loads. • Columns, struts-short and long columns, slenderness ratio etc.
AR – 104	Humanities	• Importance of humanities in the study of Architecture. • Journey of Men from savaged to being civilized. Ancient man's survival through adversities such as climatic conditions and forces of nature. • Inventions of fire and wheel and role of development of shelter. • Formation of group living, formation of settlements and beginning of community living as rural & urban. • Beginnings of society, culture, traditions & civilization and their progressive development through different ages from Paleolithic to contemporary.
AR – 105	Basic Design - I	• To understand basic design elements and principles and exploration of their potential through effective understanding of the same. • Demonstration through drawings and model, elements like point, line, volume, mass, form, scale & proportion with the use of principles of Design such as rhythm, balance, symmetry, movement, harmony, variation, emphasis, value, growth, & texture. • Explore shadows, shapes & pattern to understand positive & negative by the students with drawings and models. • Explore the process of transformation of shape into form.
AR – 106	Architectural Graphic Techniques -I	• Understanding of drawing/drafting as communication tool. • To develop the skill to draw various objects and geometrical forms with the help of drafting tools. • To imbibe the visualization skill of surface development like- folding and unfolding surfaces of various objects. • Line Exercise, Lettering (Gothic, Graphic) • Introduction to Scale and Measured Drawing • various symbols, signs to convey the different materials
AR – 107	Communication Skills	• Understanding importance of effective communication skills through various modes of communication: written, verbal, visual, signs, symbols, body language, expression & freedom. • To exercise written skills to convey ideas, messages, meaning, purpose & need effectively. • To develop presentation skills using the aforesaid mentioned communication modes.

Gujarat University
B. Arch. Syllabus (2015)
Semester – II Content Outline

Code	Subject	Content outline
AR – 201	Studio – II	This course is essential for the students to develop methods to learn basics of designing using different materials, while addressing varied objectives. The particular course aims at developing three-dimension visualization and understanding of spaces. The aim is to create various prototypes that bring together construction, design and anthropometric understanding while demonstrating an ability to learn basics of handling the proportion/ scale, materials
AR – 202	Building Construction – II	**Openings arches and lintels,** Structural difference in the behavior of lintel & arch Concept of span and its application in creating openings in masonry walls with lintels and arches. **Floors and roofs – timber** **Cement steel and concrete** **Introduction to Super Structure and Its Construction of Walls** General idea about walls and Its Functional, Aesthetic and Structural Use Wall Construction and Details using Different Materials.
AR – 203	Structures - II	Concept of the shear force and the bending moment, S.F. and B.M. diagram for cantilever and simply supported beam with various types of loadings. S.F. & B.M. diagrams for beams Centre of gravity, determining the centroid of simple figures. Moment of inertia, its application to sections subjected to bending, determining M.I. of simple and compound sections. Brief discussion on stability, buckling of columns, short and long column, Euler's formula, Effects of end conditions on the buckling load. Simple problems, ways of increasing the capacity of a long column.
AR – 204	History of Architecture -I	Development of various architectural styles with reference to the influencing factors such as Geographical, climatic, religious social and political conditions. • Prehistoric Architecture • Egyptian Architecture • Mesopotamian, Chinese, Japanese • Indus valley , south east civilization, Africa • History of architecture to be studied as history of development of building forms, ornamentation, structural solutions, construction methods, plans and building façades. • To observe and understand the influence of non-physical parameters such as politics, culture, religion, tradition etc. in architecture. • To understand the trade route in Indian subcontinent and its influence in Indian architecture.
AR – 205	Basic Design - II	• Explore volumetric forms demonstrating the understanding of space, volume & mass. • Explore and understand various materials through practical exercise with aim to enhance form. • Demonstration of the effective application of form, function and the co-relations between them.
AR – 206	Architectural Graphic Techniques -II	• Projection of object (Orthographic, Axonometric, Oblique) • 3D views (Perspective – One Point, Two Point, Three Point) • Sections of Solids • Sciagraphy • Rendering Techniques.
AR – 207	Computer Application	Basics of Computer, Introduction to Graphic Presentation softwares, Exercises demonstrating M.S office and presenting reports

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Semester – III Content Outline

Code	Subject	Content outline
AR – 301	Studio – III	The course aims at developing the understanding of relationship of material and form. Design problem shall be a public building and sufficient scope for the following shall be made : - • Material exploration • Climatic conditions • User requirements Design problem shall consider the above and planning Design problem shall also consider methods of construction and materials.
AR – 302	Building Construction – III	Concept of Doors and Windows **Building Materials - Glass, Plastic Different Metals** Finishes – walls , floors and roofs – interior and exterior Flooring and It's Functional And Aesthetic use – its types and method of construction using different materials
AR – 303	Structures - III	• Analysis of fixed Beam by moment area method. • Analysis of Continuous Beam by Clapeyron's theorem. • Analysis of continuous Beam by Moment Distribution Method. • Analysis of Truss – Method of Joints and section (graphical funicular drawings). • Analysis of non-way type Portal frames by Moment Distribution Method. • Analysis of three hinges parabolic Arch.
AR – 304	History of Architecture - II	• Early Indian temple architecture • Architecture of Gujarat in detail • Greek architecture • Roman architecture
AR – 305	Surveying & Leveling	Introduction to surveying and leveling Understanding of various survey and leveling instruments, carrying out surveys of land of medium complexity and preparation of survey plans
AR – 306	Climatology	Effect of climate on man, shelter and environment. Human comfort conditions – Comfort chart, Comfort Zone, Effective temperature, Macroclimate and Micro climate. Effect of landscape Elements on Climate and Architecture. **Impact of climate and building on Ecological balance** Solar radiation and Architecture. Air flow patterns inside buildings and in building layouts. Effect of Humidity on buildings. Thermal effect on building materials. Regional approach in the application of the principals of climate control in the Design of Buildings. Lighting and acoustics
AR – 307	Special Subject -I	Special Subjects can be offered from the suggested list of subjects or considering the requirement and design pedagogy of the institute.
AR – 308	Special Subject -II	

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Semester – IV Content Outline

Code	Subject	Content outline
AR – 401	Studio - IV	This studio will deal with the dwelling environments of a small community, with a focus on the integration of cultural patterns and environmental characteristics in the process of developing an architectural form. It will introduce the ideas of type and typology through the study of correlation between climate-environmental parameters and social-cultural patterns as generators of an architectural space.
AR – 402	Building Construction – IV	**Subterranean, underground structure, basement water tank** **Roof lights , Staircase** **Concept of spanning and its extension in formation of roofs and floors.** Floor – its types and method of construction using different materials such as timber floors, stone, jack arch floors, steel, R.C.C Roofs – its types and method of construction using different materials
AR – 403	Structures -IV	**RCC Structures** • Design of RCC structures by limit state method. • Design of Beams: Singly and doubly reinforced beam. • Design of Slab: One Way slab, Two Way slab, One Way and two way Continuous slab (based on studio drawings). • Design of Column: Axially loaded (only), footing drawing. • Design of Isolated footing (Only axial loaded). • Design of stair case (Waist slab type) (based on studio drawings).
AR – 404	History of Architecture - III	Development of various architectural styles with reference to the influencing factors such as Geographical, climatic, religious social and political conditions. • Indian architecture after early temple period, post Islamic Hindu • Sultanate, Mogul architecture • Renaissance • Baroque • Rococo Style
AR – 405	Building Services – I	Studying services for complex buildings and neighbourhood applying these in Architectural design and preparing layout and details. **Water Supply, Drainage And Sanitations** : • Sources of water supply and method of supply, catchment areas, reservoirs, and their location, control systems, supply for a neighborhood • Water supply for multi storeyed buildings and industrial projects. •Drainage for a small residential unit, storm water drains details of construction, water entrances, gullies, open drains, gradients, ventilation of drains, rainfall maintenance. • Sewage and sewage treatment, plants, connection of house sewers to municipal sewers, sewage disposal scheme for small projects • Garbage disposal
AR – 406	Landscape Design	**Introduction to landscape Architecture** • Designing and execution of proposal a) Analysis of site b) Identification of functional requirements c) Site development d) Hard Surface – materials e) Elements in Landscape design **History of landscape Architecture** a) Moghul b) Renaissance c) 18th century – Brownian d) 19th century – Botanical gardens
AR – 407	Special Subject -I	Special Subjects can be offered from the suggested list of subjects or considering the requirement and design pedagogy of the institute.
AR – 408	Special Subject -II	