

## Syllabus

### FIRST YEAR

#### Semester 1 & 2 Combined for MG University

#### 2011AR 101 - Architectural Design I

##### Objectives

Architectural Design begins as continuation of Basic Design principles now including function, nature of building materials and structural systems as a new language by sensitizing students to the conceptual, visual and perceptual issues involved in the design process.

The Course also prepares ground for the students to understand the nature of built environment, human scale, Basic organizational principles, Design Determinants and Design Disciplines. And also to understand design language, space and form, space- structure- form correlation. The subject forms the foundation of the study of Architecture and is offered in six courses at the end of which the student is expected understand the intricacies of design process.

##### Syllabus

Architectural Design I is to introduce designing of shelters for various functions and human activities based on ergonomic requirements. The knowledge of design as a process is to be imparted through design projects and oriented to develop awareness of relationship between function, space, order, form, materials, color, texture, structural system.

##### Projects

1. Preparation of measured drawings, site visits to explore the various aspects of decision-human scale and its relation
2. Analytical studies of built environment and project exploring space, scale and basic spatial organization (minimum 2 projects)
3. Design of small institutions involving structure- space- form correlation and site- location- form -landscape correlation (minimum 2 projects)

## References

1. Maitland Graves, 'Treat of colour and design'
2. Geoffrey Broadbent "Design in Architecture"
3. Christopher Alexander "Pattern Language"
4. Unwin, Simon, 'Analyzing architecture'
5. James C Snyder, Antony JC "Introduction to Architecture"
6. Neuferts' Architects data

No university examination evaluation will be done as per the manual

## 2011AR 102 - Building Materials And Construction I

### Objectives

The objective is to make the student understand the characteristics of materials, basic principles of construction and elements of building through theory and drawing. It also enables the students to give adequate knowledge about the properties and uses of construction materials and give required exposure to various constructions and the judicious use of materials for construction. The subject is offered in 3 courses by the end of which the student is expected to gain knowledge and understanding of various materials and construction techniques.

### Syllabus

Building Materials and Construction I covers all conventional materials and techniques.

### Module - I (24 Hrs)

Introduction to vernacular and conventional building materials

**Stone:** Classification properties- suitability for construction-various stones used for construction dressing and various finishes in stone masonry-stone decay and preservation.

**Brick:** Raw materials for manufacture-Properties-use-classification- BIS specification- tests-energy and environmental aspects-suitability for construction-mud bricks-stabilizing

**Clay Products and Ceramics:** Tiles-terra cotta-stoneware ceramic materials properties-raw materials for manufacture-uses

**Timber:** Various kinds of Timber-properties- suitability for construction-defects in timber- decay and preservation of timber- BIS specification

Vernacular materials like lime, laterite, surkhi, mud, bamboo, thatch, hay,

coir, coconut leaves and trunk, their study and uses energy and environmental aspects.

### Module - II (48 Hrs)

Understanding of elements of construction and systems in load bearing construction

Walls, Roof and the principles of their construction

**Foundation:** Different type of foundation used for load bearing system Wall footing, Column footing, combined footing, raft etc

**Drawings:** Wall footing, Column footing& combined footing,

**Masonry:** Introduction to masonry: superstructure - Stone masonry - ancient, traditional and modern construction practices - Brick masonry - general principles - construction bonding - types of bonding - relative merits and demerits of different bonds - English and Flemish bond in detail 1, 1 Y2, 2, 2Y2 brick walls - comers, junctions and cross junctions - special bonds like rat trap, herring- bone bonds, decorative brick work-brick jallies.

**Drawings-** English bond I, 1 1/2, 2 brick walls;

Flemish bond 1, 1 1/2, 2 brick walls;

Jallies 1/2 & 1 brick jallies, Details of corners, junctions and all special bonds;

Neat sketches of different types of stone masonry;

**Case study/site study:** Brick masonry, stone masonry and simple foundations.

### Module - III (24 Hrs)

Joinery details in wood (ancient and modern)- Doors-paneled, battened, glazed & sliding. Windows- panelled, battened, glazed, top hung pivoted-gable window, dormer window, bay window, French window.

Terms for various members, fasteners and fixtures used in joinery.

Study of roof structures - wood, steel-trusses-King post truss and Queen post truss-roof terminology-north light details, girders, space frames.

**Drawings -** Wooden joinery details;

Paneled joinery details; sliding doors;

Paneled windows; glazed windows;

Wooden king and Queen post truss; Steel angular and tabular truss; details of roof coverings and gutter details

**Case study / Site study:** Joinery details of wooden doors, windows and ventilators, details of trusses

#### References

1. Harry Parker, "Materials and Methods of Architectural Construction"
2. Mackey, "Building construction"
3. Barry R., "The construction of Buildings (Vol. I-V)"
4. Olin, Harold & Schmidt, "Building Construction - Principles, Material & Methods"
5. Francis Ching, "Building Construction Illustrated"
6. Relevant BIS Codes

#### University Examination Pattern

There will be two sections A & B

A section covers 8 short questions of 5 marks,  
from all modules  $8 \times 5 = 40$

3 questions of 10 marks each from Module I, II, & III  
with choice to answer any two  $2 \times 10 = 20$

B (Drawing) section covers 3 questions of  
20 marks each from Module I, II & III with choice  
to answer any two  $2 \times 10 = 40$

### 2011 AR 103 - History of Architecture

#### Objectives

The objective courses in History of Architecture offered in B. Arch curriculum is to develop the student's appreciation and awareness of the historic significance and richness of tradition and design theories and construction in various civilizations and period of time. The subject is offered in four courses beginning from the prehistoric times and ending in contemporary times.

#### Syllabus

##### Module - 1 (16Hrs)

#### Early Cultures

Architecture as part of culture-understanding the early cultures

Paleolithic age, Ice Age, Neolithic Period-Apollo II Cave-Africa, Wadi Kubbaniyain-Egypt, Pachmari Hills-India, Monte Verde -South America, Clovis Culture-North America, Jomon culture-Japan, Eynan and Ain Mallaha-Africa

##### Module - 11 (24 Hrs)

#### 3500 BC - 1500 BC

Yangshao Culture-China, Indus Valley-India, Predynastic period Egypt, Uruk Period, Mesopotamia, Bronze Age

China Civilization, European Megalithic tombs, Mohenjo- Daro-Harappa, Stone circles, ziggurats, Pyramids, Stone Henge,

#### 1500 BC - 0

Egypt later period, Iron age, Minoan culture Machalilla Culture, Olmec Cultures-cent. America, Holicity of Varanasi-India, Neo-Assyrian Empire-Babylon, Greece-Geometric Period, Archaic Period, Classical Period, Hellenistic Period, Buddha Period-India, Mauryan Empire-India, Eastern Zhou dynasty-China, Preclassic maya Culture-Guatemala.

Sun Temple at Amarna, Hattusas.Poverty Point, Temple of Solomon, Greek Architecture and language, Temple of Apollo, Greek Orders, Asoka Pillar, Tomb of Zeng Hou Yi, Kaminaljuyu

##### Module - 111 (24 Hrs)

#### 0-400 AD

Roman Empire, Maurian Empire, Kushan Empire, Zhou Dynasty-Quin Dynasty-China, Teuchitlan tradition, Pre-classic Maya Culture.

Colosseum , Roman Urban VILLA, Forum of Augustus, Sanchi Complex, Chaithya hall, Great wall of Chaina.

#### 400 AD - 800 AD

Roman Empire, Satvahana and Ikshvaku Dynasties, Kushan Empire, Han Dynasty, Teotihuacan Culture-America, Gupta Period, Byzantine Empire, Sixteen kingdom Period, Kofun Culture-Japan, Hindu Renaissance, Emergence of Christianity, Post- Constantinian Age.

Pantheon, Roman Bath, St.Peters Rome , Han Tombs, Gupta Period Temples, Ajanta Caves, Mahabodhi Temples.

#### References

1. Sir Banister Flecture "A History of Architecture"
2. Francis D.K.Ching et all "A global History of architecture"
3. Percy Brown "Indian Architecture( Buddhist and hindu Periods)"
4. Satish Grover "Buddhist and Hindu architecture in India"
5. Michael Raeburn, 'Architecture of the Western World'

6. History of World Architecture (Series), Vols. Titled "Ancient Architecture, Primitive Architecture, Greek Architecture, Roman Architecture and Byzantine Architecture"

#### University Examination Pattern

There will be two sections A & B

A section will have 8 short questions of 5 marks,  
from all modules - There will not be any choice  $8 \times 5 = 40$

B section will have 3 subsections each covering one module.  
There will be three questions of 10 marks from each  
module of which 2 questions are to be answered  $3 \times 20 = 60$

### AR 11 104 - Structural Design-1

#### Objective

The objective is to equip the Architectural students to understand the structural behavior and material property, give the concept of behavior of structures under loading, make the students aware of the various design forces acting on the structure and acquire deep knowledge about structural systems. The subject is offered in 5 courses, by the end of which the student is exposed to the deep intricacies of Structural Design in various materials and techniques.

#### Syllabus

##### Module - I (20 Hrs)

Forces Force and moment concepts-Force system acting on a body and their resultant Equilibrium concept and free body diagram. Simple Harmonic Motion - Free vibration Single degree of freedom system-Spring in series and parallel.

Simple practical problems related to the above cases.

##### Module - II (22Hrs)

Centre of gravity of planes-Moment of Inertia concept- Theorem of parallel and perpendicular axis- Principle axis and Principle moment of inertia.

Stresses and Strains-General concepts-Stress strain relations-Elastic constants- principle of super position-stresses in composite bars-stresses due to temperature concept of strain energy.

##### Module - III (22Hrs)

20 Beams-different types-support conditions-different types of loads-analysis

of simply supported, cantilever, overhanging beams-Shear force and bending moment diagrams only analytical method

Theory of simple bending-bending stress in symmetrical beams, section modulus, bending of composite beams

Shear stresses in beams its concepts distribution of shear stresses in simple sections

#### References

1. Bansal "Engineering Mechanics"
2. Rajasekharan and Sankara Subramaniom "Engineering Mechanics"
3. Kumar "Engineering Mechanics"
4. Beer and Johnston "Engineering Mechanics"
5. B.C Punmia and Jain "Strength of Materials and Theory of Structures vol 1"
6. Junnarkar "Mechanics of structures"
7. Ramamrutham "Strength of Materials"

#### University Examination Pattern

There will be two sections A & B

A section will have 8 short questions of 5 marks,  
from all modules - There will not be any choice  $8 \times 5 = 40$

B section will have 3 subsections each covering one module.  
There will be three questions of 10 marks from each  
module of which 2 questions are to be answered  $3 \times 20 = 60$

### 2011AR 105 - Basic Design

#### Objectives

The objective is introduce architecture student to the design abilities, Visual literacy and expressional skills and provide comprehensive understanding of design field through observation, visual perception and expression.

#### Syllabus

##### Module - 1 ( 32Hrs)

Introduction to Architecture- meaning -importance relevance. Fundamental elements of design and their definitions point, line, shape, form, structure, space, texture, value and color. Introduction to the

principles of composition unity, balance, symmetry, proportion, scale, hierarchy, rhythm, contrast, harmony etc. Use of patterns in design

**Projects:** Two-dimensional and Three dimensional exercises, sketches, models, group works, involving the above principles

#### Module - 1I (64Hrs)

Students are introduced to Architectural vocabulary, understanding of space, graphic-communication skills, the Relationship between the human body and three-dimensional space-Anthropometrics content in design, methods of measurements, idea of human scale and proportion. Design Fundamentals. Introduction to 2D, Colour concepts, Visual theory.

**Projects:** Two dimensional and Three dimensional exercises, sketches, models, fieldworks, group works, sculpture, discussion and criticism involving the above principles

#### Module - 1II (32Hrs)

Design and expressional skill development through more complex observations, Basic design as applied in the built environment, development of architectural ideas. Visual analysis of built forms, sculptural and spatial qualities, analysis of solid and void relationship. Two-dimensional and three-dimensional presentations. Hands on experience with 3D developed through models sketches, drawing, rendering, formulation of abstracted concepts and logical visual models. Introduction to interior/exterior explorations of forms and spaces. Design process is emphasized.

**Projects:** Emphasis on three-dimensional products involving above principles

#### Reference

1. Kevin Forseth "Graphics for Architecture"
2. William Kirby Lockard "Design Drawing Experiences"
3. Rendow Yee "Architectural Drawing: A Visual Compendium of Types and Methods"
4. Pierre Von Meiss "Elements of Architecture"
5. Paul Jacques Grillo "Form, Function, and Design"
6. William K Lockhard & William Kirby Lockard "Drawing As a Means to Architecture"
7. Eugene Tsui "Evolutionary Architecture: Nature as a Basis for Design"
8. A Peter Fawcett "Architecture Design Notebook"

9. Philip Meggs "Type and Image: The Language of Graphic Design"
  10. Simon Unwin "Analyzing Architecture"
  11. Krome Barratt. "Logic and Design in Art, Science and Mathematics"
  12. Francis D. K. Ching, "Architecture: Form, Space and Order"
- No University Examination - valuation will be conducted as per Manual

### 2011AR 106 - Visual Arts

#### Objective

The objective of the course in Visual Arts is to make the students familiarize with the basic principles and techniques of (a) Drawing (b) Painting and (c) Sculpture. The course also will provide the students a chronological introduction to the developments in the art and architecture of India.

#### Syllabus

#### Module - I (24 Hrs)

##### Fundamentals of Visual Arts:

- (a) Introduction to the Art object, Definition, Interpretation.
- (b) Drawing: Types, Characteristics & functions of Lines, its visual impacts (Vertical, Horizontal, Diagonal, Zigzag, Curvy Liner, Spiral etc.)
- (c) Study of Objects: Study of objects having varied shapes (Cuboids, Prismatic, Spherical, Globular etc.) in different media - Charcoal, Pencils, Pastels. Students may be assigned to prepare studies at home and submit them in the classes.
- (d) Out Door Study: Study of Monuments, Buildings in pencils, ink, charcoal, pastels etc. Study should focus on Architectural details, wherever relevant.

#### Module - II (20 Hrs)

- (a) Elements of Painting
  1. Pictorial & Spatial organizations
  2. Form & Texture in Painting
  3. Theory of Colour: Chromatic Values, Colour Wheel, Colour Chart
  4. Two-dimensional / Three-dimensional aspects of Painting
- (b) Basic Psychological aspects of lines forms and colours unity of Forms: Gestalt theory. Exercises based on above studies.

### Module - III (32 Hrs)

- a) Introduction to Indian aesthetics / Canonical principles of Indian Art, Sculpture, Painting
- b) Mural/Tradition in Kerala - Study of Style, Form & Technique.
- c) Languages, Methods & Techniques of Sculpture
  - i. Form, Texture, Mass, Volume
  - ii. Sculpture in relief, Shallow relief, Sculpture in round.
  - iii. Free standing sculpture in relation to Architectural space
  - iv. Techniques (a) Carving in stone, wood (Additive / Subtractive Processes)
  - v. Techniques (b) Molding & Casting in Plaster, Cement, Fiber Glass

### Reference

1. J.H Bustano by 'Principles of Colour and Colour Mixing'
2. Frank Ching , 'Architectural Graphics', John Wiley, 2002
3. Francis D.K. Ching, 'Drawing, Space, Form, Expression',
4. Victor Perard, 'Anatomy and Drawing'
5. Luis Slobodkin "Sculpture-Principles and Practice"
6. Suzanne Huntington 'Art of Ancient India'
7. Roy C. Craven 'Indian Art'
8. J.C. Harle 'Art & Architecture of the Indian Sub Continent'

### University Examination Pattern

#### Part - A

8 short questions of 5 marks, from all modules -  
There will not be any choice  $8 \times 5 = 40$

#### Part - B

Drawing There will be 3 questions of 30 marks each  
of which two questions to be answered  $2 \times 30 = 60$

### 2011AR 107 - Architectural Graphics

#### Objectives

The objective is to make the student communicate through technical drawings develop visualization power, develop 2-D & 3-D perception through observation and interpretation and stimulate and expand the skill of observing and interpreting an object and its position.

### Syllabus

#### Module - I (33Hrs)

##### Introduction

What is graphics, Bureau of Indian standard (B.I.S various instruments required for drawing, layout of drawing sheet Method of dimensioning and lettering)

##### Scales:

Classification of scales- Representation fraction (R.F)

Construction details of following with examples

- Plain scale
- Diagonal scale
- Vernier scale

##### Conic section

What is conic, Eccentricity, Types of conic. Construction methods Ellipse Construction methods hyperbola & Parabola

##### Miscellaneous curves:

Construction details of following curves:

- Spirals- Archimedean Spiral & Logarithmic Spiral
- Helix Cylindrical & Conical

##### Projection

Introduction, Theory of projection, Systems of projection, Orthographic projection, First angle projection

Projection of points in First, second, third and fourth quadrant.

##### Projection of lines:

Introduction - Line Parallel to both planes - Line Parallel to one plane & perpendicular to the other Projection of lines parallel to one plane & inclined to other - Line inclined to both planes-traces, determination of true length & true inclinations

#### Module - II (36Hrs)

##### Projection of Planes

Projection of plane lamina with surface inclined to one plane

Projection of plane lamina with diagonals inclined to both the planes.

### Projection of solids:

Simple solid in simple position-top& front views Auxiliary projection-Axis inclined to one plane& parallel to other, Axis inclined to both planes Altering the position method and Auxiliary plane method

### Section of solids:

#### Sectional planes

What is a section-sectional top& front view, true shape of section - exercises

Sectional views of solids like cylinders, cones, prism, pyramids& spheres - True shape of section - Sectional views from the true shape of section

### Intersection of surfaces:

Method of drawing intersection between prism& prism, cylinder& cylinder, cone& cylinder

(Cases with mutually perpendicular axes only)

### Development of surfaces:

What is development, Development of simple solids like cylinder, prism, pyramids& cone

### Development of simple cut solids

#### Module - III (27Hrs)

#### Isometric projection:

What is isometric projection, Isometric scale, difference between Isometric projection and Isometric views Method of drawing Isometric projection, Isometric views of solids like prisms, cylinders, and pyramids - Isometric projection of composite solids

#### Perspective projections:

Nomenclature of perspective - Types of perspective projection-One point perspective- two point perspective and three point perspective - Perspective projection of simple solids by visual ray method and vanishing point method.

#### Shades and Shadows:

Shades of points, lines & simple solids on the plane projected by parallel and divergent rays of light and plotting of shade line. - Perspective of shadows of a simple structure on the ground and on a vertical plane when the light is behind the observer.

Visualization of object from pictorial views

Conversion of pictorial views in to orthographic views.

### References

1. N.D.Bhatt, 'Elementary Engineering',
2. Cari LaraSvensan and William Ezara Street, 'Engineering Graphics',
3. K. Venugopal, 'Engineering Drawing and Graphics',
4. S. Rajaraman, 'Practical Solid Geometry'

### University Examination Pattern

General Note:

- (i) First angle Projection to be followed
- (ii) Question paper shall contain 3 questions from each module, Students are required to answer any two questions from each module.
- (iii) Distribution of marks

Module - I	2 x 10 = 20
Module - II	2 x 15 = 30
Module - III	2 x 25 = 50

### 2011 AR 110 - Mathematics

#### Objective

The objective is to make the students understand the importance of Mathematics in architecture and planning as a tool.

#### Module - I (20 Hrs)

**Calculus:** Successive differentiation, nth derivative, Leibniz rule, Curvature, Circle of curvature, volute Application of integration-Area bounded by plane curve- length of plane curves-volume of a solid of revolution- surface area of revolution. (Cartesian only)

#### Module - II (20Hrs)

**Analytic geometry:** Conics, parabola, ellipse, hyperbola, rectangular hyperbola-derivation, properties, Tangents-normal

#### Module - III (24 Hrs)

**Statistics:** Measure of central tendency -Mean, Median, Mode. Measures of dispersion Mean deviation Standard deviation, variance, correlation

coefficient, rank correlation coefficient.-fitting of straight line and parabola by method of least squares.

**Probability distribution:** Probability density function, distribution function, properties, mathematical expectation, mean, and variance. Binomial, Poisson -Mean and variance, Normal distribution.

#### References

1. B.S. Grewal, 'Higher Engineering Mathematics'
2. B.S. Grewal, 'Elementary Engineering Mathematics',
3. M.K.Venkataraman, 'Higher Mathematics for Engineering and Science'.
4. Miller and Freund, "Probability and Statistics for Engineers".

#### University Examination Pattern

There will be two sections A & B

A section will have 8 short questions of 5 marks,  
from all modules - There will not be any choice  $8 \times 5 = 40$

B section will have 3 subsections each covering one module.  
There will be three questions of 10 marks from each  
module of which 2 questions are to be answered  $3 \times 20 = 60$

### 2011AR 109 - Workshop Practice

#### Objective

- To understand the basics of building construction practices
- To create an awareness and understanding of the three dimensional forms.
- To get hands on Experience in construction methods.
- To get an experience in model making methods.

#### Syllabus

**Carpentry** (15 Hrs)- Study of carpentry hand tools and power tools - Introduction to basic carpentry-processes and joints - Different type of wood fastening

**Welding** (15 Hrs) Introduction to welding - Classification of welding - Study gas welding tools and arc-welding tools - Welding joints

**Plumbing** (15 Hrs)- Study of hand tools and special tools, Different types of pipe joints

**Electrical Wiring** (15 Hrs)- Study of materials and tools- Different types of wiring.

**Masonry Concrete** (15 Hrs) Study of tools-construction of walls using different type of bonds. Making of Plain cement Concrete using different mixes.

**Building Model** (21 Hrs)- Detail study of building/ Product model making using materials like Plywood board, Perpex board, Forexsheet, Veneers, Etaflex, Rubber, and Softwood like Balsa wood -Cutting, finishing, painting techniques.

A separate workshop building to be set up with a minimum of 100 Sq mtr areas with a construction yard of equal size adjacent to it. All equipments and tools to make models with stone, bricks, concrete, wood steel, aluminium plastics etc tools plywood, the material given above are to be installed. Special tools and equipment to do carpentry plumbing & electrical wiring to be purchased for setting up the workshop.

No university examination evaluation will be done as per the manual

### 2011AR 108 - Principles of Traditional Architecture

#### Introduction

Traditional Architecture involves the study of ancient principles used in Architecture and planning, their development over the period of time, adaptability in the changed Socio cultural environment. This subject mainly focuses on the development of architecture that has taken place in ancient geographical region comprising of India, Pakistan, Burma, Bangladesh, Part of Afghanistan and Iran which forms ancient Bharatham

#### Objectives

The objective to make the students aware of the rich traditional heritage in Architectural practice, which is very ancient and descriptions are seen in the Vedas itself and to make the students aware how and why these principles have been formulated based on the Indian philosophy of "AHAM BRAHMA ASMI", differentiate between the scientific technical aspects and the Superstitious and to relate these principles in the modern context. The students are expected to make use of these principles in the modern situation. The subject is taught for a period of one year and the students are expected to gain the basic knowledge of Vastusastra.

## Syllabus

### Module - I

Philosophy of Brahmanda and Pindanda-Its physical manifestation in Architecture definition of Vastu-Holistic approach to design System planning principles Guild of Architects Characteristics and qualities Hierarchy and responsibilities of different personnels.

Basic concepts of Vastusastra Universe, Prakrithi and Purusha, Vastupurusha, Mandala, Padams and Padadevatha, Padavinyasam, Sutrams and Murmams their significance in physical planning Design process Selection of Sites, Sectors and their significance in planning fixing cardinal direction planning principles Ayadi formula, concept of veethi 4 veethi and 9 veethi concept in planning minimum width of veethi and its relation to Habitable space - proportionate system-in deferring the space.

Measurements basic Unit- Anthropometrics - Matrangulam Horizontal and vertical measurements - Manangulam or Standard Angulam Its significance in physical aspect - standard scale Variations in scales their significance and usage Actual measurement based on modern scales Both FPS and Metric units.

Talamanan and its use in Iconography Concept of modular planning in residences and temples.

### Module - II

Design of Buildings- concept of Aaroodham its characteristics- Unit house - kettu, Sala- Naming of Salas Design of Salas Different proportions - Gunavistaram, Ishtadeergham Concept of Pariantham and its relation with Ayadi formula Proportion of the Sala both vertical and horizontal Development of Sala by addition and extension Design of Dvisala and Trisala- Nalukettu- Its characteristics - classification w.r. to plan- shape of roof- configuration of roof etc.-Minimum width of Salas - positioning of Nalukettu in Kshetrakhandam - size of Nalukettu w.r. to Kshetrakhandam and vice versa in 4 veethis and 9 veethis - Development of Nalukettu with extensions and additions- difference between kettu and Koottikettu - Higher forms of residences - Ettukettu, Pathinarukettu

### Module - III

Planning of Temples Basic module and its relation to the temple planning Anthahara, Madhydhara and Bahirhara of temples Design of Mahakshetram Panchaprakarams and its relation to the module. Design of Sanctum, Gopuram and other ancillary units Planning of towns and villages with respect to the temple basic principles of Padavinyasam and veethi nirnayam and the adaptation in town planning - System planning

principles followed in town planning Sectors and sub sectors- Holistic approach to planning based on philosophy- Locational aspects of planning Characteristics of towns with respect to location, activity, road pattern Villages planning in Ekakudumbaka Gramam and Bahukudumba Gramam.

### References

1. Manasara - Bhojaraja
2. Mayamata,
3. Samaranganasutradhara, 2 volumes
4. Traditional Residential Architecture of Malabar Coast Dr. Aashaltha Thampuran
5. A text Book of Vastuvidya
6. Manushyalayachandrika Dr. Balagopalan T.S. Prabhu
7. Shilparatna 2 volumes- Sreekumar
8. Tantrasamuchayam Silpabhagam Chennasa Narayanan Namboodirippad

### University Examinati

#### on Pattern

There will be two sections A & B

A section will have 8 short questions of 5 marks,  
from all modules - There will not be any choice  $8 \times 5 = 40$

B section will have 3 subsections each covering one module.  
There will be three Questions of 10 marks from each  
module of which 2 questions are to be answered  $3 \times 20 = 60$