Five Year Degree Course In Architecture Engineering Detailed Syllabus

First Year First Semester

Subject: Materials & Methods of Construction I (Theory), 3 Credits
Semester Examination: Time: 3 hrs. Full Marks: 100, Contact Periods/week: 3,
Internal Assessment: Class Test: 30

Introduction to the subject & Evolution of Building Materials- Definitions - Art,
architecture, structure, materials, construction. A brief introduction on evolution of
building materials by chronological approach, Properties of Building Materials-
Physical properties, Mechanical properties, other characteristics and explanation of
various technical terms used in building industry, Structural Clay Products/ Ceramic
materials- Clay bricks, Brickwork, Calcium silicate bricks, Concrete bricks, Tiles,
Terracotta, Porcelain, Stoneware, Earthenware, Majolica, Glazing, Blocks and Block
work- Concrete blocks, Clay blocks, Block work, Beam and block flooring, Landscape
block work, Wood and Wood products, Rocks and Stones, Lime, Gypsum /
Puzzolanas.

Suggested Books:

2. Engineering Materials, Surendra Singh
3. Building Construction & Materials (Gurcharan Singh)
4. Building Materials & Components (CBRI, Roorkee)
5. Building Construction-Sushil Kumar
7. Construction Technology, R. Chudley, Vol-1,2,3,4
8. The Construction of Building, Barry

Subject: Design Fundamental (Theory), 3 Credits
Semester Examination: Time: 3 hrs. Full Marks: 100, Contact Periods/week: 3,
Internal Assessment: Class Test: 30

Definition of Design: Comparison between designed and non-designed objects.
Appreciation of design criteria; Design as a process, Visual Perception; Light and
Contrast- value, hue, intensity; Visual properties of two-dimensional forms of both
geometric and non geometric surfaces - Line, Shape, Form; Figure-ground relationship;
Principles of two-dimensional composition - Spatial tension, Likeness basis, balance,
movement, scale, proportion, rhythm, dominance and subordination, representation and
association; Visual unity; Geometric ratios and dynamic symmetry; Visual textures and
tonal variations; Colour theory and colour dynamics applied to the above exercises;
Principles of three-dimensional composition applying the basic structure of 2-D
composition – solids, voids, planes, lines, closed and open forms etc.; Inter-relationship
between material, structure & form; **Elementary principles of Architectural Design** on the basis of 3- ‘-ty’s – stability, utility, beauty.

**Suggested Books:**

1. Design Fundamentals, Robert Scott.
2. Form, Space and Order, F.D.K. Ching.

**Subject: Architectural Graphics I (Theory)**  
Semester Examination: Time: 3 hrs. Full Marks: 100, Contact Periods/week: 3,  
Internal Assessment: Class Test: 30

**Introduction to Architectural Graphic Fundamentals:** Lines, lettering and dimensioning, reduction and enlargement of drawings on different scales, Simple Geometrical Constructions, **Orthographic Projections:** Principles and projection methods of orthographic projection (First and third angle projection), introduction to architectural plans, elevations and sections. **Projection of Points, Lines, Planes and solids; Introduction to Section of solids, Development of Surfaces of Solids and Interpenetrations of Solids**

**Suggested Books:**


**Subject: Structural Mechanics I (Theory), 3 Credits**  
Semester Examination: Time: 3 hrs. Full Marks: 100, Contact Periods/week: 3,  
Internal Assessment: Class Test: 30

**Suggested Books:**

**Subject: Mathematics I (Theory), 3 Credits**  
Semester Examination: Time: 3 hrs. Full Marks: 100, Contact Periods/week: 3,  
Internal Assessment: Class Test: 30

**Suggested Books:**
Subject: Freehand Drawing (Sessional); 3 Credits,  
Full Marks – 100, Contact Periods/week: 3

Techniques of drawing lines of various gradations and inclinations  
Finding Visual proportions and principles of perspective  
Free-hand drawing of simple objects in single and group formation  
Free-hand drawing of simple furniture  
Outdoor sketching of natural objects/ buildings/ any relevant structure, etc. Study on shades and shadows, on contrasts of light and on textures.

Suggested Books:

Subject: Basic Design (Sessional); 3 Credits,  
Full Marks – 100, Contact Periods/week: 6

Comparison of designed and non-designed objects; exercises in line, shape, form applied to figure & ground relationships and patterns; Application of colour theories and simultaneous contrast; Two dimensional compositions based on the elements as specified in Design Fundamentals; Three dimensional compositions of simple geometrical forms; Application of design principles in conceiving elementary architectural spaces; Preparation of block models for exercises in three-dimensional composition.

Suggested Books:

Subject: Architectural Graphics I (Sessional); 3 Credits,  
Full Marks – 100, Contact Periods/week: 3

Use of Instruments, Pencils with different grade  
Lines, lettering and dimensioning, reduction and enlargement of drawings on different scales, Simple Geometrical Constructions 2 Sheets  
Orthographic Projections: Projection of Points and Lines 2 Sheets  
Projection of Planes 2 Sheets  
Projection of Solids 2 Sheets  
Section of solids 1 Sheet  
Development of Surfaces of Solids 1 Sheet  
Interpenetrations of Solids 2 Sheets

Suggested Books: Same as Architectural Graphics I (Theory)

Subject: Materials & Methods of Construction I (Sessional); 3 Credits,  
Full Marks – 100, Contact Periods/week: 3

Types of Brick, Brick Masonry and Different Types on Brick Bonding- English Bond, Flemish Bond, Rat-Trap Bond. Stone Masonry, Joinery in Wood Work. 5 Sheets  
Project work and seminar on building materials.
Suggested Books:

Subject: Workshop Practice (Sessional); 3 Credits, Full Marks – 100, Contact Periods/week: 3

First Year Second Semester

Subject: Materials & Methods of Construction II (Theory), 3 Credits
Semester Examination: Time: 3 hrs. Full Marks: 100, Contact Periods/week: 3,
Internal Assessment: Class Test: 30


Suggested Books: Same as Materials & Methods of Construction I (Theory)

Subject: Evolution of Architecture I (Theory), 3 Credits
Semester Examination: Time: 3 hrs. Full Marks: 100, Contact Periods/week: 3,
Internal Assessment: Class Test: 30

Introduction to the Evolution of Architecture and its relationship with Architectural Design and its elements depending on concept, function, distribution of space, structure, and climate, etc.

Suggested Books:

1. A History of Architecture, Sir Banister Fletcher, Butterworth Heinemann /CBS
2. Indian Architecture Vol. 1 (Buddhist & Hindu) / Percy Brown / D.B. Taraporevala
3. Buddhist and Hindu Architecture in India, Satish Grover, CBS
6. The Story of Architecture FROM ANTIQUITY TO THE PRESENT, Jan Gympel, KÖNEMANN

Subject: Architectural Graphics II (Theory) 3 Credits
Semester Examination: Time: 3 hrs. Full Marks: 100, Contact Periods/week: 3,
Internal Assessment: Class Test: 30

Isometric and Axonometric Views: Solids, compositions and buildings, Perspective Drawing: Definition of perspective technique (picture plane, stationary point etc) and their role in drawing perspectives, One point, two point and three point perspectives of geometrical shapes leading to perspectives of built forms, Sciography: Study of shades and shadows cast by simple architectural forms on plain surfaces.

Suggested Books: Same as Architectural Graphics I (Theory)

Subject: Humanities (Theory) 3 Credits
Semester Examination: Time: 3 hrs. Full Marks: 100, Contact Periods/week: 3,
Internal Assessment: Class Test: 30

Suggested Books:

Subject: Structural Mechanics II (Theory), 3 Credits
Semester Examination: Time: 3 hrs. Full Marks: 100, Contact Periods/week: 3,
Internal Assessment: Class Test: 30

Suggested Books:

Subject: Mathematics II (Theory), 3 Credits
Semester Examination: Time: 3 hrs. Full Marks: 100, Contact Periods/week: 3,
Internal Assessment: Class Test: 30

Suggested Books:

Subject: Materials & Methods of Construction II (Sessional); 3 Credits,
Full Marks – 100, Contact Periods/week: 3

Section through Brick and RCC Building showing different elements - Introduction to Foundation, Plinth, Threshold, Sill, Lintel, Roof, Parapet, Coping, etc.
Introduction to Floors and flooring materials. Roof, Pitched roof, Concrete roof, Roof Coverings, Clay tiles, A.C. Sheets etc. 5 Sheets
Project work and seminar on building construction.

**Suggested Books:**

**Subject: Architectural Graphics II (Sessional); 3 Credits, Full Marks – 100, Contact Periods/week: 3,**

- Isometric and Axonometric Views: Solids, compositions and buildings 2 Sheets
- Perspective Drawing: Definition of perspective technique (picture plane, stationary point etc.) and their role in drawing perspectives,
- One point, two point and three point perspectives of geometrical shapes leading to perspectives of built forms, 5 Sheets
- Sciography: Study of shades and shadows cast by simple architectural forms on different surfaces, 3 Sheets

**Subject: Architectural Design I (Sessional); 3 Credits,**

**Full Marks – 100, Contact Periods/week: 9**

- Design exercises related to small structures like Pavilions, Kiosks, Gate houses, Guard rooms, Way-side Bus Stops, Snacks’ Corners, small Cafeteria, small Canteen etc.;
- Study and Analysis of simple functional spaces with respect to activity, form and structure of a small residential building based on areas and dimensions, furniture and fixtures — representation through Bubble Diagram, Plan(s), Elevation(s) & Section(s);
- Small Residences (A-2 category of occupancy of the NBC) like residences of an architect, doctor, lawyer, musician, dancer etc.

**Suggested Books:**

**Subject: Educational Tour I (Sessional); 3 Credits,**

**Full Marks – 100, Contact Days/Semester: 10 days**

The students will submit/present a report on measured drawing/photo-documentation study of Indian architecture, traditional and contemporary, conducted during the educational tour spanning 10 days