University of Engineering and Technology, Taxila
Department of Civil Engineering

Course Title: CE-101 Civil Engineering Drawing

Pre-requisite(s): None

Credit Hours: 1+2

Contact Hours: 1+6


Catalog Data:
Introduction to Engineering Drawing; Conceptual Drawings and Projection System; Architectural Plan, Elevation and Section of a Simple Building; Structural Details of a Simple Building; Architectural and Structural Details of Staircase; Structural Details of Water Tank; Architectural and Structural Details of Boundary Wall; Plumbing, Sanitation, and Roof Drainage Plan of a Simple Building; Electrical Drawings; Types of Civil Engineering Drawings.

Course Objectives:
- To enable students to learn basics of general drawing and civil engineering drawing.
- To understand fundamentals of architectural, structural, plumbing and electrical drawings.

Course Learning Outcomes:
At the end of this course, the student will:

CLO 1: Learn basics of both general engineering drawing and basic civil engineering drawings.

CLO 2: Understand the fundamentals of architectural, structural, plumbing and electrical drawings.

CLO 3: Have skills to (i) produce architectural, structural, & plumbing drawings and (ii) study electrical details/layout.
Course Contents:

1. Introduction to Engineering Drawing and Types of Civil Engineering Drawings
   - Drawing, sketch, painting and map
   - Drawing instruments and their use
   - Type of drawing lines and appropriate uses
   - General rules for drawing lines
   - Gothic lettering
   - Dimensioning
   - Planning of a drawing sheet
   - Drawing types with respect to technicality (Survey plan, contour plan, geotechnical plan, infrastructures drawing, architectural drawing, structural drawing, plumbing drawing, electrical drawing)
   - Drawing types with respect to project execution (Proposals/PC-1 drawing, Submission /Tender drawing, Working /Construction drawing, Completion /As-built drawing)

2. Conceptual Drawings and Projection system
   - Conceptual drawing
   - Projection system and its variables
   - Classification of projections
   - Perspective and parallel projections
   - Oblique projection
   - Axonometric projection (isometric projection)
   - Orthographic projections (First-angle and third-angle projection) and their comparison
   - Importance of line types and rules
   - Glass box concept and six principle views
   - Comparison between isometric and orthographic views
   - Sections, Details behind the cutting plane, Parts not sectioned
   - Scaling

3. Architectural Plan, Elevation and Section of a Simple Building
   - Architectural views (Plan, elevation and section) of a simple building
   - General terminologies and symbols including schedule of opening
   - Architectural design of a house
   - Covered area specification of various development authorities
   - General notes

4. Structural Details of a Simple Building
   - Foundation plan
   - Plinth plan
   - Lintel plan
Civil Engineering Drawing (CE-101)

- Slab plan
- Cross-sectional details of foundation, columns, vertical stiffeners, plinth band, lintel band, lintels, beams and slabs
- General notes

5. Architectural and Structural Details of Boundary Wall and Staircase

- Plan, elevation and section of a boundary wall
- Structural design considerations
- Simple staircase and its components terminology
- Architectural details of a simple stair
- Structural details of a simple stair
- Types of stairs

6. Plumbing, sanitation, and Roof Drainage Plan of a Simple Building

- Typical water supply system
- Water and waste water removal system
- Roof drainage slopes
- Standard Plumbing symbols
- General notes

7. Electrical Drawings of a Simple Buildings

- Typical layout of electrification
- Symbols used for electrical layout
- General notes

Grading Policy:

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<th>Sr. No.</th>
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Student Learning Outcomes:

Upon completion of this course, the student will be able to effectively use various drawing equipments, understand basic drawing techniques and use them to produce civil engineering drawings.
**Course Professional Outcome/Industrial Usage:**

The students will learn an in-depth knowledge and understanding of the principles governing the civil engineering drawing.

**Mapping:**

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<th>PLO’s</th>
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<th>CLO 2 Fundamentals</th>
<th>CLO 3 Skills</th>
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