

## Module (Course Syllabus) Catalogue

### 2023-2024

College/ Institute	Shaqlawwa Technology Institute - Evening	
Department	Architectural Technique	
Module Name	Structural Drawing(1)	
Module Code	STD403 - Morning	
Semester	4	
Credits	4	
Module type	Prerequisite <input type="checkbox"/>	Core <input type="checkbox"/> Assist. <input checked="" type="checkbox"/>
Weekly hours		
Weekly hours (Theory)	( )hr Class	( )hr Workload
Weekly hours (Practical)	( 3 )hr Class	( )hr Workload
Lecturer (Theory)	Assist Lrcturer Saad Talaat Ridha	
E-Mail & Mobile NO.	<a href="mailto:saad.ridha@epu.edu.iq">saad.ridha@epu.edu.iq</a>	
Lecturer (Practical)	Jalal Mohammed Fadhil	
E-Mail & Mobile NO.	<a href="mailto:jalal.mahamad@epu.edu.iq">jalal.mahamad@epu.edu.iq</a>	

# Course Book

<p><b>Course Description</b></p>	<p>The emphasis of drawing by an Autocad software is placed on drawing set-up; creating and modifying geometry; storing and retrieving predefined shapes; placing, rotating, and scaling objects; adding text and dimensions; using layers and coordinating systems in terms of Civil engineering and Architectural drawings.</p>
<p><b>Course objectives</b></p>	<ol style="list-style-type: none"> <li>1. From a selection of sketches, diagrams, drawings, models and oral presentations students will demonstrate             <ul style="list-style-type: none"> <li>○ an understanding of the interplay of form, structure and function in 3D space;</li> <li>○ an ability to analyze structures by dividing it into its organizational, structural, functional and experiential components;</li> <li>○ an understanding of sites and contexts of structures in scales ranging from that of human body to the city.</li> </ul> </li> <li>2. From a selection of short essays, papers and oral presentations students will demonstrate             <ul style="list-style-type: none"> <li>○ an understanding of select works of structures;</li> <li>○ an ability to interpret the works by placing them in their historical, social and artistic contexts;</li> <li>○ an understanding of the symbolic meanings and social consequences of architectural and urban intervention in history and the present.</li> </ul> </li> </ol>
<p><b>Student's obligation</b></p>	<p>Attending the lecture is a fundamental part of the course. You are responsible for material presented in the lecture whether or not it is discussed in the textbook. You should expect questions on the exams to test your understanding of concepts discussed in the lecture and in the homework assignments.</p> <p>It can be very helpful to study with a group. This type of cooperative learning is encouraged; however, be sure that you have a thorough understanding of the concepts besides the mathematical steps used to solve a problem. You must be able to work through the problems on your own.</p>
<p><b>Required Learning Materials</b></p>	<p>Engineering Drawing</p>
<p><b>Assessment scheme</b></p>	<p>16% Mid Term 4% Quiz 40% Assignment sheets (Class+Home) 40% final</p>

<p><b>Specific learning outcome:</b></p>	<ol style="list-style-type: none"> <li>1) Interpreting structural-civil engineering plans.</li> <li>2) Understanding of Building Information Modelling (BIM).</li> <li>3) Ability to use Auto-CAD and drawing instruments.</li> <li>4) Ability to draw structural and civil engineering plans by using freehand and AutoCAD.</li> <li>5) Understanding of general Auto-CAD terminology, coordinate systems, inquiry commands, draw commands, edit commands, dimensioning, block commands, layers, display commands, utility commands, and setting prototype drawings.</li> <li>6) Ability to create designs, drawings, and assemblies of abstract geometrical forms involving real or conceptual objects, and will be able to utilize creativity and visualization skills to solve engineering design problems.</li> </ol>	
<p><b>Course References:</b></p>	<ol style="list-style-type: none"> <li>1. All documents which are related to hand drawing in the lecture notes.</li> <li>2. An Introduction to Drawing for Civil Engineers; A. Elsheikh; McGraw-Hill; 1995.</li> </ol>	
<p><b>Course topics (Theory)</b></p>	<p><b>Week</b></p>	<p><b>Learning Outcome</b></p>
<p>Types of lines and Leveling of Building</p>	<p>Week 1</p>	<p>How to know the dash and solid lines</p>
<p>Introduction of some abbreviations in Structural Engineering</p>	<p>Week 2</p>	<p>Some symbols of concrete, wood, steel , glass, etc</p>
<p>Drawing of some structural sections in houses plan</p>	<p>Week 3</p>	<p>How to know the structural members and drawing</p>
<p>Studying of some introduction in buildings: Foundation Drawing</p>	<p>Week 4</p>	<p>How to draw the separated, combined and Mat foundation</p>
<p>Reinforced of footings</p>	<p>Week 5</p>	<p>How to draw the dowels and reinforcement</p>

Types of Steel Structures	Week 6	Warehouse example, tension and compression members
Longitudinal and transverse sections	Week 7	How to draw the sections for both views
Drawing of Beams	Week 8	Drawing a typical beam with all details
Drawing of Columns	Week 9	Drawing a typical column with all details
Drawing of Slabs	Week 10	Drawing a typical slab with all details
Reinforced details of stairs	Week 11	Drawing a typical stair with all details
Structural Drawing of a typical Manhole	Week 12	Drawing a typical Manhole with all details
Structural Drawing of house building with all details	Week 13	Drawing all sections in house building
Structural Drawing of reinforced concrete structure with all details	Week 14	drawing all details of RC building
<b>Practical Topics</b>	<b>Week</b>	<b>Learning Outcome</b>
Types of lines and Leveling of Building	Week 1	How to know the dash and solid lines
Introduction of some abbreviations in Structural Engineering	Week 2	Some symbols of concrete, wood, steel, glass, etc
Drawing of some structural sections in houses plan	Week 3	How to know the structural members and drawing
Studying of some introduction in buildings: Foundation Drawing	Week 4	How to draw the separated, combined and Mat foundation
Reinforced of footings	Week 5	How to draw the dowels and reinforcement
Types of Steel Structures	Week 6	Warehouse example, tension and compression members
Longitudinal and transverse sections	Week 7	How to draw the sections for both views
Drawing of Beams	Week 8	Drawing a typical beam with all details
Drawing of Columns	Week 9	Drawing a typical column with all details

Drawing of Slabs	Week 10	Drawing a typical slab with all details
Reinforced details of stairs	Week 11	Drawing a typical stair with all details
Structural Drawing of a typical Manhole	Week 12	Drawing a typical Manhole with all details
Structural Drawing of house building with all details	Week 13	Drawing all sections in house building
Structural Drawing of reinforced concrete structure with all details	Week 14	drawing all details of RC building

## Questions Example Design

**Q1)** Draw the typical detail of residential home foundation with all details of reinforcement.

**Q2)** Draw shown Sec. A-A with all details and elevation.

### Extra notes:

Lecturing will be kept to a level necessary to create greater comprehending of the principles and techniques described in the PDF lecture. Students will be actively involved in learning during the class. Also, it is preferred to have your own PC to make more searching for any given subject.

Because each class builds on previous classes, it is necessitating to keep up with assignments. Collaboration on homework is allowed for the purpose of improving learning. Any student may be called upon at any time to present a homework to the class. Homework will be checked for completion. Also late homework will not be possible.

Also having PC will get easy access to homework, report, assignment, and quiz in Moodle

### External Evaluator

As a lecturer I have reviewed the Course Book related to the subject of Estimation for second year, Department of Architectural Technique, Shaqlawa Technical College, I found that the course Book is very good describing the aim and objectives of the subject. Moreover, it is covering all the required syllabus and contents of the course and describes satisfactorily the aspects related to the course.



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Ph.D. in Structural Engineering.

