Ministry of Higher Education and Scientific Research
Supervision and Scientific Evaluation Authority
Department of Quality Assurance and Academic Accreditation

Academic Program Description Form for Colleges and Institutes
Academic Year

University: Shatt Al-Arab
College/Institute: Engineering
Scientific Department: Civil
Date of Form Completion: 01/09/2024

Signature   **Signature**
Name of Head of Department:

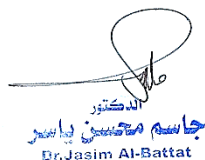Asst. Lecturer Nabeel Najm Abdullah   **Name of Scientific Assistant:** Dr. Jawad Kadhim

Reviewed by:
Quality Assurance and University Performance Division
Name of Division Director: Dr. Jasem Mohsen Yasser

Signature:

Dean's Approval

TEMPLATE FOR COURSE SPECIFICATION

COURSE SPECIFICATION

Gain complete knowledge of modeling differential equations and how to solve them and their physical and engineering applications

1. Teaching Institution	Shatt Al-Arab University -Eng. College
2. University Department/Centre	Civil Engineering Department
3. Course title/code	Theory of Structure 2.
4. Modes of Attendance offered	Class attendance
5. Semester/Year	2nd semester / 3th year
6. Number of hours tuition (total)	60 hrs
7. Date of production/revision of this specification	2024

8. Aims of the Course

It is noted that facilities, buildings and construction projects have developed significantly in recent years, and accordingly, the methods of presenting engineering ideas and plans have developed with them, and there has been a great reliance on modern technologies such as computers and engineering programs in presenting engineering plans. Therefore, this course aims to introduce the student to the methods and tools of paper engineering drawing, how to read plans, and ways to find dimensions or shapes not shown in the plan through some engineering operations and ideas specific to engineering drawing. This course is also considered an important introduction to computer applications specific to engineering drawing, as the civil engineering specialist will not be able to make the most of the computer unless he is fully familiar with the subject of engineering drawing.

9· Learning Outcomes, Teaching, Learning and Assessment Method

A- Cognitive objectives

A1- Clarifying the basic concepts of engineering drawing by defining the tools for drawing and how to use them and how to deduce dimensions and civil shapes from drawings and plans.

A2- Acquiring skills in dealing with on-site engineering problems.

A3- Acquiring basic skills as an introduction to building a successful civil engineer.

A4- Acquiring a basic understanding of engineering designs and their various industrial and construction applications.

B- Course specific skill objectives.
B1- The ability to draw sections and geometric shapes.
B2- The ability to think about finding dimensions and deducing missing shapes for any structure or geometric shape.
B3- Writing detailed scientific reports for engineering plans.
B4- The ability to gain experience in dealing with executive engineering plans.

Teaching and Learning Methods

• Readings, self-learning, panel discussions.
• Exercises and activities in the lecture.
• Homework.
• Directing students to some websites to benefit and develop their capabilities.
• Conducting seminars to explain and analyze a specific issue and find solutions to it

Assessment methods

• Interacting within the lecture.
• Homework and reports.
• Short exams (quizzes).
• Semester and final exams.

C. Thinking Skills
C1- Attention: Arousing the students' attention by implementing one of the applied programs on the display screen in the hall.
C2- Response: Follow up the student's interaction with the material displayed on the screen.
C3- Attention: Follow up on the interest of the student who interacted more with the presented material, by increasing this interaction by requesting other programs and applications to display.
C4 - Forming the direction: meaning that the student is sympathetic to the presentation and may have an opinion about the direction of the presented topic and defend it.
C 5- Formation of value behavior: meaning that the student reaches the top of the emotional ladder, so that he has a stable level in the lesson and does not become lazy or fidgety.

Teaching and Learning Methods
• The usual theoretical presentation method using the writing board and depending on the style (how and why) of the subject and according to the curriculum of the subject. • The theoretical presentation method using the (data show) device and depending on the method (how and why) of the subject and according to the subject curriculum. • The method of laboratory display using special devices for measuring the different properties of the substance under experiment.
Assessment methods
• Direct questions in a manner (how and why) for the subject during the theoretical and practical lecture. • Sudden exams during the theoretical and practical lecture. • Quarterly exams for the theoretical and practical side. • Final exams for the theoretical and practical side.
D. General and Transferable Skills (other skills relevant to employability and personal development) D1- Develop the student's ability to perform the duties and deliver them on time D2 - Logical and programmatic thinking to find programmatic solutions to various problems D3 - developing the student's ability to dialogue and debate D4 - Develop the student's ability to deal with modern technology, especially the Internet

10. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4	Force Methods	Introduction to force methods Force Methods	The Lecture	Class work
2	4	Introduction to method of consistent deformations	Method of Consistent Deformations	The Lecture	Class work and quiz
3	4	Applications to indeterminate beams	Method of Consistent Deformations	The Lecture	Class work
4	4	Applications to indeterminate beams	Method of Consistent Deformations	The Lecture	Class work and quiz
5	4	Introduction to displacement methods and derivation of slope-deflection method	Displacement Methods: Slope-Deflection	The Lecture	Class work
6	4	Application of slope-deflection method to beams and non-sway frames	Displacement Methods: Slope-Deflection	The Lecture	Class work

7	4	Introduction to concepts of stiffness and carry-over	Displacement Methods: Moment Distribution	The Lecture	Class work
8	4	Modified stiffness and application to beams	Displacement Methods: Moment Distribution	The Lecture	Class work and quiz
9	4	Application with support settlement	Displacement Methods: Moment Distribution	The Lecture	Class work
10	4	Application to non-sway frames	Displacement Methods: Moment Distribution	The Lecture	Class work
11	4	Application to non-sway frames	Displacement Methods: Moment Distribution	The Lecture	Class work
12	4	Introduction to strain energy in elastic structures	Energy Methods	The Lecture	Class work and quiz
13	4	Derivation and application of Castigliano's theorem	Energy Methods	The Lecture	Class work
14	4	Deflections using energy methods	Energy Methods	The Lecture	Class work
15	4	Analysis of indeterminate beams and frames using energy methods	Energy Methods	The Lecture	Class work

11. Infrastructure	
1- Required reading: · Books · COURSE MATERIALS · OTHER	Elementary Theory of Structures, Yan-Yu Hseih, Prentice Hall Structural Analysis, R.C. Hibbeler, Prentice Hall
2. Key references (sources)	
A- Recommended books and references (scientific journals, reports ,....	
B- Electronic references, websites	Reputable websites. Libraries sites in some international universities.

12. Course development plan
Adding new subjects to the curricula within the development of the course by no more than 5%. Adding new references