1. Course Name
Structural Analysis I
2. Course Code
CIV052
3. Semester/Year
Second Semester / Third Year
4. Date of Preparation
2025/10/2
5. Available Attendance Methods
In-person
6. Total Study Hours / Total Units
60 theoretical hours / 5 units
7. Course Instructor's Name (If multiple, list all)
Name: Nour Al-Huda Kazem Hussein, **Email: nooralhuda@uowa.edu.iq**

8. **Course Objectives**
1. To understand type of structures and loading. 2. To understand how to check the stability of structures. 3. To understand how to analyze of statically determinate trusses. 4. To understand how to deals with internal forces in structural members. 5. To understand how to compute influence lines for statically determinate structures. 6. To understand how to deals with the applications of influence lines for statically determinate structures.

9. **Teaching and Learning Strategy**

1. To introduce the students to concept of global structural stability.

2. To introduce the classical theory of structural analysis.

10. **Course Structure**

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
1	4	Understand the basic concepts of energy and external work	External Work and Strain Energy	In-person	Discussion
2	4	Understand the principle of virtual work	Principle of Virtual Work	In-person	Written Exam
3	4	Apply the virtual work method to analyze trusses	Virtual Work Method: Trusses	In-person	Written Exam
4	4	Apply the virtual work method to analyze beams and frames	Virtual Work Method: Beams and Frames	In-person	Written Exam
5	4	Understand statically indeterminate structures	Statically Indeterminate Structures	In-person	Discussion
6	4	Learn the force method to analyze structures	Force Method of Analysis: General Procedure	In-person	Written Exam
7	4	Analyze beams using the force method	Force Method of Analysis: Beams	In-person	Written Exam
8	4	Analyze frames using the force method	Force Method of Analysis: Frames	In-person	Written Exam
9	4	Analyze trusses using the force method	Force Method of Analysis: Trusses	In-person	Written Exam
10	4	Understand the general procedures of the displacement method	Displacement Method of Analysis: General Procedures	In-person	Discussion
11	4	Understand slope-deflection equations	Slope-Deflection Equations	In-person	Written Exam

12	4	Analyze beams using the slope-deflection method	Beam Analysis	In-person	Written Exam
13	4	Analyze frames without sidesway using slope-deflection	Frame Analysis (No Sidesway)	In-person	Written Exam
14	4	Analyze frames with sidesway using slope-deflection	Frame Analysis (With Sidesway)	In-person	Written Exam

11. Course Evaluation

- **Mid-term exam 10%**
- **HWs 10%**
- **Quizzes 10%**
- **Technical reports 10%**
- **Attendance sheet 10%**
- **Final Exam 50%**

12. Learning and Teaching Resources

Required Textbook

- ***Structural Analysis*** **by R. C. Hibbeler, Tenth Edition**

Main References (Sources)

- ***Elementary Theory of Structures*** **by Yuan-Yu Hsieh, Second Edition.**
- ***Structural Analysis*** **by Jack C. McCormac.**

Recommended Online Resources

- **YouTube Link**