

Republic of Iraq
Ministry of Higher
Education and Scientific
Research
Supervision and Scientific
Evaluation Apparatus



College: Shatt Al-Arab University
Department: Civil Engineering
Stage: 3rd stage
Lecturer name: Dr. Jawad K. Mures
Academic title: Lecturer

Course Weekly Outline

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|---------------------------|--|-------------------------------|----------------------|-------------------|
| Name | Dr. Jawad K. Mures | | | |
| E-mail address | jawadmures@gmail.com | | | |
| Course name | Theory of Structure-1 | | | |
| Course objective | The course aims to introduce the basic methods in the analysis of statically determinate structures as an introduction to the analysis of statically indeterminate structures and structural design courses. | | | |
| Special Objectives | 1- Understand the general principles of structural theory. 2- Understand how to analyze structural structures and convert internal forces into engineering drawings. | | | |
| References | Elementary Theory of Structures, Yan-Yu Hsieh Structural Analysis, RC. Hibbeler | | | |
| Course assessment | Lab. | Quizzes and assessment | Mid-term exam | Final exam |
| | | 10 | 30 | 60 |
| General notes | | | | |



Course Weekly Outline

| Week No. | Theoretical | Experimental | Aims |
|----------|--|--------------|--|
| 1 | Classification of structures and review of equilibrium | | 1- Providing basic methods in the analysis of statically determined structures as an input to the analysis of statically indeterminate structures and structural design courses. |
| 2 | Review of bending moment and shear force diagrams in beams | | |
| 3 | Bending moment and shear force diagrams in frames | | |
| 4 | Bending moment and shear force diagrams in frames | | |
| 5 | Review of truss analysis | | |
| 6 | Introduction to concept of influence lines | | |
| 7 | Applications on influence lines for beams | | |
| 8 | Applications on influence lines for trusses | | |
| 9 | Applications on influence lines for trusses | | |
| 10 | Determination of maximum reaction for series of moving loads | | |
| 11 | Moment-area method | | |
| 12 | Portal method | | |
| 13 | Double-integration method | | |
| 14 | Singularity function method | | |
| 15 | Approximate method for truss analysis | | |