

Program Engineering

Specialization	Civil Engineering/Building & Constructions
Course Number	20104231
Course Title	Structural Analysis
Credit Hours	2
Theoretical Hours	2
Practical Hours	0

Brief Course Description:

- ❖ **Basic static, Determinacy and Stability of structures, structural analysis of plane trusses, analysis of frames, analysis of beams.**

Course Objectives:

After presenting this course student should:

- 1)Analyze different types of loading**
- 2)Distinguish between determinate structures**
- 3)Analyze different structures**

Detailed Course Description:

Unit Number	Unit Name	Unit Content	Time Needed
1	Basic Statics	Loads, supports and connections Free body diagrams Equilibrium equations Shear and bending moment diagrams	
2	Introduction to structural analysis	Types of structures Analysis and design Structural components	
3	Stability and Static indeterminacy	Geometric Stability Statically Determinate structures Statically indeterminate structures Internally determinate structures Externally indeterminate structures	
4	Analysis of beams	Bending moment and Shear force diagrams Application of super-position principle	
5	Analysis of frames	Analysis of statically determinate frames Shear force, normal force and bending moment diagrams	
6	Analysis of Trusses	Truss notation Methods of truss analysis (joint and section methods)	

Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/---
	Second Exam	20%	--/--/---
	Final Exam	50%	--/--/---
Homework and Projects		10%	
Discussions and lecture Presentation			

Teaching Methodology:

Lectures

Textbooks & References:

Structural analysis R.C. Hibbler fourth edition,2002

References:

علم الإنشاءات البرفسور د. اودونه 2000