The Hashemite University
Faculty of Engineering
Civil Engineering Program
Course Syllabus

Course Title:	Structural Analysis	**Course Number:**	110401315
Designation:	Compulsory	**Prerequisite(s):**	110402212
Instructor:	Dr. Mai Aljaberi	**Instructor's e-mail:**	maia@hu.edu.jo
Office Hours:	8:30 AM –9:30 AM; Sun., Tue.&Thurs		

Course Description (catalog): Structural forms, reactions, determinate structures, degree of determinacy, shear and moment diagrams for beams and frames, influence lines for beams, deflections (double integration method, principle of virtual work and conjugate-beam methods), Analysis of indeterminate structures by approximate methods (force method, moment distribution method, stiffness method (trusses, beams, and frames)).

Textbook(s) and/or Other Supplementary Materials:

Hibbeler, R. C. "Structural Analysis." Pearson Prentice Hall, 10th Edition.

References:

Kenneth Leet, Chia-Ming Uang, et al. "Fundamentals of Structural Analysis." McGraw-Hill, 5th Edition.

Major Topics Covered:

Topics	No. of Weeks	Contact hours*
Types of Structures and loads.	1	3
Analysis of Statically Determinate Structures (Beams and Frames).	2	6
Analysis of statically Determinate Trusses.	1.33	4
Internal Loadings Developed in Structural Members	1.67	5
Deflections: Double integration , principle of virtual work and conjugate-beam methods.	3	9
Analysis of statically indeterminate structures by force method.	1.67	5
Displacement method of analysis (Moment Distribution)	1.67	5
Truss analysis using stiffness method	1	3
Beam analysis using stiffness method	1	3
Frames analysis using stiffness method	0.67	2
Total	15	45

*Contact hours include lectures and exams

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Specific Outcomes of Instruction (Course Learning Outcomes): After completing the course, the student will be able to:

1. *An ability to identify, formulate, and solve engineering problems dealing with determinate and indeterminate structures* (Trusses, beams, and Frames).

#	Outcome Description	Contribution
	General Engineering Student Outcomes	
1.	an ability to apply knowledge of mathematics, science, and engineering	
1.	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	H
2.	an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	
3.	an ability to communicate effectively with a range of audiences	
4.	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	
5.	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	
6.	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	
7.	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies	
	H=High, **M**= Medium, **L**=Low	

Grading Plan:

Homework	20 Points	
Mid Exam	30 Points	
Final exam	50 points (Comprehensive)	Scheduled by the University

General Notes: Beware of Plagiarism: copying and handing in for credit someone else's work.
Any plagiarism case will result in an automatic 'F' for the course

Prepared by: Dr. Mai Aljaberi Date: 6th October. 2022