Jordan University of Science and Technology

Faculty of Engineering

Civil Engineering Department

CE434 Steel Design - JNQF Level: 7
Summer Semester 2023-2024

Course Catalog
3 Credit Hours. 3 Credit hours (3 h lectures). Introduction to steel structures and practical design methods. Steel sections. Load factors and load combinations. Design of various steel elements using LRFD-method. Design of tension and compression members, Elastic and inelastic stiffness of columns. Beam design: Compact section criterion, lateral-torsional buckling, lateral supports, and various design aspects of beams. Design of steel members subject to biaxial moments. Design of simple bolted (or welded) steel connections.
Teaching Method: On Campus

Text Book	
Title	Structural Steel Design-LRFD Method
Author(s)	J. C. McCormack
Edition	5th Edition
Short Name	Text Book
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Text Book	Manual of Steel Construction	AISC	14th Edition	
Ref #1	Steel Structures: Design and Behavior, Emphasizing Load and Resistant Factor Design	1. Charles G. Salmon, and John E. Johnson	4th Edition	
Ref #2	Design of Steel Structures	E. Gaylord, C. Gaylord and J. Stallmeyer	5th Edition	

Instructor	
Name	**Prof. Rajai Al rousan**

Office Location	C2L3
Office Hours	
Email	rzalrousan@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun, Mon, Tue, Wed : 08:30 - 10:00 Room: C3016

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
233710	CE371 Building Construction	Prerequisite / Study
234310	CE431 Structural Analysis (2)	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Weeks 1, 2, 3	Introduction to steel structures	
Weeks 4, 5, 6	Design of tension members	
Weeks 7, 8, 9	Design of compression members	
Weeks 10, 11, 12, 13	Design of beam structures	
Weeks 14, 15	Design of simple connections	
Weeks 15, 16	Steel project	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Understand the concept and the mechanics of steel design [4SO1] [1L7K1]	20%	
Analyze and design tension and compression members, beams, beam-columns and simple connections [2SO2] [1L7S1]	40%	
Use computer software (PROSSAD) for the analysis and design of steel Structures [1SO2, 1SO6] [1L7C1]	20%	
Develop engineering judgment to design safe and efficient structures [1SO3] [1L7C4]	20%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
20	50	20			10	

Relationship to NQF Outcomes (Out of 100%)			
L7K1	L7S1	L7C1	L7C4
20	40	20	20

Evaluation	
Assessment Tool	**Weight**
Final Exam	40%
First Exam	25%
Second Exam	25%
Project	10%

Policy	
Steel Project	Should be submitted to TA at beginning of week #14

Date Printed: 2024-07-02