

GAU, Faculty of Engineering

Course Unit Title	Design of Steel Structures II	
Course Unit Code	CVEN312	
Type of Course Unit	Compulsory, All civil engineering students	
Level of Course Unit	3rd Year BSc	
National Credits	3	
Number of ECTS Credits Allocated	5 ECTS	
Theoretical (hour/week)	3	
Practice (hour/week)	-	
Laboratory (hour/week)	-	
Year of Study	3	
Semester when the course unit is delivered	6	
Mode of Delivery	Face to face	
Language of Instruction	English	
Prerequisites and co-requisites	CVEN311	
Recommended Optional Programme Components	Basic background in engineering mechanics and strength of materials	
Objectives of the Course:		
<ul style="list-style-type: none"> ➤ Analysis and design of compression members;single, built-up members ➤ Design of base plates ➤ Introduction to design of beams 		
Learning Outcomes		
When this course has been completed the student should be able to		Assesment.
1	Analyse the compression members	1
2	Understand the behaviour and design of compression steel members	1
3	Understand and analyse moment frames	1
4	Determine the effective length factor	1
5	Design base plates	1
6	Understand basics of beam design	1
Assesment Methods: 1. Written Exam, 2. Assignment 3. Project/Report, 4.Presentation, 5. Lab. Work		
Course's Contribution to Program		
		CL
1	Ability to understand and apply knowledge of mathematics, science, and engineering	4
2	Ability to design and conduct experiments as well as to analyze and interpret data	1
3	Ability to work in multidisciplinary teams while exhibiting professional responsibility and ethical conduct	1
4	Ability to apply systems thinking in problem solving and system design	4
5	Knowledge of contemporary issues while continuing to engage in lifelong learning	2
6	Ability to use the techniques, skills and modern engineering tools necessary for engineering practice	4
7	Ability to express their ideas and findings, in written and oral form	1
8	Ability to design and integrate systems, components or processes to meet desired needs within realistic constraints	4
9	Ability to approach engineering problems and effects of their possible solutions within a well structured, ethically responsible and professional manner	4
10	Ability to manage time and resources effectively and efficiently while carrying out civil engineering projects	4
11	Ability to combine knowledge from different areas of civil engineering for problem solving and system design with an ethical and sustainable approach	4
CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate 4: High, 5:Very High)		

Course Contents		
Week		Exams
1	Introduction to compression members	

2		Analysis of compression members	
3		Design of compression members	
4		Design of compression members; braced members	
5		Design of compression members; built-up	
6		Design of compression members; built-up members	
7		Revision and class exercises.	
8		Analysis of moment frames	
9			Mid Term
10		Analysis of moment frames	
11		Design of compression members in frames	
12		Design of base plates	
13		Introduction to design of beams	
14		Revision	Quiz
15			Final

Recommended Sources

Textbook: McCormac, J.C. and Csernak S. F., Structural Steel Design. 5th ed. Prentice Hall. ISBN-13:978-0-13-607948-4.

Supplementary Material (s): Segui, W.T. Steel design. 5th ed. Cengage Learning, 2013. ISBN-13:978-1-111-57600-4

Assessment

Attendance	-	
Laboratory	-	
Midterm Exam (Written)	35%	
Quiz (Written)	20%	
Final Exam (Written)	45%	
Total	100%	

ECTS Allocated Based on the Student Workload

Activities	Number	Duration (hour)	Total Workload(hour)
Course duration in class (including the Exam week)	15	3	45
Labs and Tutorials	-	-	-
Assignments	-	-	-
Project/Presentation/Report Writing	-	-	-
E-learning Activities	-	-	-
Quizzes	1	8	8
Midterm Examination	1	14	14
Final Examination	1	22	22
Self Study	14	4.5	63
Total Workload			156
Total Workload/30 (h)			5.2
ECTS Credit of the Course			5