

ACADEMIC YEAR	2019-20	SEMESTER	Fall Semester
Course Code	CVEN441	Course Title	Design of Steel Structures
Credit hours	3	Level of study	Year 4
College / Centre	COE	Department	CVEN
Co-requisites	Engineering	Pre-requisites	CVEN340

1. COURSE OUTLINE

This course discusses loads on steel structures and properties of steel and common steel sections, behavior of steel structures in tension, compression, design steel beams, columns, frames, connections, etc.

2. AIMS

The aim of this course is to gain a clear understanding of the essentials of structural steel design and to acquire the ability to apply these knowledge to typical projects from a practical perspective.

3. LEARNING OUTCOMES, TEACHING, LEARNING AND ASSESSMENT METHODS

Learning Outcomes (Definitive)	Teaching and Learning methods (Indicative)	Assessment (Indicative)
Upon successful completion of this course. Students will be able to:		
1. Describe the advantages and disadvantages of steel structural systems for buildings	Lecturer, Presentation	<i>Assignment, Midterms, and Final Exam</i>
2. Describe and apply steel design procedures, philosophies and standard design practice	Lecturer, Presentation	<i>Assignment, Midterms, and Final Exam</i>
3. Apply structural component limit states under various loading conditions	<i>Lecturer, Presentation</i>	<i>Assignment, Midterms, and Final Exam</i>
4. Select appropriate steel sections for tension members, compression members, beams, beam-columns	<i>Lecturer, Presentation</i>	<i>Assignment, Midterms, and Final Exam</i>

4. ASSESSMENT WEIGHTING

Assessment	Percentage of final mark (%)
Quizzes	30
Mid-term Examination	20
Assignments	20
Final Examination	30
TOTAL	100

5. ACHIEVING A PASS

Students will achieve 03 credit hours for this course by passing [ALL](#) of the course assessments and achieving a **minimum overall score of [50%](#)**.

6. COURSE CONTENT (Indicative)		
WEEK	LECTURE TOPIC	TIME (HOURS)
1	Introduction	1.5
	Introduction to steel structures	1.5
2	Introduction to steel structures	1.5
	Introduction to steel structures	1.5
3	Design methods, load combinations, gravity load	1.5
	Design methods, load combinations, gravity load	1.5
4	Design methods, load combinations, gravity load	1.5
	Design methods, load combinations, gravity load	1.5
5	Tension members	1.5
	Tension members	1.5
6	Tension members	1.5
	Tension members	1.5
7	Compression members	1.5
	Compression members	1.5
8	Compression members	1.5
	Compression members	1.5
9	Noncomposite beams	1.5
	Noncomposite beams	1.5
10	Noncomposite beams	1.5
	Noncomposite beams	1.5
11	Compression members under combined axial and bending loads	1.5
	Compression members under combined axial and bending loads	1.5
12	Compression members under combined axial and bending loads	1.5
	Bolt connections	1.5
13	Bolt connections	1.5
	Bolt connections	1.5
14	Weld connections	1.5
	Weld connections	1.5
15	Weld connections	1.5
	Summary	1.5

	TOTAL HOURS	45
1 - 15	Plus RECOMMENDED INDEPENDENT STUDY HOURS	90
	TOTAL COURSE HOURS	135

7. RECOMMENDED READING

Core text:

Morris, L.J., and Plum, D.R. (1996). *Structural steelwork design to BS5950*, 2nd edition. Longman, ISBN 0582230888, 9780582230880.

Online Resources:

<https://www.pdfdrive.com/design-of-structural-elements-concrete-steelwork-masonry-and-timber-designs-to-british-standards-and-eurocodes-3rd-edition-e161506416.html>