Steel Structures

Course Code	Credit Hours
CE-417	2-0

Course Description

This course is designed to give the basic understanding of member behaviour and design of structural steel members. The design is limited to tension and compression members, flexural members including beams and column and design of connections. Design of roof trusses are also included in this course. The subject also introduces state of the art analysis and design software use in the industry.

Text Book:

1.   Structural steel design By Jack C. McCormac, Latest Edition.

Reference Book:

1.   Steel structures: design and behaviour: emphasizing ASD/LRFD methods by Charles G. Salmon, John E. Johnson, Faris Amin Malhas, 2009 Pearson Education, Inc, Pearson Prentice hall, new jersey

2.   Simplified design of steel structures: By James E. Ambrose, Harry Parker,1997 John Wiley & sons Inc

3.   Steel structures By Zahid Ahmad Siddique

4.   Steel Design by William T. Segui. Fifth Edition

Prerequisites:

Nil.

ASSESSMENT SYSTEM FOR THEORY

	Without Project (%)	With Project/Complex Engineering Problems (%)
Quizzes	15	10-15
Assignments	10	5-10
Mid Terms	25	25
Project	-	5-10
End Semester Exam	50	45-50

ASSESSMENT SYSTEM FOR LAB

Lab Work/ Psychomotor Assessment/ Lab Reports	70%
Lab Project/ Open Ended Lab Report/ Assignment/ Quiz	10%
Final Assessment/ Viva	20%

Teaching Plan

Week No	Topics/Learning Outcomes
1-2	Introduction to steel structures, Design Philosophies, Lateral Loads, Dead and Live loads
3-4	Analysis of Tension Members
5-6	Design of Tension Members
7-8	Analysis of Compression Members
9	**Mid Semester Exam**
10-11	Design of Compression Members
12	Analysis of Flexural Members
	Using AI to predict local buckling capacity of steel columns
13	Design of Flexural Members
14	Introduction to Beam Columns and Flexure – Axial Interaction
15-16	Analysis and Design of Simple Welded and Bolted Connections
17-18	**End Semester Exam**

Practical: Nil