İstanbul Technical University – Department of Architecture

MIM 253E – Steel Structures 22222

Course Syllabus | 2019-2020 Spring Semester

Course Day and Hour : Tuesday, 13:30-15:30
Course Room :
Course Credit :
Course Web Site :

Course Instructor: Dr. Haluk Sesigür
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Office no: 103

Course Assistant/s:
e-mail:
Office no:

Course Description

Within the context of the course; properties of steel as a structural material, sections used in steel structures, Load and Resistance Factored Design/Allowable Stress Design, Design of Steel Structural members under tension, compression and bending effects, Connection (Hinged and moment resisting connections) design, Design of steel trusses, Frames, Steel Slab systems, Arrangement of bracings in vertical and horizontal planes, Composite Structures, Tall Steel Buildings are given with examples of various real buildings. At the end of the course, students are expected to be capable of configuring proper steel structural system.

Course Structure and Plan

Course Plan

WEEK	DATE	TOPIC
1	11.02	Introduction Mechanical Properties of Structural Steel
2	18.02	Bolted Connections
3	25.02	Welded Connections
4	03.03	Problem Solving Session
5	10.03	Tension Members
6	17.03	Compression Members
7	24.03	Problem Solving Session
8	07.04	Midterm Exam
9	14.04	Design of 2D Steel Trusses
10	21.04	Beams
11	28.04	Earthquake Resistant Steel Structural Systems
12	05.05	Steel Tall Buildings and Diagrid Structures
13	12.05	Composite Structures, Architecturally Exposed Structural Steel (AESS)
14	19.05	National Holiday

Recommended Readings

1. **Architect's Guidebooks to Structures: Steel Design,** Paul W. Mc Mullin, Jonathan S. Price and Richard T. Seelos, ©2018 , Taylor & Francis.
2. **Understanding Steel Design,** Terri Meyer Boake, ©2012 Birkhauser
3. **Diagrid Structures, Systems, Connections, Details,** Terri Meyer Boake, ©2014 Birkhauser
4. **Architecturally Exposed Structural Steel, Specifications, Connections, Details** Terri Meyer Boake, ©2015 Birkhauser
5. **Ductile Design of Steel Structures,** Michel Bruneau, Chia-Ming Uang, Rafael Sabelli, ©2011, McGraw-Hill.

Course Assessment

Assessment criteria is based on the scores of two homework assignment, one mid-term exam and one final exam.The effect of the homework assignment score and the mid-term exam score on the total mid-term score is 20% and 80%, respectively. In order to qualify for the final exam, course attendance should not be below 70% and at least 40 points out of 100 must be obtained as the total mid-term score. The effect of the total mid-term score and the final exam score on the overall success grade is 40% and 60%, respectively.

Total mid-term score: 80% one mid-term exam score, (10% +10%) two homework assignment score
Qualification for the final exam: 70% course attendance and min. 40 points out of 100 as total mid-term score
Overall success grade: 40% total mid-term score, 60% final exam score

Contributors

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