

Istanbul Technical University – Department of Architecture
MIM 126E –Strength of Materials, 22097 (22098,22100)
Course Syllabus | 2019-2020 Spring Semester

Course Day and Hour : Wednesday, 08:30-10:30
Course Room :
Course Credit : 2
Course Web Site : https://nirnova.itu.edu.tr/tr/dersler/mimarlik-fakultesi/10110/mim-126e/

Course Instructor: Dr. Haluk Sesigür, Dr. Öğretim Üyesi Cenk Üstündağ, Dr. Gülseren Erol Soyöz
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Course Assistant/s:
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Office no:

Course Description

Within the context of the course the following subjects are given; concept of stress and strain, stress strain relationship of various materials of structural members, internal force distribution in structural systems, Simple and combined internal effects in structural members, buckling problem under compression are given with some examples of timber, masonry and steel buildings. At the end of the course, students are expected to be capable of designating safe cross sections of various load bearing systems.

Course Structure and Plan

Course Plan

WEEK	DATE	TOPIC
1	12.02	Introduction Internal Forces, Stress and Strain, Mechanical Properties of Materials
2	19.02	Internal Force Diagrams
3	26.02	Internal Force Diagrams
4	04.03	Problem Solving Session
5	11.03	Axially Loaded Members
6	18.03	Shear Force
7	25.03	Torsion, Problem Solving Session
8	08.04	Midterm Exam
9	15.04	Pure Bending
10	22.04	Combined Bending and Shear
11	29.04	Deflection of Beams
12	06.05	Combined Bending and Axial Force
13	13.05	Buckling
14	20.05	Problem Solving Session

Recommended Readings

1. **Mechanics of Materials, SI Edition, 9/E**, Russell C. Hibbeler, ©2014 , Prentice Hall
2. **Statics and Strength of Materials for Architecture and Building Construction**, Barry Onouye & Kevin Kane, ©2012 Prentice Hall
3. **Principles of Structures, 5th Edition**, Ken Wyatt, Richard Hough, ©2013, UNSW Press
4. **Basic Structures For Engineers & Architects**, Philip Garrison, ©2005, Blackwell Publishing

Course Assessment

Assessment criteria is based on the scores of one 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% mid-term exam score, 20% homework 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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