

Experimental Methods in Engineering MAK 411E

Lecture 1 – Course Overview

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Course Goals:

1. To provide students with theory and hands-on laboratory experience
2. To teach students to design and analyze experiments for engineering systems
3. To provide students with practical illustration of concepts taught in the core classes.
4. To teach students how to plan and execute an experimental investigation and compare with analytical results.
5. To teach students to present results in the form of technical reports.
6. To teach students how to present results in a poster format and give oral presentation.
7. To teach students to work in teams.

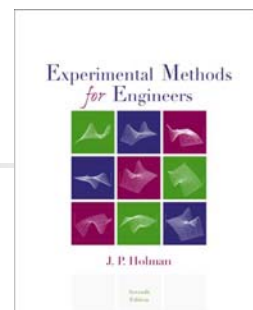


Course Overview:

- Lecture hours: Friday 14-17 (D 318)
- Laboratory hours: TBA
- Office hours: Wed. 15-17, Fri. 10-12 (Ayazaga)
- Course info:
<http://www.mkn.itu.edu.tr/~akalin/classes.html>



Textbook:



- **Experimental Methods for Engineers, J. P. Holman, McGraw-Hill, 2000.**



Course plan

Week	Topics
1	Lab. safety rules, report writing
2	Review of experimental methods, uncertainty and error analysis
3	Planning and Theory of experimental design
4	Lab 1 (Heat Transfer or Thermodynamics MAK 212 or MAK 311)
5	Lab 2 (Fluid Mechanics- AKM 204)
6	Lab 3 (Machine Theory- MAK 322)
7	Lab 4 (Strength of Materials - MUK 201)
8	Lab 5 (System Dynamics and Control - MAK 331E)
9	Lab 6 (Vehicle Technology – MAK461E)
10	Lab 7 (Internal Combustion Engines - 493E)
11	Term Project Design and Midterm exam
12	Term Project Design
13	Term Project Design
14	PROJECT POSTER and PRESENTATION



Grading

Midterm exam	1	% 20
Quizzes	5	% 10
Laboratory Work	5	% 20
Automotive Laboratory	2	% 10
Project	1	% 40 (Report + Presentation)