ME 408-INNOVATIVE ENGINEERING DESIGN AND APPLICATION (2 4 4)
2014-2015 Spring
Course Syllabus

Instructor: Asst.Prof.Dr.Turgut AKYÜREK
e-mail: turgutakyurek@cankaya.edu.tr
Office: LA18
Office Telephone: 2331303
Lecture Hours: Tuesday 09:20–11:10 @M101,
Tuesday 12:20–16:10
Office Hours: Thursday 09:40-10:30. Appointments are accepted.

Web site: http://me408.cankaya.edu.tr

Course Description: This course is a project based synthesis of the methods of Mechanical Engineering covered in other courses. Teams of students and professors work on real-world projects sponsored by industry to develop implementable solutions. This course is the extension of ME 407. Project teams aim to implement the system designed in ME 407. Implemented systems are then tested for verification.

Course Objectives:

The student will

1) Determine the materials and manufacturing processes required to implement the design.
2) Manufacture the machine or product.
3) Design and devise an experimental set up to observe the operation of the implemented design.
4) Analyze the experimental data and interpret the results.

Course Material: Text Books are:

"Engineering Design, 5th Edition Dieter, Schmidt, McGraw-Hill, 2013, ISBN 978-0-07-132625-4."

"The Mechanical Design Process, 4th Edition Ullman, McGraw-Hill, 2010, ISBN 978-0-07-297574-1."

Templates of the reports will be posted on course's web site at the beginning of each report. It is strictly recommended that the students review the templates and fill in them in parallel with the lectures.

Teaching Policy: Supervisors must visit the firm together with the students and meet at least two hours with the students at every week.

In this project, the implementation is the main goal. Without implementation, the project will be evaluated as unsatisfactory.

Two final presentations (in English and in Turkish) are done. Final report (in English) and an (Turkish) executive summary are submitted. A poster is prepared for each project and the project is to be publicized.

Examinations: There will be no examination, but 4 project reports, 1 manufactured model, 1 oral presentation and 1 poster and demo session.

Assignments: There will be 4 project report. They will be filled in using the templates provided at the web site of the course.

Attendance: According to the university regulations, students must attend at least 70 % of the lecture hours. Otherwise, the student gets NA (Not attended) from the course. Valid excuses are exempt from computation of these percentages.

Apart from the university regulations, it is of student's benefit to attend all of the lecture hours.

Grading: Overall final grade will be over 1300 points. Weight of each grading item will be as below.

Project reports grade over 300

Manufactured product over 150

Testing over 150

Final presentation over 100

Design performance (poster&demo) over 400

Extraordinary effort bonus over 100

Member cross assessment over 50

+ Attendance over 50 (for >70%)

Final grade over 1300

All the announcements, including the report deadlines and presentation dates will be posted on the course web site.

Catalogue values given below will be used in the assessment of the grades.

Lower Limit	Upper Limit	Grade
90	100	AA
85	90	BA
80	85	BB
70	80	CB
60	70	CC
50	60	DC
45	50	DD
35	45	FD
0	35	FF
NA	NA	NA

ME 408-INNOVATIVE ENGINEERING DESIGN AND APPLICATION (2 4 4)
2014-2015 Spring
Course Syllabus

Tentative weekly course schedule:

W	Workshop/Design&Implementation Review	Deliverable
1	Planning of the Implementation Phase	
2	R6 Design for Manufacturability: Material and Process Selection	R6-Project Planning and Management Report for Implementation Phase
3	Design for Manufacturability: Material and Process Selection Preparation of Test Plan	
4	Design for Manufacturability: Material and Process Selection R7 Design of Test Setups	R7-Production Plan
5	Prototype System Manufacturing R8	R8-Test Plan and Report
6	Prototype System Manufacturing Preparation of Test Setups	
7	Testing and Reporting the Results	
8	Testing and Reporting the Results	
9	Revised R6 and R7 Testing and Reporting the Results	R6 Revised R7 Revised
10	Testing and Reporting the Results	
11	Assessment of the Test Results, Re-Design, Re-Manufacture and Re-Test (If Required)	
12	Assessment of the Test Results, Re-Design, Re-Manufacture and Re-Test (If Required) Project deliverables	Prototype System R8-Revised
13	Project deliverables	P-Project Posters
14	Project deliverables	FR-Project Final Report