EC 530 Micro-Electro Mechanical Systems

C O U R S E I N F O R M A T I O N

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laboratory	
EC 434	5	9	2	0	2	3

C O U R S E A I M

To learn new design technologies, large-scale designs using VLSI technology and modern computer techniques used in digital circuit designs and implementation.

C O U R S E W E E K L Y C O N T E N T S

1 Introduction to MEMS technology.
2 MEMS applications (medical, BIOMEMS, microfluidics and environmental).
3 MEMS applications (automotive, military).
4 MEMS applications (RF & electronics applications).
5 MEMS fabrication techniques (Silicon properties and basic layer techniques).
6 MEMS fabrication techniques (basic layer techniques cont.).
7 7th week assessment + Midterm Exam.
8 MEMS fabrication techniques (material deposition and removal methods).
9 Microactuators.
10 Microsensors.
11 System Issues: Post-Processing Steps and Techniques.
12 12th week exam.
13 Scaling, Scaling Effects.
14 Scaling of Forces.
15 Microassembly and Microrobotics.

S T U D E N T G R A D I N G & A S S E S S M E N T

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	**20 Midterm**	←	10 MARKS To be freely distributed among possible assessments			→	**30**
8 to 12	←		20 MARKS			→	**20**
13 to 15	←		10 MARKS			→	**10**
16 or 17	**40 Final**						**40**
Total	**Exams**	**Assign.**	**Quizzes**	**Reports**	**Present.**	**Lab.**	100

R E F E R E N C E S

Textbook S.Fatikov, V.Renold, "Microsystems technology and Microrobotics"