



University of Tehran
School of Electrical and Computer Engineering

1) Course:	The theory and technology of semiconductor devices II (8101 213)									
Course type:	EE*					CE*				Credit: ...
	Com	E	P	B	Con	D	SW	HW	IT	
	Required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Elective	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level:	Undergraduate <input type="checkbox"/> Graduate <input type="checkbox"/>									
Co-requisite(s):	None.									
Prerequisite(s):	The theory and technology of semiconductor devices I (8101851...)									
Prerequisite by topic:	General familiarity with IC Fabrication techniques, in particular Lithography, Oxidation, Diffusion									
Textbook(s):	[1] James D.Plammer M.Deal and Peter Griffin,"Silicon VLSI Technology:fundamentals practice and modeling"									
Coordinator:,, School of ECE									
Goals:	1- Familiarity with (a) Nano/Micro fabrication technology in particular Ion Implantation, Deposition, Etching and Back end processes (b) process integration for semiconductor Device fabrication (c) process simulation (d) process characterization									
Outcome:	Upon successful completion of the course, students will be able 1. Design Fabrication process masks for (new) Si based Devices 2.									
Topics:	1) Ion Implantation 2) Thin film Deposition 3) Etching 4) Back- end technology									
Computer usage:	Using TCAD soft wares to simulate semiconductor fabrication processes									
Assignments:	4 to 5 homework assignments									

Projects:	Using TCAD soft wares to simulate semiconductor fabrication processes
Grading:	Assignments: 10 % Projects: 20 % Quizzes: 0 % Midterm exams: 30% Final exam: 40 %
Further readings:	[1] Fundamentals of Semiconductor Processing Technology Badih Elkareh Academic. Publisher [2]
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Date:	Dec,15, 2017

*EE: Electrical Engineering		CE: Computer Engineering	
Com	Communications	SW	Software
E	Electronics	HW	Hardware
P	Power	IT	Information Technology
B	Bioelectronics		
Con	Control		
D	Digital System		