

ICS 331 / 331L : Logic Design and Microprocessors (4 cr.)			
Description	Basic machine architecture, microprocessors, bus organization, circuit elements, logic circuit analysis and design, microcomputer system design. Use of laboratory tools, measurement and construction techniques, hardware debugging, interfacing techniques, microcomputer circuitry and construction.		
Prerequisites	312 , or consent		
Learning Objectives	<ul style="list-style-type: none"> ● have sufficient knowledge of hardware so that they can understand how to assemble a PC, design control circuits, and take part in joint teams with electronic engineers in the design of programmable devices ● understand how microprocessors carry out instructions at machine level ● understand basic electronics & understand the elements of digital logic ● understand microprocessor architecture ● use lab instruments including oscilloscopes ● construct and debug combinational circuits ● construct and debug microprocessor circuits ● burn eproms & make use of simulators 		
Topic List	#	Topic	Lecture Hours
	1	Basic machine language	3.0
	2	Digital logic	12.0
	3	Electricity and electronics	12.0
	4	Microprocessor architecture	10.0
	5	Basic control theory and robotics	4.0
	6	Instrumentation	2.0
	7	Combinatorial circuit construction	4.0
	8	Microprocessor circuit construction and testing	4.0
	9	Microprocessor architecture	4.0
	10	Control device construction, construction of a robot	4.0