INEL 4206 MICROPROCESSORS

Course catalog description:

Three credit hours. Three hours of lecture per week.

Architecture, organization and operation of microprocessors and their supporting devices; design of microprocessor-based systems.

Prerequisite or co requisite:

Prerequisite: INEL 4205 and INEL 4201.

Prerequisite by topics:

Number systems, knowledge of logic circuit design, knowledge of basic electronic circuits analysis and design, basic programming concepts.

Textbook:

Barry B. Brey, *INTEL Microprocessors 8086/8088, 80186/80188, 80286, 80386, 80486, Pentium, Prentium ProProcessor, Pentium II, III, 4, 7/e.* Prentice Hall, 2006.

Course objectives:

The course is designed to introduce students to the architecture, operation, programming, and basic interfacing of microprocessors. The course, also, includes the study of the microprocessor instruction set and the use assembly language programming for the Intel family of microprocessors.

Course outcomes:

After completion of the course the student should be able to understand the operation of microprocessor-based systems. In addition, the student should be able to specify, design, implement, and debug simple microprocessor-based applications using the Intel x86 architecture.

Topics covered and time dedicated:

Introduction to microprocessor and computer	2 lectures
Microprocessor architecture	1 lectures
Addressing modes	2 lectures
Data movements instructions	3 lectures
Arithmetic and logic instructions	5 lectures
Program control instructions	2 lectures
Programming the microprocessor	7 lectures
8086/88 hardware specifications	2 lectures
Memory interface	5 lectures
Basic I/O interface	8 lectures
Interrupts	2 lectures
Direct memory access	3 lectures
Exams	3 lectures

Class/laboratory schedule:

Three hours of lecture per week.

Contribution of course to meeting the professional component:

Engineering Science: 1.5 credits

Engineering Design: 1.5 credits

Relationship of course to program objectives:

	Objective				
	1	2	3	4	5
Contribution		X	X	X	

Relationship of course to program expected outcomes:

	Outcome										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Contribution	X	X	X	X	X	X	X		X	X	X

Person(s) who prepared this description and date of preparation:

Electronics Committee, March 2002.