EE 413 Microprocessor Based Process Control

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	Lab.	
CC 441	-	4	8	2	2		3

C O U R S E A I M

To study the signal conditioning and data input and output
To study a/d and d/a converters
To study the microprocessor and their applications.

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

1 Types of process control strategy.
2 Microprocessor and microcontroller as digital control.
3 Microcontroller principles and configurations.
4 Microcontroller Programming.
5 Digital Input/Output ports with applications
6 Timer modules with applications
7 Typ of Signal and Digital Signal Conditioning. + Midterm Exam
8 A/D and D/A Conversion.
9 Data Acquisition Systems.
10 Analogue signal conditioning.
11 Interrupts: Software and hardware with applications
12 Counters with applications
13 Special instructions of microcontrollers.
14 Embedded System Applications 1.
15 Embedded System Applications 2.

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 Myke Predko, “Programming and Customizing the PIC Microcontroller”

Other M. Tohnson, “Engineering Instrumentation & Measurements”, Prentice Hall,
N.Y. Dogan, Ibrahim “Microcontrollers Based Applied Digital Control”.