

Course Number and Name												
BEE603 & Microprocessor and Microcontroller												
Credits and Contact Hours												
3 & 45												
Course Coordinator's Name												
Mr.K.S.Prasad												
Text Books and References												
Text Books:												
1. Krishna Kant, "Microprocessor and Microcontrollers", Eastern Company Edition, Prentice Hall of India, New Delhi, 2007.												
2. R.S. Gaonkar, 'Microprocessor Architecture Programming and Application', with 8085, Wiley Eastern Ltd., New Delhi, 2013.												
3. Soumitra Kumar Mandal, Microprocessor & Microcontroller Architecture, Programming & Interfacing using 8085, 8086, 8051, McGraw Hill Edu, 2013.												
References:												
1. Muhammad Ali Mazidi & Janice GilliMazidi, R.D.Kinely 'The 8051 Micro Controller and Embedded Systems', PHI Pearson Education, 5th Indian reprint, 2003.												
2. N.Senthil Kumar, M.Saravanan, S.Jeevananthan, 'Microprocessors and Microcontrollers', Oxford University Press, 2013.												
3. http://nptel.ac.in/courses/108107029/												
Course Description												
To gain knowledge in microprocessor architecture, programming and its various applications.												
Prerequisites						Co-requisites						
Digital Electronics						Nil						
required, elective, or selected elective (as per Table 5-1)												
Required												
Course Outcomes (COs)												
CO1: To expertise the concepts of theory and programming of microprocessors												
CO2: To achieve personal and professional success with awareness and commitment towards the social responsibility. To understand and work on 8bit and 16 bit microcontrollers.												
CO3: To Design microprocessor based systems along with I/O interfacing.												
CO4: To Understand the impact of microcontrollers in engineering applications.												
CO5: The student will be able to select an appropriate architecture and to apply to a particular situation												
Student Outcomes (SOs) from Criterion 3 covered by this Course												
COs/SOs	a	b	c	d	e	f	g	h	i	j	k	l
CO1	M	M	M	H	M	H		M				M

CO2	M	M	M	H	M	M	M	H	H			M
CO3		M	H	H	H	H		H	M			
CO4		M	H	H	H	H	M	M	M			
CO5			L	H		M						M

List of Topics Covered

UNIT I 8085 PROCESSOR

9

Hardware Architecture, pinouts – Functional Building Blocks of Processor — Memory organization –I/O ports and data transfer concepts– Timing Diagram – Interrupts.

UNIT II PROGRAMMING OF 8085 PROCESSOR

9

Instruction -format and addressing modes – Assembly language format – Data transfer, data Manipulation & control instructions – Programming:Loop structure with counting & Indexing – Look up table -Subroutine instructions - stack.

UNIT III 8051 MICRO CONTROLLER

9

Hardware Architecture, pin outs – Functional Building Blocks of Processor – Memory organization –I/O ports and data transfer concepts– Instructionset-Timing Diagram – Interrupts.

UNIT IV INTERFACING

9

Study on need, Architecture, and interfacing, with ICs: (a)8251 –USART;(b) 8256 –Direct memory access controller (c) 8259 programmable interrupt controller;(d) 8279 keyboard – display interface. A/D and D/A converters &Interfacing with 8085& 8051.

UNIT V MICRO CONTROLLER PROGRAMMING & APPLICATIONS

9

Data Transfer, Manipulation, Control Algorithms& I/O instructions –Simple programming exercises, – Stepper Motor control –Washing Machine Control-.Microprocessor vs Microcontroller.