

GRAPHIC ERA (DEEMED TO BE UNIVERSITY), DEHRADUN

SEMESTER IV

Name of Department: - Computer Science and Engineering

1. Subject Code:	TCS-403	Course Title:	Microprocessors
2. Contact Hours:	L: 3	T: 0	P: 0
3. Examination Duration (Hrs):	Theory 3	Practical 0	
4. Relative Weight:	CIE 25	MSE 25	SEE 50
5. Credits:	3		
6. Semester:	IV		
7. Category of Course:	DC		
8. Pre-requisite:	TEC-101 Basic Electronics, TCS-301-Logic design		

9. Course Outcome**:	After completion of the course the students will be able to: CO1: Remember the concept of microcomputer system. CO2: Understand microprocessor 8085, 8086 and microcontroller 8051 hardware. CO3: Apply the concepts of assembly language programming of 8085 and 8086 to fulfil different tasks. CO4: Examine the application of 8085 and 8086 microprocessor with interrupt system, real time timer and counter. CO5: Test different interfacing ICs and memory for defined tasks with 8085 and 8086 microprocessor. CO6: Integrate the knowledge of 8085, 8086 and 8051 in various embedded systems.
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*** Describe the specific knowledge, skills or competencies the students are expected to acquire or demonstrate.*

10. Details of the Course:

Sl. No.	Contents	Contact Hours
1	Unit 1: Microprocessor Architecture: Introduction to Microprocessor and Microcomputer Architecture, Brief Evolution of Microprocessor, 8085 Register Organization, Internal architecture, Pins & Signals, 8085 Interrupts.	10
2	Unit 2: Programming with 8085: Programming model of 8085, 8085 instructions set, Addressing modes, Instruction Timing & Execution, Assembly language Programs using Instruction of 8085. Stack and subroutine.	10
3	Unit 3: Interfacing with 8085, Memory Interfacing: Interfacing EPROM&RAM memories. Address Decoding, Memory & I/O mapped I/O,	10

	Programmable Interfaces: - 8255, 8251, 8253, 8259, Overview of DMA & DMA controller, ADC and DAC interfacing.	
4	Unit 4: Intel 8086 (16 bit processor): 8086 Architecture, Physical address, segmentation, memory organization, Instruction set of 8086, Addressing Modes, Pins & Signals, 8086 Interrupts. Simple Assembly Language Programs using Instruction of 8086.	10
5	Unit 5: 8051 Microcontroller: Microprocessor Vs Microcontroller, Embedded Systems, 8051 Architecture- Registers, Pin diagram, I/O ports functions, Memory organization. Interrupts of 8051.	08
	Total	48

11. Suggested Books:

SL. No.	Name of Authors/Books/Publishers	Edition	Year of Publication / Reprint
	Textbooks		
1.	Ramesh Gaonkar, Microprocessor Architecture, Programming, and Applications with the 8085, Penram International Publication (India) Pvt. Ltd	6 th	2013
2	A. K. Ray & K. M. Bhurchandi, Advanced Microprocessors and peripherals, Tata McGraw Hill	3 rd	2012
3.	Muhammad Ali Mazidi, Janice Gillispie Mazidi, The 8051 Microcontroller & Embedded System, Pearson / PHI publication	2 nd	2007
	Reference Books		
1.	Douglas V. Hall, Microprocessors and Interfacing, Tata McGraw Hill	3 rd	2012
2.	Barry B. Brey, The Intel Microprocessors Architecture Programming and interfacing, Pearson	8 th	2012

12.	Mode of Evaluation	Test / Quiz / Assignment / Mid Term Exam / End Term Exam
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