

GANPAT UNIVERSITY										
FACULTY OF ENGINEERING & TECHNOLOGY										
Programme		Diploma Engineering				Branch		Computer Engineering		
Semester		III				Version		1.0.0.0		
Effective from Academic Year			2018-19			Effective for the batch Admitted in			June 2018	
Subject code		1CE2305		Subject Name		MICROPROCESSOR & ASSEMBLY LANGUAGE PROGRAMMING				
Teaching scheme					Examination scheme (Marks)					
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total	
	L	TU	P	TW						
Credit	3	0	1	0	4	Theory	40	60	100	
Hours	3	0	2	0	5	Practical	30	20	50	

Pre-requisites:
Fundamental knowledge of digital electronics.

Course Learning Outcomes:
The course content should be taught and implemented with an aim to develop different skills leading to the achievement of the following competencies and course learning outcomes:
T1. To learn the concepts of microprocessor
T2. To get knowledge of microprocessor architecture
T3. To familiar with need of interrupts
T4. To understand assembly language instruction set
T5. To develop assembly language programming skill
The practical should be carried out in such a manner that students are able to acquire different learning outcomes in cognitive, psychomotor and affective domain to demonstrate course learning outcomes.

Course Content				
Name of UNIT	Unit Content	Unit Learning Outcomes	Marks	Hrs
UNIT – 1 BASICS OF 8085 MICRO- PROCESSOR	1.1 Introduction of Microprocessor 1.2 8085 Bus Organisation 1.3 De-multiplexing of Add/Data Bus 1.4 Generate Control Signals 1.5 8085 Architecture 1.6 Flag Register of 8085	1a. Define types of bus 1b. Generate Read/Write Signals 1c. Draw 8085 Architecture 1c. Use Flag register	10	08
UNIT – 2 8085 ARCHITECTURE	2.1 Register Organisation 2.2 Stack Pointer, Program Counter 2.3 Timing and Control 2.4 Serial I/O, Interrupt Control, 2.5 Instruction Register & Decoder 2.6 Pin Diagram of 8085	2a. Select different registers 2b. Identify timing & control pins 2c. List function of serial, Interrupt 2d. Classify pins of 8085	10	06
UNIT – 3 8085 INTERRUPTS	3.1 Types of Interrupts 3.2 Hardware & Software Interrupts 3.3 Restart Interrupts 3.4 Interrupt Service Routine (ISR) 3.5 Vector locations	3a. Understand need of interrupts 3b. Distinguish interrupts 3c. Implement ISR with vector address and priority level	10	06

	3.6 Interrupt Priority			
UNIT – 4 8085 INSTRUCTION SET	4.1 Addressing Mode 4.2 Classification of Instruction Set 4.3 Data Transfer Instructions 4.4 Arithmetic Instructions 4.5 Logic Instructions, Rotate 4.6 Jump, Call and Return Instruction 4.7 Machine Control Instructions	4a. Interpret instruction format 4b. Classify types of instructions 4c. Understand operation of instruction set	15	12
UNIT – 5 PROGRAMING TECHNIQUES	5.1 Data Transfer Programs 5.2 Arithmetic Programs 5.3 Logic Programs 5.4 Rotate Programs 5.5 Branch Programs 5.6 Delay Subroutine Programs	5a. Develop programs for data Transfer and Branch 5b. Develop programs for arithmetic, logic operations 5c. Calculate delay and implement subroutines	15	10

List of Practical		
No.	Unit	Name of Practical
1	1	Demonstrate of Trainer kit or simulator of 8085
2	4, 5	Implement program to perform addition of two 8 bit numbers
3	4, 5	Implement program to perform BCD addition of two 8 bit numbers
4	4, 5	Implement program to perform subtraction of two 8 bit numbers
5	4, 5	Implement program to perform multiplication of two 8 bit numbers
6	4, 5	Implement program to perform Logical OR operation of two 8 bit numbers
7	4, 5	Implement program to perform Logical AND operation of two 8 bit numbers
8	4, 5	Implement program to perform Logical XOR operation of two 8 bit numbers
9	4, 5	Implement program to perform 2's Complement 8 bit numbers
10	4, 5	Implement program to convert given decimal digit into its equivalent ASCII
11	4, 5	Implement program to count number of 1's in 8-bit number
12	4, 5	Implement program to design delay subroutine of 1ms.

List of Instruments / Equipment / Trainer Board	
1	8085 microprocessor Trainer Board
2	Computer System
3	Application Boards
4	Multimedia Projector

List of Reference Books			
No	Title of Reference Books	Authors	Publication
1	Microprocessor: Architecture, Programming, and Application with the 8085	Ramesh Gaonkar	Penram
2	The 8085 Microprocessor: Architecture, Programming and Interfacing	K. Udaya Kumar, B. S. Umashankar	Pearson

3	8085 Microprocessor Programming and Interfacing	N. K. Srinath	PHI
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Link of Learning Web Resource	
1	http://www.oshonsoft.com/8085.html
2	http://www.eazynotes.com/notes/microprocessor/Slides/instruction-set-of-8085.pdf
3	https://www.technicalsymposium.com/microprocessor_lab.pdf
4	https://lecturenotes.in/u/hiteshmomaya