Ganpat University
॥ विद्यया समाजोत्कर्षः ॥

Faculty of Computer Applications

Programme	B.Sc. IT Honours (Artificial Intelligence & Machine Learning)	**Branch**	Computer Applications
Semester	II	**Version**	1.0.0.0
Effective from Academic Year	2026-27	**Effective for the batch Admitted in**	June 2026
Subject code	U82B3MP	**Subject Name**	MICROPROCESSOR PROGRAMMING

Teaching scheme

(Per week)	Lecture (DT)		Practical (Lab.)		Total
	L	TU	P	TW	
Credit	2	-	2	-	4
Hours	2	-	4	-	6

Examination scheme (Marks)

	CCE	SEE	Total
Theory	50	50	100
Practical			

Objective:

To study architecture of microprocessor and learn Assembly language code

Pre-requisites:

Fundamentals knowledge of Digital Logic Design and Computer Architecture

Learning Outcome:

Name of CO	Description
CO1	Demonstrate features and components of microprocessor
CO2	Understand the necessity, features and architecture of 8085 microprocessor.
CO3	Classify assembly language instructions , write simple instructions in assembly language
CO4	Write assembly language instructions using control structure
CO5	List and describe the features of advanced microprocessors

Mapping of CO and PO:

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2	1	1	0	1	1	1	2	1	0
CO2	2	2	1	0	1	0	1	2	1	0	0	0
CO3	3	0	2	0	2	1	0	1	2	2	0	1
CO4	3	1	1	1	1	0	1	3	0	0	0	0
CO5	2	0	1	1	1	0	0	1	1	0	1	0

Content:

Unit	Content	Hrs.
1	**Introduction of Microprocessor** Introduction to Microprocessor, Microprocessor Types ,Components of a Microprocessor: Registers, ALU and control & timing, System bus (data, address and control bus), Architecture and Operations, Memory, I/O devices, Memory and I/O operations	06
2	**8085 Microprocessor** 8085 Microprocessor Architecture, Address, Data And Control Buses, 8085 Pin Functions, Demultiplexing of Buses, Generation Of Control Signals, Instruction Cycle, Machine Cycles, T-States, Memory Interfacing	06
3	**8085 Instructions set** Assembly Language Programming Introduction, Classification of Instructions, Addressing Modes, 8085 Instruction Set, Instruction And Data Formats, Writing Assembly language program and execution	06

4	**Control Structure** Decision, making and looping using data transfer, arithmetic, logical and branch instructions **Interfacing Concepts** Ports, Interfacing Of I/O Devices, Interrupts In 8085, Programmable Interrupt Controller 8259A, Programmable Peripheral Interface 8255A	06
5	**Advanced Microprocessors** Block diagram of Advanced Microprocessor, Architecture, Memory Hierarchy, Cache memory, Virtual memory, Paging & segmentation, Pipe lining - Pipe line hazards ,mode of operation	06

Practical Content:	
List of programs specify by subject teacher based on above mention topics.	
Reference Books:	
1	Fundamentals of Microprocessor and Microcomputers by B. RAM – 4th Edition – Dhanpat Rai Publications
2	Microprocessor Architecture Programming and Application with 8085 by Ramesh S. Gaonkar – Wiley Eastern Limited.
3	Microprocessors and Interfacing, N. Senthil Kumar, M. Saravanan, S. Jeevanathan, S. K. Shah, Oxford
Web Reference:	
1	https://www.geeksforgeeks.org/microprocessor-tutorials/
MOOC/Certificate Course:	
1	www.udemy.com/course/microprocessor-8085
2	https://onlinecourses.nptel.ac.in/noc20_ee42/preview
3	https://www.coursera.org/courses?query=microprocessor
Question Paper Scheme:	
	End Semester Examination Duration: (2 Hours Theory Examination) Note for Examiner: - Q-1 Any Five out of Seven (25 Marks) Q-2 Any Two out of Three (06 Marks) Q-3 Mandatory question (05 Marks) Q-4 Any Two out of Three (08 Marks) Q-5 Any Two out of Three(06 Marks) *The question paper must comprehensively address all Course Outcomes (COs), align with Bloom's Taxonomy levels, and ensure complete syllabus coverage.