

Subject Code:1SC2050306

Subject Title: Microprocessors, Programming, Interfacing & Applications

COURSE OBJECTIVE:

Physics is a science to understand the nature. This course is designed to get basic understanding of the physical world.

LEARNING OUTCOMES:

- To get basic concepts of Magnetic and optical properties of condensed matter Physics

Teaching scheme (hours) per week		Credit		University Examination		Internal Examination		Total
Theory	Practical	Theory	Practical	University Assessment	Practical	Internal Assessment	Practical	
4	--	4	--	60	--	40	--	100

Unit	Content	Lectures	Weight (%)
1	Introduction to 8085: Introduction to microprocessors; Organization and Architecture of Intel-8085, PIN diagram, Op-Code and Operands, Instruction word size. Fetch and Execute Operations. Timing diagrams Instruction set of Intel 8085: Data transfer group, Arithmetic group, Logical group, Branch control group, Stack I/O and Machine control group. Subroutine. Assembly language programming of 8085 Address space partitioning, Schemes of allocation of addresses, Memory and I/O interfacing.	15	25
2	Data Transfer and Peripheral Devices: Data transfer schemes; Synchronous, Asynchronous and Interrupt driven schemes. Interrupts of Intel-8085, Interrupt circuits and programming, Interfacing Devices and I/O Devices, I/O ports INTEL-8255, Architecture and operating modes of INTEL-8255. Programmable DMA controller Intel-8257, Programmable interrupt controller Intel-8259. Programmable counter/interval timer INTEL-8252.	15	25
3	Microprocessor based data acquisition system: A/D converter, Clock for A/D converter, sample and hold circuit IC LF-398, Analog multiplexer, ADC 0800- Interfacing and programming, Interfacing and Programming of ADC-0800, Analog Multiplexer AM-3705 and Sample and Hold circuit LF-398, ADC 0801 Series. D/A converter, Operating Principle, DAC0800-Interfacing, Realization of A/D converter using D/A converter.	15	25
4	Delay subroutine, Display of decimal numbers, Display of Alphanumeric characters, Multiple Digital Display, Measurement of electrical and physical quantities: Frequency, Frequency Measurement using SID line, Phase angle and Power Factor Measurement, Voltage, Current, Resistance measurement, Temperature measurement and control. Introduction to microcontroller Intel-8051.	15	25

Basic Reference book:

1. Fundamentals of Microprocessors and Microcomputers, B. Ram (Dhanpat Rai and Sons, Delhi).
2. Microprocessor Architecture, Programming and Applications with the 8085/8080AR. S. Gaonkar, Wiley Eastern Ltd.
3. Microprocessors: Theory and Applications, M. Rafiquzzaman, Printice Hall International Inc.
4. Introduction to Microprocessors, A. P. Mathur, Tata Mac Graw Hill Publishing Co. Ltd. New Delhi.
5. The 8051 Microcontroller, Architecture, Programming and Application, Kenneth J Ayala, Penram International.