"Education for Knowledge, Science, and Culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur

KOLHAPUR (AUTONOMOUS)

(Empowered Autonomous)

Department of Electronics

Course Outcomes (Cos): Electronics Department

B.Sc. III Electronics (Implemented from JUNE 2023)	
Semester V	
Paper- DSE 1005 E1:Fundamentals of Instrumentation	
CO No	After completion of the courses, students will be able to:
CO1:	Understand the fundamentals of measurement and performance characteristics of instruments
CO2:	Apply fundamental knowledge of Instrument for electrical measurements
CO3:	Understand the principles, types, and selection criteria of transducers in various engineering applications.
CO4:	Understand the concepts, principles and types of actuators
Paper- DSE 1005 E2: 8051 Microcontroller Interfacing	
CO1:	Program 8051microcontroller using Embedded C
CO2:	Able to interface and control various input and output devices using microcontrollers
CO3:	Understand and implement ADC and DAC interfacing techniques effectively
CO4:	Able to interface various sensors to 8051microcontroller
Paper- DSE 1005E3: Antenna and Wave Propagation	
CO1:	Understand the fundamentals of antenna theory
CO2:	Get familiarize with different parameters of antenna
CO3:	Get familiarize with application of antenna according to types of antenna
CO4:	Create awareness about the different types of propagation of radio waves at different frequencies
Paper- DSE 1005E4: Programmable Logic Controller (PLC)	
CO1:	Understand the basics of control system
CO2:	Describe typical concepts and components of a Programmable Logic Controller
CO3:	Use timer, counter, and other intermediate programming functions
CO4:	Design and program basic PLC circuits for entry-level PLC applications
CO5:	Explain and apply the concept of electrical ladder logic, its history, and its relationship to programmed PLC instruction
Paper- SEC 3: Computer Networks	
CO1:	know the fundamentals of computer networks
CO2:	get familiarize with different public switched telephone networks
CO3:	apply knowledge of transmission media, multiplexing and telephone networks
CO4:	design and analyse the computer network protocols

Semester: VI	
Paper- DSE 1005 F1: Industrial Instrumentation	
CO No	**After completion of the courses, students will be able to:**
CO1:	Design and study different OP-AMP circuits
CO2:	Design and implement active filter circuits
CO3:	Distinguish analog and digital instruments
CO4:	Design and implement VCO, V to F and V to F converter using different ICs
Paper- DSE 1005 F2: Advanced Microcontroller	
CO1:	Understand the architecture and function of each pin of AVR 8-bit Microcontroller.
CO2:	Write debug and simulate embedded C language programs.
CO3:	Understand Timer operation, Interrupt environment and Serial Communication.
CO4:	Understand the interfacing of various systems with AVR microcontroller.
Paper- DSE 1005F3 Power Electronics	
CO1:	Understand basic power electronic devices and their role in power conversion.
CO2:	Understand the types, characteristics, and applications of Thyristors.
CO3:	Understand and analyse performance of controlled and uncontrolled converters.
CO4:	Familiarize with different applications of Power Electronics.
Paper- DSE 1005F4: Internet of Things (IoT)	
CO1:	Gain knowledge about the architecture of IoT systems
CO2:	CO6: Study the working principle of various types of sensors and actuators used in IoT applications
CO3:	CO7: Explore wireless technologies for IoT and gain an overview of different IoT protocols
CO4:	CO8: Explore cloud platforms used in IoT, including IoT dashboards and various cloud service providers
Paper- SEC 4: Embedded System Design using Arduino	
CO1:	Familiarize with Arduino Board & Accessories
CO2:	Familiarize with Arduino software development environment
CO3:	Interface the output devices LED, LCD with Arduino
CO4:	Interface the different types of sensors with Arduino

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

(Dr. C. B. Patil)
HEAD
DEPARTMENT OF ELECTRONICS
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)