



“Education for Knowledge, Science, and Culture”

- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

**Vivekanand College, Kolhapur**

**(Empowered Autonomous)**

**Department of Electronics**



KOLHAPUR (AUTONOMOUS)

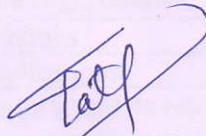
**Course Outcomes (Cos): Electronics Department**

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



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



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