



“Education for Knowledge, Science, and Culture”

- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

**Vivekanand College, Kolhapur**

(Empowered Autonomous)

**Department of Electronics**

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



<b>B.Sc. I Electronics (Implemented from JUNE 2023)</b>	
<b>Semester I</b>	
<b>DSC-I: DSC03ELE11: ANALOG ELECTRONICS-I</b>	
<b>CO No.</b>	<b>After completion of the courses, students will be able to:</b>
<b>CO1:</b>	Identify and explain electrical components and determine the value of resistor, inductor and capacitor using color code method.
<b>CO2:</b>	Understand the basic properties of electrical elements, and solve DC circuit analysis problems, DC network theorems.
<b>CO3:</b>	Acquire the knowledge about the characteristics and working principles of PN junction diode, Zener diode, photo diode, LED and different diode applications.
<b>CO4:</b>	Understanding and study of rectifier, filter and voltage regulator circuits.
<b>DSC-II: DSC03ELE12: DIGITAL ELECTRONICS-I</b>	
<b>CO1:</b>	Analyze output in different operating modes of Bipolar Junction Transistor and Demonstrate the operating principle and output characteristics of Bipolar Junction Transistor
<b>CO2:</b>	Explain construction and characteristics of JFETs, MOSFETs and UJT.
<b>CO3:</b>	Design biasing circuits for BJT and study different coupling methods used in multistage amplifiers
<b>CO4:</b>	Analyze the importance of feedback in amplifiers. Apply the knowledge gained in the design of transistorized circuits and Oscillators.



<b>Semester: II</b>	
<b>DSC-III: DSC03ELE21: ANALOG ELECTRONICS-II</b>	
<b>CO No.</b>	<b>After completion of the courses, students will be able to:</b>
<b>C01:</b>	Analyze output in different operating modes of Bipolar Junction Transistor and Demonstrate the operating principle and output characteristics of Bipolar Junction Transistor
<b>C02:</b>	Explain construction and characteristics of JFETs, MOSFETs and UJT.
<b>C03:</b>	Design biasing circuits for BJT and study different coupling methods used in multistage amplifiers
<b>C04:</b>	Analyze the importance of feedback in amplifiers. Apply the knowledge gained in the design of transistorized circuits and Oscillators.
<b>DSC-IV: DSC03ELE22: DIGITAL ELECTRONICS -II</b>	
<b>C01:</b>	Understand, analyze and design various sequential circuits.
<b>C02:</b>	Understanding the working of different shift registers and counters.
<b>C03:</b>	Became able to know various types of analog to digital converters and digital to analog converters.
<b>C04:</b>	Explain and compare the working of multivibrators using special application IC 555. Understanding and designing of multivibrator circuits.

<b>Semester I</b>	
<b>MIN-I: MIN03ELE11: ANALOG ELECTRONICS-I</b>	
<b>CO No.</b>	<b>After completion of the courses, students will be able to:</b>
<b>C01:</b>	Identify and explain electrical components and determine the value of resistor, inductor and capacitor using color code method.
<b>C02:</b>	Understand the basic properties of electrical elements, and solve DC circuit analysis problems, DC network theorems.
<b>C03:</b>	Acquire the knowledge about the characteristics and working principles of PN junction diode, Zener diode, photo diode, LED and different diode applications.
<b>C04:</b>	Understanding and study of rectifier, filter and voltage regulator circuits.
<b>MIN -II: MIN03ELE12: DIGITAL ELECTRONICS-I</b>	
<b>C01:</b>	Understanding the basics of Digital Electronics, different number systems, Binary Codes and signed representation of binary number. Also understand the conversion between different number systems and solve the binary arithmetic problems.

<b>CO2:</b>	Design and construction of the basic and universal logic gates and studying the Boolean algebra and simplification of Boolean expression using different methods.
<b>CO3:</b>	Understanding and comparing different logic families according IC specifications and their circuit configurations.
<b>CO4:</b>	Understand, analyze and design various combinational circuits.

<b>Semester II</b>	
<b>MIN -III: MIN03ELE21: ANALOG ELECTRONICS-II</b>	
<b>CO No.</b>	<b>After completion of the courses, students will be able to:</b>
<b>CO1:</b>	Analyze output in different operating modes of Bipolar Junction Transistor and Demonstrate the operating principle and output characteristics of Bipolar Junction Transistor
<b>CO2:</b>	Explain construction and characteristics of JFETs, MOSFETs and UJT.
<b>CO3:</b>	Design biasing circuits for BJT and study different coupling methods used in multistage amplifiers
<b>CO4:</b>	Analyze the importance of feedback in amplifiers. Apply the knowledge gained in the design of transistorized circuits and Oscillators.
<b>MIN -IV: MIN03ELE22: DIGITAL ELECTRONICS -II</b>	
<b>CO1:</b>	Understand, analyze and design various sequential circuits.
<b>CO2:</b>	Understanding the working of different shift registers and counters.
<b>CO3:</b>	Became able to know various types of analog to digital converters and digital to analog converters.
<b>CO4:</b>	Explain and compare the working of multivibrators using special application IC 555. Understanding and designing of multivibrator circuits.

<b>Semester I</b>	
<b>OEC-I: OEC03ELE11: CIRCUIT FUNDAMENTALS-I</b>	
<b>CO No.</b>	<b>After completion of the courses, students will be able to:</b>
<b>CO1:</b>	Understand the fundamental concepts of electricity.
<b>CO2:</b>	Analyze DC resistive circuits involving series and parallel combinations of resistances.
<b>CO3:</b>	Understand Kirchhoff's laws, network theorems.
<b>CO4:</b>	CO4: Understand AC fundamentals.



<b>OEC -II: OEC03ELE12: SEMICONDUCTOR DEVICES-I</b>	
<b>CO1:</b>	Understand the principles of semiconductors,
<b>CO2:</b>	Understand the construction, characteristic and working of PN junction diodes,
<b>CO3:</b>	Understand the construction, working principles and IV characteristics of special purpose diodes
<b>CO4:</b>	Understand the construction, working principles and working of bipolar junction transistor (BJT)

<b>Semester II</b>	
<b>OEC-III: OEC03ELE21: CIRCUIT FUNDAMENTALS-II</b>	
<b>CO No.</b>	<b>After completion of the courses, students will be able to:</b>
<b>CO1:</b>	Understand the specifications, classification, construction, and applications of passive circuit elements
<b>CO2:</b>	Understand the concepts, construction, and types of passive circuit elements
<b>CO3:</b>	Understand the principles, types, and operation of circuit control and protective devices, including switches, fuses, circuit breakers, and relays.
<b>CO4:</b>	Understand the principles, types, and characteristics of voltage and current sources
<b>OEC -IV: OEC03ELE22: SEMICONDUCTOR DEVICES-II</b>	
<b>CO1:</b>	Understand the concept of transistor biasing and different methods of transistor biasing CO2: Study the construction, working principles, and I-V characteristics (output and transfer) of JFETs and MOSFETs.
<b>CO2:</b>	Explore the concept of Single stage and multistage amplifiers
<b>CO3:</b>	Understand feedback amplifiers and oscillators
<b>CO4:</b>	Understand the concept of transistor biasing and different methods of transistor biasing CO2: Study the construction, working principles, and I-V characteristics (output and transfer) of JFETs and MOSFETs.



<b>Semester I</b>	
<b>IKS: IKS03GEC11: Indian Knowledge System</b>	
<b>CO No.</b>	<b>After completion of the courses, students will be able to:</b>
<b>CO1:</b>	Understand the concepts, technicalities and computational procedures developed by great Indian Astronomers over the past 2000 years
<b>CO2:</b>	Understand the nature of Contribution Made by Indian mathematicians
<b>CO3:</b>	This course aims to provide students with a comprehensive understanding of the historical progression of chemistry in India. Covering key periods from the pre-Harappan era to the Iatrochemical period
<b>CO4:</b>	Understand the importance of Ayurveda in everyday life and enable to advise the constitutional method of diet and Ayurveda life style.



**(Dr. C. B. Patil)**

**HEAD**  
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