

**Department of Electronics**  
**Statement of Programme Specific Outcomes (PSOs)**

**Programme: B Sc. Electronics**

By the end of this programme, the students will be able to:

1. Understand the basic concepts of electronics components, network theorem, digital electronics, semi conductor devices, amplifier, theory, AD circuits, basic circuits, design using circuit maker software and their application
2. Analyze different parameters of various circuits
3. Understand the use of electronics in the field of computer science.
4. Perform and testing of different electronics components and circuits.
5. Analyze the different characteristics of the circuits.
6. Understand the application of Electronics in domestic appliances
7. Analyze the relationship between analogue and digital circuits.

**Statement of Course Outcomes (COs)**

**Programme: B Sc SEM I Course: electronics components, network theorem**

Course Outcomes: By the end of this course, the students will be able to:

1. Identify the different electronics components used in electronic circuits.
2. Understand different concepts of electronics and network theorem.
3. Understand different concepts of semiconductor materials and devices.
4. Determine various characteristics of diodes and transistors.

**Programme: B Sc SEM I Course: Fundamental of Digital Electronics**

Course Outcomes: By the end of this course, the students will be able to:

1. Understand the concepts of digital electronics
2. Understand the basic working of different logic gates and laws of Boolean Algebra for simplification of circuits.
3. Understand the concepts of K-maps and designing of logic circuits.
4. Understand and design different controlling circuits used in digital electronics.

**Programme: B Sc SEM I Course: Practical**

Course Outcomes: By the end of this course, the students will be able to:

1. Perform the calculations on combination of basic components such as resistors and capacitor
2. Work on network theorems
3. Analyze the characteristics of different diodes and BJT
4. Perform the binary addition of more than 3 bits
5. Simplify and summarize the given logical circuits.

6. Convert the number in various number systems.
7. Explain the basics and universal gates.

**Programme: B Sc SEM II Course: Semiconductor Device**

Course Outcomes: By the end of this course, the students will be able to:

1. Describe working, characteristics and applications of semiconductor devices.
2. Understand and describe special high power semiconductor.
3. Analyze different parameters and relation between the different terms related to amplifier.
4. Classification of different amplifier and analyze the concepts of different types of amplifier.

**Programme: B Sc SEM II Course: Advance digital electronics**

Course Outcomes: By the end of this course, the students will be able to:

1. Understand the concepts of different logic family and comparison of different parameters of logic family.
2. Understand the concept of sequential logic circuits and study of different sequential circuit with reference to storage.
3. Understand different counting circuits and their applications.
4. Understand different digital storage devices, memory, and their classification with expansion.

**Programme: B Sc SEM II Course: Practical**

Course Outcomes: By the end of this course, the students will be able to:

1. Understand and analyze the characteristics of JFET, MOSFET and high power devices.
2. Explain the working of UJT and Oscillator.
3. Explain the combinational and sequential logic circuits.
4. Explain the working of transistor as a switch.

**Programme: B Sc SEM III Course: OP-AMP and power supply**

Course Outcomes: By the end of this course, the students will be able to:

1. Understand and compare different amplifier
2. Analyze the different parameters of OP-AMP
3. Understand the application of OP-AMPs for positive and negative feedback concept.
4. Understand the concept of unregulated and regulated power supply
5. Understand the IC regulator, different regulator and their performances.

**Programme: B Sc SEM III Course: Electronics circuit design.**

Course Outcomes: By the end of this course, the students will be able to:

1. Understand the concepts and ideas of designing circuit using computers.
2. Understand circuit maker software

3. Analyze different parameters of simple circuit and setting of different parameters using circuit maker
4. Understand the concept of virtual instrumentation and advance virtual instrumentation.

**Programme: B Sc SEM III Course: Practical**

Course Outcomes: By the end of this course, the students will be able to:

1. Explain the OP-AMP as linear and non-linear device.
2. Understand the working of regulated and unregulated power supply.
3. Identify the circuit symbols and components of circuit maker software.
4. Design and perform the different amplifier circuit maker.

**Programme: B Sc SEM IV Course: Analog & digital Techniques**

Course Outcomes: By the end of this course, the students will be able to:

1. Describe OPAMP as different types of RC, AC ASCILLATORS
2. Understand OP AMP as multi vibrators
3. Design and explain A to D and D to A convertors.
4. Describe the positive and negative feedback and advantages of positive feedback.

**Programme: B Sc SEM IV Course: Electronic Instrumentation**

Course Outcomes: By the end of this course, the students will be able to:

1. Classify the transducers and description of their characteristics.
2. Summarize the Im35 transducer and its application
3. Understand working and block diagram of biomedical instruments.
4. Understand the block diagram for electronic system.

**Programme: B Sc SEM IV Course: Practical**

Course Outcomes: By the end of this course, the students will be able to:

1. Understand working of Op AMP as vien bridge and phase shift
2. Describe different types of ADC, DAC and sample and hold circuit
3. Summarize the transfer characteristics of different transducers
4. Compare the accuracy of digital multi meters.

**Programme: B Sc SEM V Course: Electronics Communication**

Course Outcomes: By the end of this course, the students will be able to:

1. Understand the basics of electronics communication and types of communication
2. Describe different propagation modes of signals
3. Understand the concept of digital communication
4. Understand fiber optics communication system and concept of modern communication system.

**Programme: B Sc SEM V Course: Fundamental of Microprocessor**

Course Outcomes: By the end of this course, the students will be able to:

1. Understand and describe 8085 microprocessor
2. Describe different modes of operation of 8085 microprocessor
3. Understand different instruction set of microprocessor
4. Understand the need of interfacing and different modes of data transfer

**Programme: B Sc SEM III Course: OP-AMP and power supply**

Course Outcomes: By the end of this course, the students will be able to:

1. Perform communication system practical using PC/ microcontroller
2. Perform ASK and FSK using OPAMP
3. Perform simple assembly language program using instruction of 8085 microprocessor
4. Understand and study the PPI 8255

**Programme: B Sc SEM VI Course: Programming in C**

Course Outcomes: By the end of this course, the students will be able to:

1. Understand the basic of C language
2. Understand different syntax, keywords and operators used in C
3. Understand different control statement related to C programming
4. Understand the concepts of advanced data types
5. Understand the concept of file structure in C language.

**Programme: B Sc SEM VI Course: Microcontroller 8051**

Course Outcomes: By the end of this course, the students will be able to:

1. Understand basics of 8051 microcontroller
2. Understand different instruction and addressing modes of microcontroller
3. Understand the concept of subroutines and simple programming
4. Describe interfacing of different I/O devices with personal computer.

**Programme: B Sc SEM III Course: Practical**

Course Outcomes: By the end of this course, the students will be able to:

1. Perform simple programmes based on I/O functions and operators
2. Perform to understand the concept of file operations in C
3. Perform program related structures
4. Perform ADC and DAC interface with microcontroller applications.