Department of Electronics

Programme Specific Outcomes

On completion of the B. Sc. in electronics degree graduates will be able to

1. An ability to apply knowledge of mathematics, science, and engineering.
2. An ability to design and conduct experiments, as well as to analyze and interpret data.
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
4. An ability to function on multidisciplinary teams.
5. An ability to identify, formulates, and solves engineering problems.
6. An understanding of professional and ethical responsibility.
7. An ability to communicate effectively.
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
9. Recognition of the need for, and an ability to engage in life-long learning.
10. Knowledge of contemporary issues.
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

B.Sc. Part- III Electronics

Semester- V Paper- IX

DSE-E17: Electronics Instrumentation-I and Mechatronics

Course Outcomes

After successful completion of this course, the students will be able to :

CO1 Understand the basics, advantages, disadvantages and applications of mechatronics.

CO2 Understand construction, working and applications of different types of transducers.

CO3 Understand different types of applications of Op-amp.

CO4 Understand basics of first order active filters.

Semester- V Paper- X

DSE-E18: Antenna and Wave Propagation

Course Outcomes

After successful completion of this course, the students will be able to :

CO1 Understand basic antenna parameters.

CO2 Understand construction and working of HF, VHF, UHF and Microwave antennas.

CO3 Understand construction and working of monopole, dipole and patch antennas.

CO4 Understand different modes of propagation of radio waves, critical frequency, skip distance, virtual height etc.

Semester- V Paper- XI

DSE- E19 : 8051 Microcontroller Interfacing and Applications

Course Outcomes

After successful completion of this course, the students will be able to :

CO1 Understand different types of interrupts in 8051 programming

CO2 Understand real world interfacing of 8051 microcontrollers.

CO3 Understand different applications of 8051 microcontrollers.

CO4 Understand basics of modern microcontrollers and their applications.

Semester- V Paper- XII

DSE –E20 : Power Electronics Devices and Applications

Course Outcomes

After successful completion of this course, the students will be able to :

CO1 Understand construction, working and applications of semiconductor power devices.

CO2 Understand structure, characteristics operation of IGBT and thyristors.

CO3 Understand basics of uncontrolled and controlled rectifiers.

CO4 Understand applications of power devices.

Semester- VI Paper- XIII

DSE- F17: Electronics Instrumentation-II and Robotics

Course Outcomes

After successful completion of this course, the students will be able to :

CO1 Understand construction and working of different types of modern lab instruments and meters.

CO2 Understand basics of mechanical and electrical actuation systems.

CO3 Understand basics of robotics.

CO4 Understand certain applications robots.

Semester- VI Paper- XIV

DSE- F18: Optoelectronics and IoT

Course Outcomes

After successful completion of this course, the students will be able to :

CO1 Understand working of LASER diode, LED, Photodiodes, and Phototransistors.

CO2 Understand OFC communication and construction - working of different types of fibers.

CO3 Understand different types of losses in optical fibers.

CO4 Understand the concept, working and applications of IoT.

Semester- VI Paper- XV

DSE-F19: Advanced Microcontroller: PIC

Course Outcomes

After successful completion of this course, the students will be able to :

CO1 Understand basics if PIC families.

CO2 Understand instruction set and programming of PIC18.

CO3 Understand facilities in PIC18.

CO4 Understand serial communication, interfacing and different type of interrupts in PIC18.

Semester- VI Paper- XVI

DSEF20:Industrial Automation and PLC Programming

Course Outcomes

After successful completion of this course, the students will be able to :

CO1 Understand basics of control system.

CO2 Understand components of control system.

CO3 Understand programming logic controller (PLC) basics.

CO4 Understand ladder programming basics.

B. Sc. Part – II Electronics

Semester – III Paper – V (Communication Electronics)

Course Outcomes:

After studying this course the students are able to –

• Understand functioning of basic communication systems.

• Understand analog modulation & demodulation techniques.

• Understand satellite communication & navigation systems.

Semester – III Paper – VI

(Introduction to microprocessor 8085 and Microcontroller 8051)

Course Outcomes:

After studying this course the students are able to –

• Understand microcomputer organization and architecture of μP 8085.

• Understand instruction set and programming of μP 8085.

• Understand 8051 family and architecture of μC 8051.

Semester – IV Paper – VII

(Digital modulation and mobile telephone systems)

Course Outcomes:

After studying this course the students are able to –

• Understand analog pulse modulation techniques viz. PAM, PWM & PPM.

• Understand digital pulse modulation techniques viz. ASK, FSK PSK & BPSK.

• Understand mobile telephone system and networks Viz GSM, CDMA, TDMA & FDMA.

Semester – IV Paper – VIII

(Microcontroller and Embedded Systems)

Course Outcomes:

After studying this course the students are able to –

• Understand addressing modes and instruction sets of μC 8051.

• Understand facilities in μC 8051 viz. timer, time delay calculations in different modes and serial communications.

• Understand programming of μC 8051 and real world interfacing.

• Introduction to embedded system and programming in C.