

Seth Kesarimal Porwal College of Arts & Science & Commerce, Kamptee

Department of Electronics

B. Sc Electronics

Program Specific Outcomes

After the successful completion of this course, the student will:


- ❖ Be able to design and conduct electronics experiments, as well as to analyze and interpret data.
- ❖ Be able to understand the basic knowledge of science electronics, communications and instrumentation.
- ❖ Be able to explain the core ideas and techniques of electronics at the college level.
- ❖ Be able to get the opportunities to becoming researchers and developers.
- ❖ Be able to get ideas of core electronics industry useful for the society in all walks of life.
- ❖ Be able to get the opportunities to formulate, analyze and resolve the problems in electronics industry.
- ❖ Be able to work independently and to collaborate effectively in team work on recent multidisiplinary projects for entrepreneurship.
- ❖ Be able to continuously enrich themselves through lifelong learning.

Electronics Course Outcomes

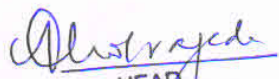
Semester I	E – 1	Electronic Components, Network theorems
	E – 2	Fundamentals of Digital Electronics

After the successful completion of this course, the student will:

- ❖ Understand the basic requirements of electronic circuits
- ❖ Understand the basic types and characteristics of electronic components.
- ❖ Understand the network theorems useful for circuit operations.
- ❖ Understand the use of energy sources for circuit operations.


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- ❖ Understand the use of different types of transistor required for designing the electronics circuit.
- ❖ Understand the basic requirements of digital electronics.
- ❖ Describe the use of Boolean Algebra for circuit operation.
- ❖ Elaborate the use of flip flops as memory in data processing system.
- ❖ Explore the use of binary circuits in digital system.
- ❖ Familiarize about the basic building blocks required for digital system.

Semester II	E - 1	Semiconductor Devices
	E - 2	Advanced Digital Electronics

After the successful completion of this course, the student will:

- ❖ Understand the use of semiconductors for the fabrication of semiconductor devices.
- ❖ Familiarize about the field effect transistor and its operation.
- ❖ Understand the construction and working of power devices required in electronics circuits.
- ❖ Describe the role of transistor in amplification, signal analysis and two port hybrid circuits for testing amplifier parameters.
- ❖ Explore the use of power amplifier in electronics circuit.
- ❖ Enrich the student with the digital ICs use in electronics circuits.
- ❖ Enhance the use of Flip – Flops in the construction of counter and shift register.
- ❖ Familiarize the use of counter and register in data processing system.
- ❖ Explore the use of binary memory in digital system.

Semester III	E - 1	OP – AMP and Power Supply
	E - 2	Electronic Circuit Design

After the successful completion of this course, the student will:

- ❖ Understand the block diagram of IC OP-AMP

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- ❖ Study the AC and DC characteristics of operational amplifier.
- ❖ Elucidate and design linear and nonlinear circuits of OP – AMP.
- ❖ Understand the construction and working of un-regulated and regulated power supply.
- ❖ Acquire the knowledge of designing of different types of regulated power supply using ICs.
- ❖ Know the ideas of electronics circuit design using software.
- ❖ Explore the knowledge of circuit design and circuit simulation using circuit maker.
- ❖ Understand the analog and digital logic simulation.
- ❖ Elaborate the role of virtual instrumentation in circuit design.

Semester IV **E - 1** Analogue and Digital Techniques
 E - 2 Electronic Instrumentation

After the successful completion of this course, the student will:

- ❖ Elaborate the concept of feedback and construction of feedback amplifier and oscillators.
- ❖ Understand the application of OP-AMP in circuit design.
- ❖ Learn about ADC and DAC used for data conversation in electronics system.
- ❖ Understand the various types of ADC and DAC.
- ❖ Learn about the basic knowledge of electronic instrumentation.
- ❖ Familiarize about the use of transducers in instrumentation system.
- ❖ Understand the basic requirements in biomedical instrumentation.
- ❖ Learn about the precaution, electrical shock hazards and safety codes while operating biomedical instruments.

Semester V **E - 1** Electronics Communication
 E - 2 Fundamentals of Microprocessors

After the successful completion of this course, the student will:

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- ❖ Understand functioning of basic processor in communications systems.
- ❖ Understand analogue and digital modulation and demodulation techniques.
- ❖ Understand transmission and reception system.
- ❖ Understand propagation of radio waves in communication system.
- ❖ Understand the concept of optical communication and its operation.
- ❖ Understand the concept of cellular telephone techniques.
- ❖ Understand the importance of microprocessors as a programmable digital system in computer.
- ❖ Learn about the architecture and features of 8085 microprocessors.
- ❖ Explore some basic concept of microprocessor through assembly language programming.
- ❖ Grow up the in-depth understanding of the operation of microprocessors and interfacing techniques.
- ❖ Augmented the knowledge of interfacing the peripheral to increase the flexibility of microprocessors.

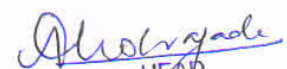
Semester VI	E - 1	Programming in 'C'
	E - 2	Microcontroller 8051

After the successful completion of this course, the student will:

- ❖ Develop the 'C' language programming skill.
- ❖ Familiar with the elements of C language.
- ❖ Understand operators, expressions and preprocessors.
- ❖ Understand different decision making and concept of looping in C.
- ❖ Understand Array, structure, function and pointers, their declaration and use.
- ❖ Understand the architecture and features of 8051 microcontroller.
- ❖ Learn the programming of 8051 microcontroller.
- ❖ Learn the interfacing techniques of 8051 microcontroller with real world input and output devices.
- ❖ Understand the coding and interfacing of 8051 with various I/O devices.
- ❖ Understand importance of microcontrollers in automization and control system.


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