The institution promotes experiential learning with add-on programs, lab courses, virtual experiments, and technology courses.

Lab courses

MECHANICAL ENGINEERING

I Year – I SEMESTER

S.no	Lab name	List of lab experiments names
1	Engineering Physics Lab	Determination of radius of curvature of a given Plano-convex lens by Newton's rings.
		Determination of wavelengths of different spectral lines in mercury spectrum using diffraction grating in normal incidence configuration.
2	Computer Programming Lab	Familiarization with programming environment i) Basic Linux environment and its editors like Vi, Vim & Emacs etc. ii) Exposure to Turbo C, gcc iii) Writing simple programs using printf(), scanf()
		Converting algorithms/flow charts into C Source code. Developing the algorithms/flowcharts for the following sample programs i) Sum and average of 3 numbers ii) Conversion of Fahrenheit to Celsius and vice versa iii) Simple interest calculation

I Year – II SEMESTER

S.no	Lab name	List of lab experiments names
1	Communicative English Lab	Vowels & Consonants
		Neutralization/Accent Rules
2	Data structures Lab	Linked List Applications i)Create a program to detect and remove duplicates from a linked list. ii) Implement a linked list to represent polynomials and perform addition. iii) Implement a double-ended queue (deque) with essential operations.

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ELECTRONICS AND COMMUNICATION ENGINEERING

I Year – I SEMESTER

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1	Engineering Physics Lab	Determination of radius of curvature of a given Plano-convex lens by Newton's rings.
		Determination of wavelengths of different spectral lines in mercury spectrum using diffraction grating in normal incidence configuration.
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I Year – II SEMESTER

S.no	Lab name	List of lab experiments names
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COMPUTER SCIENCE AND ENGINEERING

I Year – I SEMESTER

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1	Communicative English Lab	Vowels & Consonants
		Neutralization/Accent Rules
2	Computer Programming Lab	Familiarization with programming environment i)Basic Linux environment and its editors like Vi, Vim & Emacs etc. ii)Exposure to Turbo C, gcc iii)Writing simple programs using printf(), scanf()
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I Year – II SEMESTER

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COMPUTER SCIENCE ENGINEERING

(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

I Year – I SEMESTER

S.no	Lab name	List of lab experiments names
1	Engineering Physics Lab	Determination of radius of curvature of a given Plano-convex lens by Newton's rings.
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I Year – II SEMESTER

S.no	Lab name	List of lab experiments names
1	Communicative English Lab	Vowels & Consonants
		Neutralization/Accent Rules
2	Fundamental Chemistry Lab	Measurement of 10Dq by spectrophotometric method
		pH metric titration of strong acid vs strong base,

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COMPUTER SCIENCE

I Year – I SEMESTER

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1	Engineering Physics Lab	Determination of radius of curvature of a given Plano-convex lens by Newton's rings.
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I Year – II SEMESTER

S.no	Lab name	List of lab experiments names
1	Communicative English Lab	Vowels & Consonants
		Neutralization/Accent Rules
2	Data structures Lab	Linked List Applications i) Create a program to detect and remove duplicates from a linked list. ii) Implement a linked list to represent polynomials and perform addition. iii) Implement a double-ended queue (deque) with essential operations.

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II Year – I SEMESTER

S.no	Lab name	List of lab experiments names
1	Metallurgy & Mechanics of Solids Lab	1. Preparation and study of the Microstructure of pure metals like Iron, Cu and Al.
		2. Preparation and study of the Microstructure of Mild steel, Medium carbon steels, High carbon steels.
2	Production Technology Lab	Design and making of pattern i. Single piece pattern ii. Split pattern
		Sand properties testing i. Sieve analysis (dry sand) ii. Clay content test iii. Moisture content test iv. Strength test (Compression test & Shear test) v. Permeability test

II Year – II SEMESTER

S.no	Lab name	List of lab experiments names
1	Fluid Mechanics & Hydraulic Machines Lab	Impact of jets on Vanes.
		Performance Test on Pelton Wheel.
2	Machine Tools Lab	Introduction of general purpose machines - Lathe, Drilling machine, Milling machine, Shaper, Planing machine, Slotting machine, Cylindrical grinder, Surface grinder and Tool and cutter grinder.
		Operations on Lathe machines (i) Step turning and Knurling (ii) Taper turning and Knurling (iii) Thread cutting and knurling (iv) Drilling and tapping

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III Year – I SEMESTER

S.no	Lab name	List of lab experiments names
1	Thermal Engineering Lab	I.C. Engines valve and port timing diagrams.
		Testing of Fuels – Viscosity, flash point/fire point, carbon residue, calorific value.
2	Theory of Machines Lab	1. To determine whirling speed of shaft theoretically and experimentally.
		2.To determine the position of sleeve against controlling force and speed of a Hartnell governor and to plot the characteristic curve of radius of rotation.

III Year – II SEMESTER

S.no	Lab name	List of lab experiments names
1	Simulation of Mechanical Systems Lab	1. Mass-Spring-Damper with controller
		2. Double Mass-Spring- Damper
2	Heat Transfer Lab	1. COP of VCR System with Capillary and thermal expansion valve.
		2. Determination of overall heat transfer co-efficient of a composite slab

IV Year – I SEMESTER

S.no	Lab name	List of lab experiments names
1	Finite Element Simulation Lab	1. Determination of deflection and stresses in 2D and 3D trusses and beams.
		2. Determination of deflections component and principal and Von-mises stresses in plane

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II Year – I SEMESTER

S.no	Lab name	List of lab experiments names
1	Electronic Devices and Circuits - Lab	P-N Junction DiodeCharacteristics Part A: Germanium Diode (Forward bias& Reverse bias) Part B: Silicon Diode (Forward Bias only)
		Zener DiodeCharacteristics Part A: V-ICharacteristics Part B: Zener Diode as Voltage Regulator
2	Switching Theory and Logic Design - Lab	Verification of truth tables of Logicgates Two input (i) OR (ii) AND (iii) NOR (iv) NAND (v) Exclusive OR (vi) Exclusive NOR
		Design a simple combinational circuit with four variables and obtain minimal SOP expression and verify the truth table using Digital TrainerKit

II Year – II SEMESTER

S.no	Lab name	List of lab experiments names
1	Electronic Circuit Analysis - Lab	1. Determination of fT of a giventransistor.
		2. Voltage-Series FeedbackAmplifier
2	Analog Communications - Lab	Amplitude Modulation - Modulation &Demodulation
		Spectrum Analysis of Modulated signal usingSpectrumAnalyzer

III Year – I SEMESTER

S.no	Lab name	List of lab experiments names
1	Linear Integrated Circuits and Applications - Lab	Study of OP AMPs – IC 741, IC 555, IC 565, IC 566, IC 1496 -functioning, parameters and Specifications.
		OP AMP Applications – Adder, Subtractor, ComparatorCircuits.

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III Year – II SEMESTER

S.no	Lab name	List of lab experiments names
1	VLSI Lab	1. 4-bit ripple carry and carry look ahead adder using behavioural, dataflow and structural modeling
		a) 16:1 mux through 4:1 mux b) 3:8 decoder realization through 2:4 decoder
2	Digital Signal Processing Lab	Verify the Linear Convolution of two DT signals a) UsingMATLAB b) Using Code ComposerStudio(CCS)
		Verify the Circular Convolution of two DTsignals a) UsingMATLAB b) Using Code ComposerStudio(CCS)

IV Year – I SEMESTER

S.no	Lab name	List of lab experiments names
1	Internet of Things Lab	1. Introduction to Raspberry Pi Board/ Arduino/NodeMCU.
		2.Familiarization with ARM keil MDK for programming and debugging an application on the PSoC 4 BLE chip and perform necessary software installation
2	Microwave and Optical Communication Engineering LAB	1. Reflex Klystron Characteristics.
		2. Gunn Diode Characteristics.

II Year – I SEMESTER

S.no	Lab name	List of lab experiments names
1	Python programming lab	Write a program that asks the user for a weight in kilograms and converts it to pounds. There are 2.2 pounds in a kilogram.
		Write a program that asks the user to enter three numbers (use three separate input statements). Create variables called total and average that hold the sum and average of the three numbers and print out the values of total and average.
2	Data Structures through C++ Lab	Write a main function to create objects of DISTANCE class. Input two distances and output the sum.

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