GOVERNMENT DEGREE COLLEGE

RAYACHOTY, ANNAMAYYA DISTRICT, A.P.516269

(Accredited with C grade by NAAC)

Department of Physics

COs & PSOs MAPPING

B.Sc. PHYSICS

UNDER CBCS FRAMEWORK

WITH EFFECT FROM 2015-16

PROGRAM SPECIFIC OUTCOMES FOR B.Sc. PHYSICS

Students after successful completion of B.Sc. PHYSICS will be able to:	
PSO-1	Comprehend physics principles and their applications in the problems of everyday life.
PSO-2	Possess industry-specific skills for the existing industrial jobs, and for developing new technologies.
PSO-3	Understand the advanced methods of scientific inquiry and develop skills for extensive research.
PSO-4	Develop skills for understanding scientific literature and creating scientific communication in the written, audio and video forms.
PSO-5	Get motivated to pursue higher studies, research, attempt competitive examinations leading to career opportunities in industries.

Title of the Course: Mechanics and Properties of Matter

COs ⇩		PSOs ⇩				
		1	2	3	4	5
CO-1	understand and apply the concepts of scalar and vector fields, calculate the gradient of a scalar field, determine the divergence and curl of a vector field.	✓			✓	✓
CO-2	apply the laws of motion, solve equations of motion for variable mass systems	✓	✓	✓		✓
CO-3	define a rigid body and comprehend rotational kinematic relations, derive equations of motion for rotating bodies, analyze the precession of a top and gyroscope, understand the precession of the equinoxes	✓			✓	✓
CO-4	define central forces and provide examples, understand the characteristics and conservative nature of central forces, derive equations of motion under central forces	✓	✓		✓	✓
CO-5	differentiate between Galilean relativity and the concept of absolute frames, comprehend the postulates of the special theory of relativity, apply Lorentz transformations, understand and solve problems	✓	✓	✓		✓

Title of the Course: Waves and Oscillations

COs ⇓		PSOs ⇓				
		1	2	3	4	5
CO-1	Understanding of simple harmonic motion (SHM) and its physical characteristics, including the ability to solve the differential equations governing SHM and gain practical skills in measuring physical properties such as rigidity modulus and gravitational acceleration using torsion and compound pendulums.	✓		✓	✓	✓
CO-2	Differentiate between damped and undamped oscillatory systems and understand the concepts of logarithmic decrement, relaxation time, and quality factor and to understand the behavior of forced oscillators and the phenomena of amplitude and velocity resonance.	✓		✓		✓
CO-3	Master the application of Fourier theorem to analyze complex periodic wave functions by evaluating Fourier coefficients for various waveforms. Develop problem-solving skills in the context of frequency domain analysis of periodic signals.	✓	✓		✓	✓
CO-4	Gain knowledge about the propagation of transverse waves along stretched strings and longitudinal vibrations in bars, including the solutions to the wave equations in various boundary conditions. Understand the concepts of overtones, harmonics, energy transport, and transverse impedance.	✓		✓		✓
CO-5	Understand the properties, production, and detection of ultrasonic waves, including methods such as piezoelectric and magnetostriction techniques. Learn to determine the wavelength of ultrasonic waves and explore their various practical applications.		✓	✓		✓

Title of the Course: Wave Optics

COs ⇩		PSOs ⇩				
		1	2	3	4	5
CO-1	Understand the phenomenon of interference of light and its formation in (i) Lloyd's single mirror due to division of wave front and (ii) Thin films, Newton's rings and Michelson interferometer due to division of amplitude.	✓		✓	✓	✓
CO-2	Distinguish between Fresnel's diffraction and Fraunhoffer diffraction and observe the diffraction patterns in the case of single slit and the diffraction grating. Describe the construction and working of zone plate and make the comparison of zone plate with convex lens	✓	✓		✓	✓
CO-3	Explain the various methods of production of plane, circularly and polarized light and their detection and the concept of optical activity.	✓			✓	✓
CO-4	Explain about the different aberrations in lenses and discuss the methods of minimizing them. Comprehend the basic principle of laser, the working of He-Ne laser and Ruby lasers and their applications in different fields.	✓		✓	✓	✓
CO-5	Understand the basic principles of fiber optic communication and explore the field of Holography and Nonlinear optics and their applications.	✓	✓	✓		✓

Title of the Course: Thermodynamics and Radiation Physics

COs ⇓		PSOs ⇓				
		1	2	3	4	5
CO-1	Understand the basic aspects of kinetic theory of gases, Maxwell-Boltzman distribution law, equipartition of energies, mean free path of molecular collisions and the transport phenomenon in ideal gases	✓	✓		✓	✓
CO-2	Gain knowledge on the basic concepts of thermodynamics, the first and the second law of thermodynamics, the basic principles of refrigeration, the concept of entropy, the thermodynamic potentials and their physical interpretations. Understand the working of Carnot's ideal heat engine, Carnot cycle and its efficiency.	✓		✓		✓
CO-3	Develop critical understanding of concept of Thermodynamic potentials, the formulation of Maxwell's equations and its applications.	✓	✓		✓	✓
CO-4	Differentiate between principles and methods to produce low temperature and liquefy air and also understand the practical applications of substances at low temperatures.	✓		✓		✓
CO-5	Examine the nature of black body radiations and the basic theories.	✓	✓	✓	✓	✓

Title of the Course: Electricity, Magnetism and Electronics

COs ⇓		PSOs ⇓				
		1	2	3	4	5
CO-1	Understand the Gauss law and its application to obtain electric field in different cases and formulate the relationship between electric displacement vector, electric polarization, Susceptibility, Permittivity and Dielectric constant. Distinguish between the magnetic effect of electric current and electromagnetic induction and apply the related laws in appropriate circumstances.	✓	✓		✓	✓
CO-2	Understand Biot and Savart's law and Ampere's circuital law to describe and explain the generation of magnetic fields by electrical currents.	✓		✓		✓
CO-3	Develop an understanding on the unification of electric and magnetic fields and Maxwell's equations governing electromagnetic waves.	✓	✓		✓	✓
CO-4	Phenomenon of resonance in LCR AC-circuits, sharpness of resonance, Q-factor, Power factor and the comparative study of series and parallel resonant circuits.	✓		✓		✓
CO-5	Describe the operation of p-n junction diodes, zener diodes, light emitting diodes and transistors. Understand the operation of basic logic gates and universal gates and their truth tables.	✓	✓	✓		✓

Title of the Course: Modern Physics

COs ⇩		PSOs ⇩				
		1	2	3	4	5
CO-1	Develop an understanding on the concepts of Atomic and Modern Physics, basic elementary quantum mechanics and nuclear physics.	✓	✓		✓	✓
CO-2	Develop critical understanding of concept of Matter waves and Uncertainty principle	✓		✓		✓
CO-3	Get familiarized with the principles of quantum mechanics and the formulation of Schrodinger wave equation and its applications.	✓		✓	✓	✓
CO-4	Examine the basic properties of nuclei, characteristics of nuclear forces, salient features of nuclear models and different nuclear radiation detectors. Classify Elementary particles based on their mass, charge, spin, half-life and interaction	✓			✓	✓
CO-5	Get familiarized with the nano materials, their unique properties and applications. Increase the awareness and appreciation of superconductors and their practical applications.		✓	✓		

Title of the Course: Analog and Digital Electronics

COs ⇩		PSOs ⇩				
		1	2	3	4	5
CO-1	Explain the advantages of Field Effect Transistors (FETs) over Bipolar Junction Transistors (BJTs) in terms of input impedance, thermal stability, and noise performance.	✓	✓		✓	✓
CO-2	the construction and operating principles of FETs and MOSFETs, including both enhancement and depletion types. Analyze the drain and transfer characteristics of MOSFETs and understand their practical applications in electronic circuits.	✓		✓		✓
CO-3	understand the characteristics of ideal and practical Op-Amps, with a focus on IC 741, and explain the internal block diagram and key parameters such as offset voltages, currents, CMRR, and slew rate.	✓	✓		✓	✓
CO-4	learn the pin configuration and internal architecture of the IC 555 timer. Design and analyze circuits using the 555 timer in astable and monostable multivibrator modes. Understand applications of monostable multivibrators such as frequency dividers and pulse stretchers, and applications of astable multivibrators such as square wave oscillators and free-running ramp generators.	✓		✓	✓	
CO-5	learn the different types of flip-flops including RS, Clocked SR, JK, D, T, and Master-Slave flip-flops, along with their operations and characteristics. Perform conversions between different types of flip-flops, understanding the logic and design behind these conversions.		✓	✓		✓

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GOVERNMENT DEGREE COLLEGE

RAYACHOTY, ANNAMAYYA DISTRICT, A.P.516269

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Department of Physics

COs & PSOs MAPPING

B.Sc. PHYSICS

UNDER REVISED CBCS FRAMEWORK

WITH EFFECT FROM 2020-21

PROGRAM SPECIFIC OUTCOMES FOR B.Sc. PHYSICS

Students after successful completion of B.Sc. PHYSICS will be able to:	
PSO-1	Comprehend physics principles and their applications in the problems of everyday life.
PSO-2	Possess industry-specific skills for the existing industrial jobs, and for developing new technologies.
PSO-3	Understand the advanced methods of scientific inquiry and develop skills for extensive research.
PSO-4	Develop skills for understanding scientific literature and creating scientific communication in the written, audio and video forms.
PSO-5	Get motivated to pursue higher studies, research, attempt competitive examinations leading to career opportunities in industries.
PSO-6	Make aware and handle the different scientific instruments.
PSO-7	Apply the theoretical concepts by laboratory experiments and gain the knowledge of Physics through theory and practicals.

Title of the Course: Mechanics, Waves and Oscillations

COs ⇓		PSOs ⇓						
		1	2	3	4	5	6	7
CO-1	Understand Newton's laws of motion and motion of variable mass system and its application to rocket motion and the concepts of impact parameter, scattering cross section and apply the rotational kinematic relations, the principle and working of gyroscope and its applications and the processional motion of a freely rotating symmetric top.	✓		✓	✓	✓	✓	✓
CO-2	Comprehend the general characteristics of central forces and the application of Kepler's laws to describe the motion of planets and satellite in circular orbit through the study of law of Gravitation.	✓	✓	✓		✓		✓
CO-3	Understand postulates of Special theory of relativity and its consequences such as length contraction, time dilation, relativistic mass and mass-energy equivalence.	✓			✓	✓		
CO-4	Examine phenomena of simple harmonic motion and the distinction between undamped, damped and forced oscillations and the concepts of resonance and quality factor with reference to damped harmonic oscillator. Appreciate the formulation of the problem of coupled oscillations and solve them to obtain normal modes of oscillation and their frequencies in simple mechanical systems.	✓	✓	✓	✓	✓	✓	✓
CO-5	Figure out the formation of harmonics and overtones in a stretched string and acquire the knowledge on Ultrasonic waves, their production and detection and their applications in different fields.	✓	✓	✓		✓	✓	✓

Title of the Course: Wave Optics

COs ⇓		PSOs ⇓						
		1	2	3	4	5	6	7
CO-1	Understand the phenomenon of interference of light and its formation in (i) Lloyd's single mirror due to division of wave front and (ii) Thin films, Newton's rings and Michelson interferometer due to division of amplitude.	✓		✓	✓	✓	✓	✓
CO-2	Distinguish between Fresnel's diffraction and Fraunhoffer diffraction and observe the diffraction patterns in the case of single slit and the diffraction grating. Describe the construction and working of zone plate and make the comparison of zone plate with convex lens	✓	✓		✓	✓	✓	✓
CO-3	Explain the various methods of production of plane, circularly and polarized light and their detection and the concept of optical activity.	✓			✓	✓	✓	
CO-4	Explain about the different aberrations in lenses and discuss the methods of minimizing them. Comprehend the basic principle of laser, the working of He-Ne laser and Ruby lasers and their applications in different fields.	✓		✓	✓	✓		✓
CO-5	Understand the basic principles of fiber optic communication and explore the field of Holography and Nonlinear optics and their applications.	✓	✓	✓		✓	✓	

Title of the Course: Heat and Thermodynamics

COs ⇓		PSOs ⇓						
		1	2	3	4	5	6	7
CO-1	Understand the basic aspects of kinetic theory of gases, Maxwell-Boltzman distribution law, equipartition of energies, mean free path of molecular collisions and the transport phenomenon in ideal gases	✓	✓		✓	✓		✓
CO-2	Gain knowledge on the basic concepts of thermodynamics, the first and the second law of thermodynamics, the basic principles of refrigeration, the concept of entropy, the thermodynamic potentials and their physical interpretations. Understand the working of Carnot's ideal heat engine, Carnot cycle and its efficiency.	✓		✓		✓	✓	
CO-3	Develop critical understanding of concept of Thermodynamic potentials, the formulation of Maxwell's equations and its applications.	✓	✓		✓	✓	✓	✓
CO-4	Differentiate between principles and methods to produce low temperature and liquefy air and also understand the practical applications of substances at low temperatures.	✓		✓		✓	✓	✓
CO-5	Examine the nature of black body radiations and the basic theories.	✓	✓	✓	✓	✓	✓	

Title of the Course: Electricity, Magnetism and Electronics

COs ⇓		PSOs ⇓						
		1	2	3	4	5	6	7
CO-1	Understand the Gauss law and its application to obtain electric field in different cases and formulate the relationship between electric displacement vector, electric polarization, Susceptibility, Permittivity and Dielectric constant. Distinguish between the magnetic effect of electric current and electromagnetic induction and apply the related laws in appropriate circumstances.	✓	✓		✓	✓	✓	
CO-2	Understand Biot and Savart's law and Ampere's circuital law to describe and explain the generation of magnetic fields by electrical currents.	✓		✓		✓	✓	✓
CO-3	Develop an understanding on the unification of electric and magnetic fields and Maxwell's equations governing electromagnetic waves.	✓	✓		✓	✓	✓	✓
CO-4	Phenomenon of resonance in LCR AC-circuits, sharpness of resonance, Q- factor, Power factor and the comparative study of series and parallel resonant circuits.	✓		✓		✓	✓	
CO-5	Describe the operation of p-n junction diodes, zener diodes, light emitting diodes and transistors. Understand the operation of basic logic gates and universal gates and their truth tables.	✓	✓	✓		✓	✓	✓

Title of the Course: Modern Physics

COs ⇓		PSOs ⇓						
		1	2	3	4	5	6	7
CO-1	Develop an understanding on the concepts of Atomic and Modern Physics, basic elementary quantum mechanics and nuclear physics.	✓	✓		✓	✓	✓	✓
CO-2	Develop critical understanding of concept of Matter waves and Uncertainty principle	✓		✓		✓		
CO-3	Get familiarized with the principles of quantum mechanics and the formulation of Schrodinger wave equation and its applications.	✓		✓	✓	✓	✓	✓
CO-4	Examine the basic properties of nuclei, characteristics of nuclear forces, salient features of nuclear models and different nuclear radiation detectors. Classify Elementary particles based on their mass, charge, spin, half-life and interaction	✓			✓	✓	✓	
CO-5	Get familiarized with the nano materials, their unique properties and applications. Increase the awareness and appreciation of superconductors and their practical applications.		✓	✓				✓

Title of the Course: Analog and Digital Electronics

COs ⇓		PSOs ⇓						
		1	2	3	4	5	6	7
CO-1	Explain the advantages of Field Effect Transistors (FETs) over Bipolar Junction Transistors (BJTs) in terms of input impedance, thermal stability, and noise performance.	✓	✓		✓	✓	✓	
CO-2	the construction and operating principles of FETs and MOSFETs, including both enhancement and depletion types. Analyze the drain and transfer characteristics of MOSFETs and understand their practical applications in electronic circuits.	✓		✓		✓	✓	✓
CO-3	understand the characteristics of ideal and practical Op-Amps, with a focus on IC 741, and explain the internal block diagram and key parameters such as offset voltages, currents, CMRR, and slew rate.	✓	✓		✓	✓		✓
CO-4	learn the pin configuration and internal architecture of the IC 555 timer. Design and analyze circuits using the 555 timer in astable and monostable multivibrator modes. Understand applications of monostable multivibrators such as frequency dividers and pulse stretchers, and applications of astable multivibrators such as square wave oscillators and free-running ramp generators.	✓		✓	✓			
CO-5	learn the different types of flip-flops including RS, Clocked SR, JK, D, T, and Master-Slave flip-flops, along with their operations and characteristics. Perform conversions between different types of flip-flops, understanding the logic and design behind these conversions.		✓	✓		✓	✓	✓

Title of the Course: Applications of Electricity and Electronics

COs ⇓		PSOs ⇓						
		1	2	3	4	5	6	7
CO-1	Identify various components present in Electricity& Electronics Laboratory.	✓	✓		✓	✓	✓	✓
CO-2	Acquire a critical knowledge of each component and its utility (like resistors, capacitors, inductors, power sources etc.).	✓	✓	✓			✓	✓
CO-3	Demonstrate skills of constructing simple electronic circuits consisting of basic circuit elements.	✓	✓		✓		✓	
CO-4	Understand the need & Functionality of various DC & AC Power sources.	✓			✓		✓	✓
CO-5	Comprehend the design, applications and practices of various electrical & Electronic devices and also their trouble shooting.	✓	✓	✓		✓		✓

Title of the Course: Electronic Instrumentation

COs		PSOs						
		1	2	3	4	5	6	7
CO-1	Identify various facilities required to set up a basic Instrumentation Laboratory.	✓	✓		✓	✓	✓	
CO-2	Acquire a critical knowledge of various Electrical Instruments used in the Laboratory.	✓	✓	✓		✓		✓
CO-3	Demonstrate skills of using instruments like CRO, Function Generator, Multimeter etc. through hands on experience.	✓	✓		✓		✓	✓
CO-4	Understand the Principle and operation of different display devices used in the display systems and different transducers	✓	✓	✓	✓			✓
CO-5	Comprehend the applications of various biomedical instruments in daily life like B.P. meter, ECG, Pulse oxymeter etc. and know the handling procedures with safety and security	✓		✓		✓	✓	

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GOVERNMENT DEGREE COLLEGE

RAYACHOTY, ANNAMAYYA DISTRICT, A.P.516269

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Department of Physics

COs & PSOs MAPPING

B.Sc. HONOURS PHYSICS (MINOR)

4-YEARS UG HONOURS PROGRAM WITH SINGLE MAJOR AND ONE MINOR

WITH EFFECT FROM 2023-24

PROGRAM SPECIFIC OUTCOMES FOR B.Sc. HONOURS PHYSICS (MINOR)

Students after successful completion of B.Sc. PHYSICS will be able to:	
PSO-1	Comprehend physics principles and their applications in the problems of everyday life.
PSO-2	Possess industry-specific skills for the existing industrial jobs, and for developing new technologies.
PSO-3	Understand the advanced methods of scientific inquiry and develop skills for extensive research.
PSO-4	Develop skills for understanding scientific literature and creating scientific communication in the written, audio and video forms.
PSO-5	Get motivated to pursue higher studies, research, attempt competitive examinations leading to career opportunities in industries.
PSO-6	Make aware and handle the different scientific instruments.
PSO-7	Apply the theoretical concepts by laboratory experiments and gain the knowledge of Physics through theory and practicals.
PSO-8	Integrate knowledge from other disciplines such as mathematics, statistics, and business to enhance computing solutions and address complex problems.

Title of the Course: Mechanics and Properties of Matter

COs ⇩		PSOs ⇩							
		1	2	3	4	5	6	7	8
CO-1	understand and apply the concepts of scalar and vector fields, calculate the gradient of a scalar field, determine the divergence and curl of a vector field.	✓			✓	✓	✓	✓	✓
CO-2	apply the laws of motion, solve equations of motion for variable mass systems	✓	✓	✓		✓		✓	
CO-3	define a rigid body and comprehend rotational kinematic relations, derive equations of motion for rotating bodies, analyze the precession of a top and gyroscope, understand the precession of the equinoxes	✓			✓	✓			✓
CO-4	define central forces and provide examples, understand the characteristics and conservative nature of central forces, derive equations of motion under central forces	✓	✓		✓	✓	✓	✓	✓
CO-5	differentiate between Galilean relativity and the concept of absolute frames, comprehend the postulates of the special theory of relativity, apply Lorentz transformations, understand and solve problems	✓	✓	✓		✓	✓	✓	✓

Title of the Course: Wave Optics

COs ⇓		PSOs ⇓							
		1	2	3	4	5	6	7	8
CO-1	Understand the phenomenon of interference of light and its formation in (i) Lloyd's single mirror due to division of wave front and (ii) Thin films, Newton's rings and Michelson interferometer due to division of amplitude.	✓		✓	✓	✓	✓	✓	✓
CO-2	Distinguish between Fresnel's diffraction and Fraunhoffer diffraction and observe the diffraction patterns in the case of single slit and the diffraction grating. Describe the construction and working of zone plate and make the comparison of zone plate with convex lens	✓	✓		✓	✓	✓	✓	✓
CO-3	Explain the various methods of production of plane, circularly and polarized light and their detection and the concept of optical activity.	✓			✓	✓	✓		
CO-4	Explain about the different aberrations in lenses and discuss the methods of minimizing them. Comprehend the basic principle of laser, the working of He-Ne laser and Ruby lasers and their applications in different fields.	✓		✓	✓	✓		✓	✓
CO-5	Understand the basic principles of fiber optic communication and explore the field of Holography and Nonlinear optics and their applications.	✓	✓	✓		✓	✓		✓

Title of the Course: Electricity, Magnetism and Electronics

COs ⇩		PSOs ⇩							
		1	2	3	4	5	6	7	8
CO-1	Understand the Gauss law and its application to obtain electric field in different cases and formulate the relationship between electric displacement vector, electric polarization, Susceptibility, Permittivity and Dielectric constant. Distinguish between the magnetic effect of electric current and electromagnetic induction and apply the related laws in appropriate circumstances.	✓	✓		✓	✓	✓		
CO-2	Understand Biot and Savart's law and Ampere's circuital law to describe and explain the generation of magnetic fields by electrical currents.	✓		✓		✓	✓	✓	
CO-3	Develop an understanding on the unification of electric and magnetic fields and Maxwell's equations governing electromagnetic waves.	✓	✓		✓	✓	✓	✓	✓
CO-4	Phenomenon of resonance in LCR AC-circuits, sharpness of resonance, Q- factor, Power factor and the comparative study of series and parallel resonant circuits.	✓		✓		✓	✓		✓
CO-5	Describe the operation of p-n junction diodes, zener diodes, light emitting diodes and transistors. Understand the operation of basic logic gates and universal gates and their truth tables.	✓	✓	✓		✓	✓	✓	✓

Title of the Course: Modern Physics

COs		PSOs							
		1	2	3	4	5	6	7	8
CO-1	Develop an understanding on the concepts of Atomic and Modern Physics, basic elementary quantum mechanics and nuclear physics.	✓	✓		✓	✓	✓	✓	
CO-2	Develop critical understanding of concept of Matter waves and Uncertainty principle	✓		✓		✓			✓
CO-3	Get familiarized with the principles of quantum mechanics and the formulation of Schrodinger wave equation and its applications.	✓		✓	✓	✓	✓	✓	
CO-4	Examine the basic properties of nuclei, characteristics of nuclear forces, salient features of nuclear models and different nuclear radiation detectors. Classify Elementary particles based on their mass, charge, spin, half-life and interaction	✓			✓	✓	✓		✓
CO-5	Get familiarized with the nano materials, their unique properties and applications. Increase the awareness and appreciation of superconductors and their practical applications.		✓	✓				✓	✓

Title of the Course: Applications of Electricity and Electronics

COs		PSOs							
		1	2	3	4	5	6	7	8
CO-1	Identify various components present in Electricity& Electronics Laboratory.	✓	✓		✓	✓	✓	✓	✓
CO-2	Acquire a critical knowledge of each component and its utility (like resistors, capacitors, inductors, power sources etc.).	✓	✓	✓			✓	✓	✓
CO-3	Demonstrate skills of constructing simple electronic circuits consisting of basic circuit elements.	✓	✓		✓		✓		✓
CO-4	Understand the need & Functionality of various DC & AC Power sources.	✓			✓		✓	✓	
CO-5	Comprehend the design, applications and practices of various electrical & Electronic devices and also their trouble shooting.	✓	✓	✓		✓		✓	✓

Title of the Course: Electronic Instrumentation

COs		PSOs							
		1	2	3	4	5	6	7	8
CO-1	Identify various facilities required to set up a basic Instrumentation Laboratory.	✓	✓		✓	✓	✓		✓
CO-2	Acquire a critical knowledge of various Electrical Instruments used in the Laboratory.	✓	✓	✓		✓		✓	✓
CO-3	Demonstrate skills of using instruments like CRO, Function Generator, Multimeter etc. through hands on experience.	✓	✓		✓		✓	✓	
CO-4	Understand the Principle and operation of different display devices used in the display systems and different transducers	✓	✓	✓	✓			✓	✓
CO-5	Comprehend the applications of various biomedical instruments in daily life like B.P. meter, ECG, Pulse oxymeter etc. and know the handling procedures with safety and security	✓		✓		✓	✓		✓

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