

**Shri Agrasen Kanya Post Graduate College
Bulanala/Parmanandpur Varanasi
Department of Statistics (UG)**

Programme/Class: Certificate	Year: First	Semester: First
Subject: Physics		
Course Code: B010101T	Course Title: Mathematical Physics & Newtonian Mechanics	
Course Outcomes (COs)		
<ol style="list-style-type: none"> 1. Recognize the difference between scalars, vectors, pseudo-scalars and pseudo-vectors. 2. Understand the physical interpretation of gradient, divergence and curl. 3. Comprehend the difference and connection between Cartesian, spherical and cylindrical coordinate systems. 4. Know the meaning of 4-vectors, Kronecker delta and Epsilon (Levi Civita) tensors. 5. Study the origin of pseudo forces in rotating frame. 6. Study the response of the classical systems to external forces and their elastic deformation. 7. Understand the dynamics of planetary motion and the working of Global Positioning System (GPS). 8. Comprehend the different features of Simple Harmonic Motion (SHM) and wave propagation. 		

Programme/Class: Certificate	Year: First	Semester: First
Subject: Physics		
Course Code: B010102P	Course Title: Mechanical Properties of Matter	
Course Outcomes (COs)		
<p>Experimental physics has the most striking impact on the industry wherever the instruments are used to study and determine the mechanical properties. Measurement precision and perfection is achieved through Lab Experiments. Online Virtual Lab Experiments give an insight in simulation techniques and provide a basis for modeling.</p>		

Programme/Class: Certificate	Year: First	Semester: Second
Subject: Physics		
Course Code: B010201T	Course Title: Thermal Physics & Semiconductor Devices	
Course Outcomes (COs)		
<ol style="list-style-type: none"> 1. Recognize the difference between reversible and irreversible processes. 2. Understand the physical significance of thermodynamical potentials. 3. Comprehend the kinetic model of gases w.r.t. various gas laws. 4. Study the implementations and limitations of fundamental radiation laws. 5. Utility of AC bridges. 6. Recognize the basic components of electronic devices. 7. Design simple electronic circuits. 8. Understand the applications of various electronic instruments. 		

Programme/Class: Certificate	Year: First	Semester: Second
Subject: Physics		
Course Code: B010202P	Course Title: Thermal Properties of Matter & Electronic Circuits	
Course Outcomes (COs)		
<p>Experimental physics has the most striking impact on the industry wherever the instruments are used to study and determine the thermal and electronic properties. Measurement precision and perfection is achieved through Lab Experiments. Online Virtual Lab Experiments give an insight in simulation techniques and provide a basis for modeling.</p>		

Programme/Class: Diploma	Year: Second	Semester: Third
Subject: Physics		
Course Code: B010301T	Course Title: Electromagnetic Theory & Modern Optics	
Course Outcomes (COs)		
<ol style="list-style-type: none"> 1. Better understanding of electrical and magnetic phenomenon in daily life. 2. To troubleshoot simple problems related to electrical devices. 3. Comprehend the powerful applications of ballistic galvanometer. 4. Study the fundamental physics behind reflection and refraction of light (electromagnetic waves). 5. Study the working and applications of Michelson and Fabry-Perot interferometers. 6. Recognize the difference between Fresnel's and Fraunhofer's class of diffraction. 7. Comprehend the use of polarimeters. 8. Study the characteristics and uses of lasers. 		

Programme/Class: Diploma	Year: Second	Semester: Third
Subject: Physics		
Course Code: B010302P	Course Title: Demonstrative Aspects of Electricity & Magnetism	
Course Outcomes (COs)		
<p>Experimental physics has the most striking impact on the industry wherever the instruments are used to study and determine the electric and magnetic properties. Measurement precision and perfection is achieved through Lab Experiments. Online Virtual Lab Experiments give an insight in simulation techniques and provide a basis for modeling.</p>		

Programme/Class: Diploma	Year: Second	Semester: Fourth
Subject: Physics		
Course Code: B010401T	Course Title: Perspectives of Modern Physics & Basic Electronics	
Course Outcomes (COs)		
<ol style="list-style-type: none"> 1. Recognize the difference between the structure of space & time in Newtonian & Relativistic mechanics. 2. Understand the physical significance of consequences of Lorentz transformation equations. 3. Comprehend the wave-particle duality. 4. Develop an understanding of the foundational aspects of Quantum Mechanics. 5. Study the comparison between various biasing techniques. 6. Study the classification of amplifiers. 7. Comprehend the use of feedback and oscillators. 8. Comprehend the theory and working of optical fibers along with its applications. 		

Programme/Class: Diploma	Year: Second	Semester: Fourth
Subject: Physics		
Course Code: B010402P	Course Title: Basic Electronics Instrumentation	
Course Outcomes (COs)		
<p>Basic Electronics instrumentation has the most striking impact on the industry wherever the components / instruments are used to study and determine the electronic properties. Measurement precision and perfection is achieved through Lab Experiments. Online Virtual Lab Experiments give an insight in simulation techniques and Provide a basis for modeling.</p>		

Programme/Class: Degree	Year: Third	Semester: Fifth
Subject: Physics		
Course Code: B010501T	Course Title: Classical & Statistical Mechanics	
Course Outcomes (COs)		
<ol style="list-style-type: none"> 1. Understand the concepts of generalized coordinates and D'Alembert's principle. 2. Understand the Lagrangian dynamics and the importance of cyclic coordinates. 3. Comprehend the difference between Lagrangian and Hamiltonian dynamics. 4. Study the important features of central force and its application in Kepler's problem. 5. Recognize the difference between macrostate and microstate. 6. Comprehend the concept of ensembles. 7. Understand the classical and quantum statistical distribution laws. 8. Study the applications of statistical distribution laws. 		

Programme/Class: Degree	Year: Third	Semester: Fifth
Subject: Physics		
Course Code: B010502T	Course Title: Quantum Mechanics & Spectroscopy	
Course Outcomes (COs)		
<ol style="list-style-type: none"> 1. Understand the significance of operator formalism in Quantum mechanics. 2. Study the eigen and expectation value methods. 3. Understand the basis and interpretation of Uncertainty principle. 4. Develop the technique of solving Schrodinger equation for 1D and 3D problems. 5. Comprehend the success of Vector atomic model in the theory of Atomic spectra. 6. Study the different aspects of spectra of Group I & II elements. 7. Study the production and applications of X-rays. 8. Develop an understanding of the fundamental aspects of Molecular spectra. 		

Programme/Class: Degree	Year: Third	Semester: Fifth
Subject: Physics		
Course Code: B010503P	Course Title: Demonstrative Aspects of Optics & Lasers	
Course Outcomes (COs)		
<p>Experimental physics has the most striking impact on the industry wherever the instruments are used to study and determine the optical properties. Measurement precision and perfection is achieved through Lab Experiments. Online Virtual Lab Experiments give an insight in simulation techniques and provide a basis for modeling.</p>		

Programme/Class: Degree	Year: Third	Semester: Sixth
Subject: Physics		
Course Code: B010601T	Course Title: Solid State & Nuclear Physics	
Course Outcomes (COs)		
<ol style="list-style-type: none"> 1. Understand the crystal geometry w.r.t. symmetry operations. 2. Comprehend the power of X-ray diffraction and the concept of reciprocal lattice. 3. Study various properties based on crystal bindings. 4. Recognize the importance of Free Electron & Band theories in understanding the crystal properties. 5. Study the salient features of nuclear forces & radioactive decays. 6. Understand the importance of nuclear models & nuclear reactions. 7. Comprehend the working and applications of nuclear accelerators and detectors. 8. Understand the classification and properties of basic building blocks of nature. 		

Programme/Class: Degree	Year: Third	Semester: Sixth
Subject: Physics		
Course Code: B010602T	Course Title: Analog & Digital Principles & Applications	
Course Outcomes (COs)		
<ol style="list-style-type: none"> 1. Study the drift and diffusion of charge carriers in a semiconductor. 2. Understand the Two-Port model of a transistor. 3. Study the working, properties and uses of FETs. 4. Comprehend the design and operations of SCRs and UJTs. 5. Understand various number systems and binary codes. 6. Familiarize with binary arithmetic. 7. Study the working and properties of various logic gates. 8. Comprehend the design of combinational and sequential circuits. 		

Programme/Class: Degree	Year: Third	Semester: Sixth
Subject: Physics		
Course Code: B010603P	Course Title: Analog & Digital Circuits	
Course Outcomes (COs)		
<p>Analog & digital circuits have the most striking impact on the industry wherever the electronics instruments are used to study and determine the electronic properties. Measurement precision and perfection is achieved through Lab Experiments. Online Virtual Lab Experiments give an insight in simulation techniques and provide a basis for modeling.</p>		