Teaching Plan

Undergraduate Program

Dr Jibon Saikia, HoD

Department of Physics

Jagannath Barooah University, Jorhat-1 (Assam)

Semester	Title of Paper with Code	Unit	Topic	Details of Contents	Teaching Methods	Teaching Materials	Reference Books
UG Sem I	Mechanics PHYMJ-01 Allotted Lecture-10	04	Rotational Dynamics	Angular Momentum, Principle of conservation of Angular momentum, Torque, Moment of Inertia, Calculation of moment of Inertia for rectangular, cylindrical, and spherical bodies, Kinetic Energy of rotational body. Motion involving both translation and rotation.	Lecture, PPT Presentation, Discussion,	, Whiteboard LCD Projector	Elements of Properties of Matter, By D S Mathur

Semester	Title of Paper with Code	Unit	Topic	Details of Contents	Teaching Methods	Teaching Materials	Reference Books
UG Sem III	Waves & Optics PHYMJ-032 Allotted Lecture-05+10+14	04	Geometrical Optics	Aberration: Chromatic aberration, Spherical Aberration, Method of minimising the defects of monochromatic images, eyepiece- Ramsden and Huygen's eyepiece.	Lecture, PPT Presentation, Discussion,	, Whiteboard LCD Projector	1.A text book of Optics By: Brijlal & Subrahmonium 2. Optics By: Satya Prakash 3. Fundamentals of Optics By: Jenkins and White
		05	Wave Optics	Electromagnetic Nature of Light Huygen's Principle, Spatial & Temporal Coherence. **Interference:** Division of amplitude and wavefront, Young's Double slit experiment, Lioyd's Mirror, Fresnel's Bi-prism,Phase change pn reflection, Stoke's treatment, Intereference in Thin Films: Parallel and Wedge-shaped film, Fringes of equal inclination and fringes of equal thickness, Newton Rings: Measurement of wavelength and refractive index.			
		07		Polarisation: Linear, Circular & Elliptical Polarisation, Propagation of E M waves in			

				anisotropic media, Uniaxial and Biaxial crystal, Nicol Prism, Ordinary and Extraordinary refractive indices, half-wave plates, quarter-wave plates, Babinet Compensators. Rotatory polarisation: Optical Rotation, Biot's law, Laurent's half shade polarimeter			

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UG Sem V	Atomic and Molecular Physics PHYMJ-052 Allotted Lecture-10	01	Review of one-electron and two-electron atoms:	Review: Sommerfeld and Vector atom models, Quantum numbers associated with vector atom model, Spectrum of hydrogen, helium, and alkali atoms; Many-electron atoms Thomas Fermi model L-S and J-J coupling Equivalent and Non-equivalent electrons Lande interval Rule	Lecture, PPT Presentation, Discussion,	, Whiteboard LCD Projector	1. Atomic Physics By J B Rajam 2. Modern Physics By Murugestion

Semester	Title of Paper with Code	Unit	Topic	Details of Contents	Teaching Methods	Teaching Materials	Reference Books
UG Sem I	PHYSK-01 Basic Instrumental Skills Allotted Lecture-16	1,7 & 8	Basic Instrumental Skills	Basic Measurements Digital Instruments Digital Multimeters	Lecture, PPT Presentation, Demonstration with model preparation,	, Whiteboard LCD Projector, Laboratory instruments	1.A Textbook of Electrical Technology By Theraja 2. Electronic Devices and Circuits

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UG Sem III	PHYSK-03 Basic Instrumental Skills Allotted Lecture-16	1,7 & 8	Basic Instrumental Skills	Basic Measurements Digital Instruments Digital Multimeters	Lecture, PPT Presentation, Demonstration with model preparation,	, Whiteboard LCD Projector, Laboratory instruments	1.A Textbook of Electrical Technology By Theraja 2. Electronic Devices and Circuits

Teaching Plan

Postgraduate Program

Dr Jibon Saikia, Department of Physics

Jagannath Barooah University, Jorhat-1 (Assam)

Semester	Title of Paper with Code	Unit	Topic	Details of Contents	Teaching Methods	Teaching Materials	Reference Books
PG Sem III	PPHYD 302B	4. 3.	Nature of Photon Non classical Light	Nature Of Photon Vacuum Fluctuation Single Photon Experiment Coherent State, Squeezed State of light, Properties of Squeezed State, Detection of Squeezed state	Lecture, PPT Presentation,	Whiteboard LCD Projector,	1. Introductory Quantum Optics 2. Essentials of Quantum Optics