GOVT. COLLEGE BHERIAN (PEHOWA)
Lesson Plan: (FROM AUGUST 23 TO NOV.23)

Name Of Assistant/Associate Professor: MS. SWATI
Class and Section: B. SC II(Sem-03) Subject: PH-302 Physics- Paper VI: (Wave and optics-I)

Dates	Lesson Plan
WEEK1	**Unit-1: Interference I -** Interference by Division of Wave front: Young's double slit experiment, Coherence, Conditions of interference
WEEK-2	Fresnel's biprism and its applications to determine the wavelength of sodium light and thickness of a mica sheet
WEEK-3	Lloyd's mirror, Difference between Bi-prism and Llyod mirror fringes, phase change on reflection
WEEK-4	**Unit 2: Interference II-** Interference by Division of Amplitude: Plane parallel thin film, production of colors in thin films, classification of fringes in films.
WEEK -5	Interference due to transmitted light and reflected light, wedge shaped film, Newton's rings
WEEK-6	Interferometer: Michelson's interferometer and its applications to (i) Standardization of a meter (ii) determination of wavelength.
WEEK -7	**Unit- 3: Diffraction I** Fresnel's diffraction: Fresnel's assumptions and half period zones
WEEK-8	Rectilinear propagation of light, zone plate
WEEK- 9	Diffraction at a straight edge, rectangular slit and circular aperture, diffraction due to a narrow slit and wire.
WEEK 10	**Unit -4: Diffraction II** Fraunhoffer diffraction: single-slit diffraction
WEEK-11	Double-slit diffraction, N-slit diffraction, plane transmission granting spectrum
WEEK-12	Dispersive power of grating, limit of resolution, Rayleigh's criterion, resolving power of telescope and a grating.
WEEK 14	Resolving power of telescope and a grating
WEEK 15	Differences between prism and grating spectra
WEEK 16	REVISION
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Ms. Swati
Extension Lecturer
Department Of Physics

GOVT. COLLEGE BHERIAN, SESSION 2023-24
Lesson Plan: (from JULY 2023 TO NOVEMBER 2023)

Name of Assistant/Associate Professor: MS. SWATI
Class and Section: B. SC III (Sem-05) Subject: - PH-502 (Paper – Nuclear Physics (Physics lab)

DATES	LESSON PLAN
WEEK 1	**Unit I: Nuclear Structure and Properties of Nuclei** Nuclear composition (p-e and p-n hypotheses), Nuclear properties; Nuclear size, Practical Lab G1.
WEEK 2	Spin, parity, statistics, magnetic dipole moment, quadruple moment (shape concept). Determination of mass by Bain-Bridge, Practical Lab G1.
WEEK 3	Bain-Bridge and Jordan mass spectrograph. Determination of charge by Mosley Law Practical Lab G1.
WEEK-4	Determination of size of nuclei by Rutherford Back Scattering. mass and binding energy, systematic of nuclear binding energy, nuclear stability, Practical Lab G1.
WEEK- 5	Revision Unit I **Unit II: Nuclear Radiation decay Processes** Alpha-disintegration and its theory, Practical Lab G1.
WEEK- 6	Energetics of alpha-decay, Origin of continuous beta spectrum (neutrino hypothesis) Types of beta-decay and energetics of beta-decay. Nature of gamma rays, Energetics of gamma rays. Practical Lab G1.
WEEK -7	**Radiation interaction** Interaction of heavy charged particles (Alpha particles); Energy loss of heavy charged particle (idea of Bethe formula, no derivation)., Practical Lab G1
WEEK- 8	Range and straggling of alpha particles. Geiger-Nuttal law. Interaction of light charged particle (Beta-particle), Energy loss of beta-particles (ionization), Range of electrons, absorption of beta-particles. Interaction of Gamma Ray , Practical Lab G1
WEEK- 9	Passage of Gamma radiations through matter (Photoelectric, Compton and pair production effect) electron-positron annihilation. Absorption of Gamma rays (Mass attenuation coefficient) and its application, Practical Lab Gp1
WEEK-10	Revision Unit II **Unit III: Nuclear Accelerators** Linear accelerator , Tendem accelérator, Practical Lab G1
WEEK-11	Cyclotron and Betatron accelerators. **Nuclear Radiation** Detectors. Gas filled counters, Practical Lab G1
WEEK- 12	Ionization chamber, proportional counter, G.M. Counter (detailed study), Scintillation counter and semiconductor detector, Practical Lab G1
WEEK-13	**Unit IV: Nuclear reactions.** Nuclear reactions, Elastic scattering, Inelastic scattering, Nuclear disintegration, Photonuclear reaction, Practical Lab G1.
WEEK-14	Radiative capture, Direct reaction, Heavy ion reactions and spallation Reactions. Conservation laws, Q-value and reaction threshold. **Nuclear Reactors.** Nuclear Reactors Practical Lab G1. .
WEEK- 15	General aspects of Reactor Design. Nuclear fission (Principle, construction, working and use) , Nuclear fusion reactors (Principle, construction, working and use) Practical Lab G1.

WEEK- 16	DIWALI VACATION
WEEK- 17	REVESION
EXAM ONWARDS	

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GOVT. COLLEGE BHERIAN

GOVT. COLLEGE BHERIAN, SESSION 2023-24

Lesson Plan: (From AUGUST 2023 to December 2023)

Name of Assistant/Associate Professor: MS. SWATI
Semester -01 Subject: Basic IT Tools Course Code- B23-SEC-103

Dates	Lesson Plan
WEEK1	**UNIT-1** Introduction to Computer: Computer and Latest IT gadgets, Evolution of Computers & its applications
WEEK-2	Basics of Hardware and Software, Application Software, Systems Software
WEEK-3	Utility Software. Central Processing Unit, Input devices, Output devices
WEEK-4	Computer Memory & storage, Mobile Apps. Revision unit-1
WEEK -5	**UNIT-2** Introduction to Operating System, Functions of the Operating system, Operating Systems for Desktop and Laptop
WEEK-6	Operating Systems for Mobile Phone and Tablets, User Interface for Desktop and Laptop
WEEK -7	Task Bar, Icons & shortcuts, Running an Application, Operating System Simple Setting, Changing System Date and Time, Changing Display Properties
WEEK-8	To Add or Remove Program and Features, Adding, Removing & Sharing Printers, File and Folder Management
WEEK- 9	**UNIT-3** Introduction to Internet Wide Web, Basic of Computer Networks Local Area Network (LAN), Wide Area Network (WAN)
WEEK 10	Network Topology, Internet, Applications of Internet, Website Address and URL, Popular Web Browsers (Internet Explorer/Edge, Chrome, Mozilla Firefox, Opera

	etc.), Popular Search Engines, Searching on the Internet.
WEEK-11	**UNIT-4** E-mail: Using E-mails, Opening Email account, Mailbox: Inbox and Outbox, Creating and Sending a new E-mail
WEEK-12	Replying to an E-mail message, forwarding an E-mail message
WEEK 13	Searching emails, Attaching files with email, Email Signature
WEEK 14	Social Networking: Facebook, Twitter, LinkedIn, Instagram
WEEK 15	Instant Messaging (WhatsApp, Facebook Messenger, Telegram), Introduction to Blogs, Digital Locker
WEEK 16	DIWALI VACATION
WEEK 17	REVISION

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GOVT COLLEGE BHERIAN, SESSION 2023-24

Lesson Plan: (~~from FEB. 24 to JUNE. 24~~ AUG to NOV.) (from Aug 23 to Dec-23)

Name of Assistant/Associate Professor: MS. SWATI
Class and Section: B. SC I (Sem-I) Subject: CC/MCC (Mechanics) Course code- B23-PHY-101

Dates	Lesson Plan
WEEK1	**UNIT-1** **Fundamentals of Dynamics**: Rigid body, Moment of Inertia, Radius of Gyration, Theorems of perpendicular and parallel axis (with proof)
WEEK-2	Hollow sphere, Rectangular plate, Square plate, Solid cone, Triangular plate, Torque, Rotational Kinetic Energy, Angular momentum, Law of conservation of angular momentum
WEEK-3	Rolling motion, condition for pure rolling, acceleration of body rolling down an inclined plane, Fly wheel, Moment of Inertia of an irregular body.
WEEK-4	**UNIT-II** **Elasticity:** Deforming force, Elastic limit, stress, strain and their types, Hooke's law, Modulus of rigidity, Relation between shear angle and angle of twist, elastic energy stored/volume in an elastic body
WEEK-5	Elongation produced in heavy rod due to its own weight and elastic potential energy stored in it, Tension in rotating rod, Poisson's ratio and its limiting value, Elastic Constants and their relations
WEEK -6	Torque required for twisting cylinder, Hollow shaft is stiffer than solid one. Bending of beam, bending moment and its magnitude, Flexural rigidity
WEEK-7	Geometrical moment of inertia for beam of rectangular cross-section and circular cross-section. Bending of cantilever (loaded by a weight W at its free end)
WEEK-8	Weight of cantilever uniformly distributed over its entire length. Dispersion of a centrally loaded beam supported at its ends, determination of elastic constants for material of wire by Searle's method
WEEK-9	**UNIT-III** **Special Theory of Relativity:** Michelson's Morley experiment and its outcomes, Postulates of special theory of relativity, Lorentz Transformations, Simultaneity and order of events
WEEK-10	Lorentz contraction, Time dilation, Relativistic transformation of velocity, relativistic addition of velocities, variation of mass-energy equivalence
WEEK-11	Relativistic Doppler effect, relativistic kinematics, transformation of energy and momentum, transformation of force, Problems of relativistic dynamics
WEEK-12	**UNIT-4** **Gravitation and central force motion:** Law of gravitation, Potential and field due to spherical shell and solid sphere. Motion of a particle under central force field
WEEK-13	Two body problem and its reduction to one body problem and its solution, compound pendulum or physical pendulum in form of elliptical lamina and expression of time period
WEEK-14	Determination of g by means of bar pendulum, Normal coordinates and normal modes, Normal modes of vibration for given spring mass system
WEEK-15	Possible angular frequencies of oscillation of two identical simple pendulums of length (l) and small bob of mass (m0 joined together with spring of spring constant k)
WEEK-16	REVISION
EXAM ONWARDS	

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