COLLEGE: MBP GOVT. P.G. COLLEGE, ASHIANA, LUCKNOW

ACADEMIC CALENDAR : SESSION- (2021-2022)

NAME OF TEACHER: DR. M. TARIQ

DEPARTMENT: DEPARTMENT OF **PHYSICS**

CLASS: BSC (NEP)-**I** YEAR (**I SEMESTER**) (APPLICABLE FROM SEPTEMBER 2021)(CREDITS:04)

S.NO.	CLASS (YEAR, SEMESTER)	PAPER	UNIT	TOPIC NAME	MONTHLY / WEEKLY PLAN	TEACHING PEDAGOGY	LEARNING OUTCOMES	ANY OTHER DETAIL
01	02	03	04	05	06	07	08	09
1	BSC (NEP) – I YEAR, I SEMESTER CREDITS-4 T:04	P-1 (MAJOR & MINOR) PHY-101- MECHANICS AND WAVE MOTION		**Course Outcomes:** 1. The students would clearly understand the conflict between Newtonian mechanics and Special Relativity and thus would know how the progress of the revolutionary scientific ideas is made through logical evidences and observations. 2. They would be able to understand the differences between inertial and noninertial frames and see how pseudo-forces arise in non-inertial frames. 3. They would have a clear understanding of the dynamics of conservative and non-conservative forces in real life such as in gravitational fields or mechanical systems having friction etc. 4. They would feel the thrill to know that the same set of laws that work for planetary and galactic motions also work in our daily life. Further, they would be able to do mathematical calculations with application of these laws to various objects and artificial satellites. 5. They would be able to understand and calculate various macroscopic elastic properties as the response of the widely used materials through the application of simple classical laws. 6. The students would be able to understand and apply the properties of oscillations (natural, damped and forced), and waves and appreciate their omnipresence in various phenomena around us.				
			UNIT-I	Galilean transformations of space and time and their relation to Newton's laws of motion. Strong and weak form of the Newton's third law of motion. Difference between Inertial and non-inertial frames. Action-at-a-distance and Mach's principle. Conclusions of	MIN. 14 LECTURES	ONLINE &OFFLINE TEACHING METHOD (NOTES IN FORM OF PDF,AUDIO/ VIDEO,CLASS ROOM TEACHING METHOD)	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS

					Michelson-Morley experiment. Chief arguments against Galilean relativity. Postulates of Special Relativity. Simple ideas of length contraction and time dilation. Energy and momentum in relativistic mechanics and modification of Newton's laws of motion. Concepts of gradient, divergence and curl of physical quantities. Simple application of Gauss's divergence and Stoke's curl theorems. Conservative and non-conservative forces, Conservation laws for energy and linear momentum and their relation to symmetries. Pseudo-forces in rotating frame. Coriolis force.				
				UNIT-II	Elastic and inelastic collisions and one and two dimensions. Centre of mass frame as the zero-momentum frame. Angular momentum, Torque, Conservation of angular momentum and its relation to isotropy of space. Rotational energy and inertia tensor. Moment of inertia for simple bodies (ring, disk, rod, solid and hollow sphere, solid and hollow cylinder, rectangular lamina). The combined translational and rotational motion of a rigid body on horizontal and inclined planes. 4 Elasticity,	MIN 14 LECTURES	ONLINE &OFFLINE TEACHING METHOD (NOTES IN FORM OF PDF,AUDIO/ VIDEO,CLASS ROOM TEACHING METHOD)	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS

					Relations between elastic constants. Twisting of hollow and solid cylinders. Torsional rigidity. Bending moment and Flexural rigidity in bending of beam. Geometrical moment of inertia. Depression for cantilever and supported beams.			
				UNIT-III	Reduction of a two-body central force problem in to one-body problem. Reduced mass for a pair of bodies. Relative and centre of mass motion with reduced mass. Motion of Planets, satellites and our solar system. Kepler's laws of planetary motion and their implications. Role of the inverse-square form of Newton's law of gravitation in determination of orbit. Motion of geo-synchronous and geo-stationary satellites. Elementary concepts of Global Positioning System (GPS) based on relativistic mechanics. Structure and motion of our Galaxy due to self gravity.	MIN 12 LECTURES	ONLINE &OFFLINE TEACHING METHOD (NOTES IN FORM OF PDF,AUDIO/ VIDEO,CLASS ROOM TEACHING METHOD)	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
				UNIT-IV	Differential equation of simple harmonic motion and its solution. Damped and Forced harmonic oscillations, Sharpness of Resonance. Quality factor. Plane progressive waves in fluid media and pressure and energy distribution along the waves. Transport of energy along strings.	MIN 12 LECTURES	ONLINE &OFFLINE TEACHING METHOD (NOTES IN FORM OF PDF,AUDIO/ VIDEO,CLASS ROOM TEACHING METHOD)	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS

			Reflection of waves from free and fixed boundaries and phase change at the boundaries. Principle of superposition of waves. Standing waves and resonance. Phase and group velocity.	
			References: **Text Books:** 1. Daniel Kleppner and Robert Kolenkow, "An Introduction to Mechanics", (Mc Graw Hill), 2017. 2e. 2. Charles Kittel, Walter D. Knight, Malvin A. Ruderman, Carl A. Helmholz, Burton J. Moyer, "Mechanics (In SI Units): Berkeley Physics Course Vol 1", McGraw Hill, 2017, 2e. 3. Richard P. Feynman, Robert B. Leighton, Matthew Sands, "The Feynman Lectures on Physics - Vol. 1", Pearson Education Limited, 2012. 4. Halliday, Resnick and Walker, "Principles of Physics", (Wiley) 2018, 10e. 5. Frank S. Crawford, Jr, "Waves": Berkeley Physics Course Vol 3", McGraw Hill, 2017. 6. D.S. Mathur, "Mechanics", S. Chand Publishing, 1981, 3e. 7. R.K. Shukla and Anchal Srivastava, "Mechanics" Published by: New Age International (P) Limited Publishers. **Web References:** 1. MIT Open Learning - Massachusetts Institute of Technology, https://openlearning.mit.edu/ 2. National Programme on Technology Enhanced Learning (NPTEL), https://www.youtube.com/user/nptelhrd 3. Uttar Pradesh Higher Education Digital Library, http://heecontent.upsdc.gov.in/SearchContent.aspx SwayamPrabha - DTH Channel, https://www.swayamprabha.gov.in/index.php/program/current_he/8	**FINAL EVALUATION THROUGH INTERNAL ASSESMENT UPLODED ON LU EXAM PORTAL**
2	**BSC (NEP) – I YEAR, I SEMESTER CREDITS-4**	**P-2 (MAJOR)**	**Course Outcomes:** 1. The student will get an introduction to the discipline of optics and its role in daily life. 2. The optics course will give the student a basic knowledge of interference, diffraction and polarization. 3. The student will be able to analyze and calculate interference between light waves and application of the theory to various interferometers along with their practical applications. 4. The student would know the conditions for near and far-field diffraction and be able to calculate the far-field diffraction from gratings and simple aperture functions. 5. The student would understand how the polarization of light changes at reflection and transmission at interfaces.	

T:04	PHY-102-OPTICS	UNIT-1	Electromagnetic nature of light; Superposition of light waves; Coherence, Spatial and temporal coherence; Interference, Division of Wavefront – Young's double slit experiment, Fresnel's Biprism, Lloyd's Mirror; Division of amplitude – Thin films (parallel and wedge shaped films), Newton's rings. Interferometers: Michelson's Interferometer, (i) Idea about form of fringes, (ii) Determination of wavelength, (iii) wavelength difference, (iv) refractive index and visibility of fringes; Fabry-Perot interferometer; Etalon	MIN 13 LECTURES	ONLINE &OFFLINE TEACHING METHOD (NOTES IN FORM OF PDF,AUDIO/ VIDEO,CLASS ROOM TEACHING METHOD)	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
		UNIT-II	Diffraction; Fresnel Diffraction - Half period zones, Zone plate, diffraction at a straight edge and narrow wire; Fraunhoffer Diffraction – Diffraction at circular aperture, diffraction at single and double slits with derivation of equation for intensity and visibility; Diffraction grating, principal maxima and missing orders.	MIN 13 LECTURES	ONLINE &OFFLINE TEACHING METHOD (NOTES IN FORM OF PDF,AUDIO/ VIDEO,CLASS ROOM TEACHING METHOD)	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
		UNIT-III	Resolving power; Rayleigh's criterion of resolution, Resolving power of grating and telescope. Polarization: polarization by reflection, polarizing angle, Brewster's law, Law of Malus; Polarization by dichroic crystals,	MIN 13 LECTURES	ONLINE &OFFLINE TEACHING METHOD (NOTES IN FORM OF PDF,AUDIO/ VIDEO,CLASS ROOM TEACHING METHOD)	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS

				birefringence, anisotropic crystals; Nicol prism, Retardation plates, Babinet compensator; Analysis of polarized light.				
			UNIT-IV	Optical activity and Fresnel's explanation; Specific rotation, Half shade and Biquartz polarimeters. Jones matrix, matrix representation of plane polarized waves, matrices for polarizers, retardation plates and rotators.	MIN 13 LECTURES	ONLINE &OFFLINE TEACHING METHOD (NOTES IN FORM OF PDF,AUDIO/ VIDEO,CLASS ROOM TEACHING METHOD)	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
				==**References:**== **Text Books:** 1. F.A. Jenkins and H.E. White, Fundamentals of Optics, Tata McGraw Hill. 2. Brij Lal and N. Subrahmaniyam, Optics, S. Chand. 3. E.Hecht, Optics, Pearson. 4. A.K.Ghatak, Optics, Tata Mc Graw Hill. **Web References:** 1. MIT Open Learning - Massachusetts Institute of Technology, https://openlearning.mit.edu/ 2. National Programme on Technology Enhanced Learning (NPTEL), https://www.youtube.com/user/nptelhrd 3. Uttar Pradesh Higher Education Digital Library, http://heecontent.upsdc.gov.in/SearchContent.aspx SwayamPrabha - DTH Channel, https://www.swayamprabha.gov.in/index.php/program/current_he/8				**FINAL EVALUATION THROUGH INTERNAL ASSESMENT UPLODED ON LU EXAM PORTAL**

COLLEGE: MBP GOVT. P.G. COLLEGE, ASHIANA, LUCKNOW

ACADEMIC CALENDAR : SESSION- (2021-2022)

NAME OF TEACHER: DR. M. TARIQ

DEPARTMENT: DEPARTMENT OF **PHYSICS**

CLASS: BSC (NEP)-I YEAR (**II SEMESTER**) (APPLICABLE FROM JANUARY 2022)

S.NO.	CLASS (YEAR, SEMESTER)	PAPER	UNIT	TOPIC NAME	MONTHLY/WEEKLY PLAN	TEACHING PEDAGOGY	LEARNING OUTCOMES	ANY OTHER DETAIL
01	02	03	04	05	06	07	08	09
1	BSC (NEP) – I YEAR, I I SEMESTER CREDITS-4 T:04	P-3 (MAJOR & MINOR) PHY-201-ELECTRICITY AND MAGNETISM		**Course Outcomes:** After successful completion of this course, students will: 1. Understand the basic mathematical concepts related to Electromagnetic fields, and use the understanding of calculus along with basic principles to solve problems encountered in science. 2. Comprehend and apply the understanding of fundamental laws and concepts in electricity and magnetism, primarily with regard to Maxwell's laws, to explain natural physical processes and related technological advancements. 3. Learn about the origin and basic properties of static as well as dynamic Electric and Magnetic fields, and the kinds of physical phenomena they generate - Electromagnetic waves and their properties. 4. Account for the importance of electricity and magnetism in society, especially with regard to technological applications. 5. Visualize and design experiments based on the basic concepts of electricity and magnetism, and obtain information in order to explore physical principles.				
			UNIT-I	Electrostatics: Electric charge & types of electric charge densities, Coulomb's Law. General expression for Electric field E. Electric flux, Gauss's law (applications included). Divergence & Curl of Electrostatic field. Line integral of Electric field, Electric potential (V), Electric field as negative of gradient of electric potential (E = - ∇V), conservative nature of Electrostatic field. Electric	MIN 12 LECTURES	ONLINE &OFFLINE TEACHING METHOD (NOTES IN FORM OF PDF,AUDIO/ VIDEO,CLASS ROOM TEACHING METHOD)	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS

					potential and Electric field due to a Dipole, and Quadrupole. Force and torque on a Dipole in uniform as well as non-uniform Electric field. Electrostatic Energy of a configuration of charges, and uniformly charged sphere. Electric fields in Matter: Polarization, Polarization vector (P), Bound charges, Electric displacement vector (D), Electric Susceptibility and Dielectric constant. Relation between E, P and D. Lorentz local field, Clausius-Mossotti equation, Debye equation.			
				UNIT-II	Magnetostatics: Magnetic effect of currents, Magnetic field (B), Biot-Savart's Law (applications included). Ampere's Circuital law and its applications. Divergence and Curl of magnetic field. Scalar and Vector magnetic potential. Forces on a moving charge. Magnetic Force on a current carrying wire and its loop. Torque on a current loop in a uniform Magnetic Field. Current loop as a magnetic dipole and its dipole moment. Magnetic Properties of Matter: Magnetization vector (M), Magnetic Intensity(H), Magnetic Susceptibility and permeability. Relation between B, M and H.	MIN 12 LECTURES	ONLINE &OFFLINE TEACHING METHOD (NOTES IN FORM OF PDF,AUDIO/ VIDEO,CLASS ROOM TEACHING METHOD)	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS

					Types of Magnetic materials. B-H curve and Hysteresis.			
				UNIT-III	Time Varying Electromagnetic Fields: Faraday's laws of Electromagnetic Induction and Lenz's law. Induced Electric field, non- conservative nature of Induced electric field. Self and Mutual Induction (applications included). Selfinductance of a solenoid and toroid, Mutual inductance of two Coils. Energy stored in Magnetic Field. Skin effect. Motion of Electron in a changing Magnetic field – Betatron equation. Theory and working of the moving coil Ballistic galvanometer (applications included).	MIN 12 LECTURES	ONLINE &OFFLINE TEACHING METHOD (NOTES IN FORM OF PDF,AUDIO/ VIDEO,CLASS ROOM TEACHING METHOD)	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
				UNIT-IV	Electromagnetic Waves: Equation of continuity of current, Displacement current, derivation of Maxwell's equations and physical significance of Maxwell Correction term. Electromagnetic waves in vacuum and isotropic Dielectric medium, Transverse nature of Electromagnetic waves, Energy density in Electromagnetic wave - Poynting vector.	MIN 14 LECTURES	ONLINE &OFFLINE TEACHING METHOD (NOTES IN FORM OF PDF,AUDIO/ VIDEO,CLASS ROOM TEACHING METHOD)	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
				References:				FINAL EVALUATION

			1. E.M. Purcell, "Electricity and Magnetism (In SI Units): Berkeley Physics Course Vol 2", McGraw Hill, (2017), 2e. 2. Richard P. Feynman, Robert B. Leighton, Matthew Sands, "The Feynman Lectures on Physics - Vol. 2", Pearson Education Limited, (2012). 3. David J. Griffiths, "Introduction to Electrodynamics" 4th Edition, (Cambridge Univ. Press 2020) 4. W.K.H Panofsky and M. Philips, "Classical Electricity and Magnetism" (Dover Books on Physics, 2012) 5. Arthur F. Kip, "Fundamentals of Electricity and Magnetism", (McGrawHill, 1968) 6. J.H. Fewkes& John Yarwood, "Electricity and Magnetism", Vol. I (Oxford Univ. Press, 1991). 7. B B Laud, "Electromagnetics", New Age International (P) Limited. 8. D.C. Tayal, "Electricity and Magnetism", Himalaya Publishing House Pvt. Ltd., 2019, 4e 9. N. Wadhwani, "Electricity and magnetism", PHI Learning, ISBN: 9788120339651, 9788120339651 10. R.K. Shukla, "Introduction to Electricity & Magnetism", HP Hamilton Limited. **WEB REFERENCES:** 1. MIT Open Learning - Massachusetts Institute of Technology, https://openlearning.mit.edu/ 2. National Programme on Technology Enhanced Learning (NPTEL), https://www.youtube.com/user/nptelhrd		**THROUGH INTERNAL ASSESMENT UPLODED ON LU EXAM PORTAL**

| 2 | BSC (NEP) – I YEAR,

I I SEMESTER

CREDITS-4

T:04 | **P-4**

(MAJOR)

PHY 202- MECHANICS,

ELECTRICITY & MAGNETISM

AND OPTICS LAB | ==**Course Outcomes:**==
Experimental physics has the most striking impact on the industry wherever the instruments are used to determine the thermal and electronic properties. The following outcomes are expected by this laboratory course:
1. Students will achieve measurement precision.
2. Students will verify the conceptual learning through experiments in these areas.
3. Students will better appreciate the theoretical concepts in mechanics, electricity and magnetism, and optics through experiments.
4. Online Virtual Lab Experiments are expected to give insight in the simulation techniques, and provide basis for modeling.
Lab Experiment List :
Students have to do total of 06 experiments from the following list taking any two experiments from each group. Students have to do three virtual experiments taking one each from the groups. | | |

| **(A)**

Mechanics: | 1. Determination of Young Modulus of the material of a beam by flexure
2. Determination of modulus of | MIN 12 LECTURES | ONLINE DISCUSSIONS & OFFLINE TEACHING METHOD | STUDENTS WILLGET THE UNDERSTANDING OF THE TOPIC DISCUSSED. | EVALUATION THROUGH PRACTICALS AND DISCUSSIONS |

						rigidity of a wire by statical method 3. Determination of 'g' by compound pendulum. 4. Determination of Surface Tension of water by capillary rise method. 5. Determination Coefficient of Viscosity of water. 6. Determination of the frequency of A.C. Mains			
				(B) **Optics**		1. Measurement of Dispersive power of a given prism 2. Determination of the wavelength of light by Newton's ring. 3. Measurement of height of tower by a Sextant 4. Verification of Brewster's Law 5. Determination of specific rotation of an optically active substance by polarimeter 6. Diffraction at a wire	MIN 12 LECTURES	ONLINE DISCUSSIONS & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH PRACTICALS AND DISCUSSIONS
				(C) **Electricity and Magnetism**		1. Determination of High resistance by leakage method. 2. Determination of Mutual Induction by Ballistic galvanometer. 3. Determination of Horizontal component of earth's magnetic field by earth inductor. 4. Determination of Magnetic field of a electro magnet by Ballistic galvanometer. 5. Determination of Time	MIN 12 LECTURES	ONLINE DISCUSSIONS & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH PRACTICALS AND DISCUSSIONS

				constant striking & extension Potential of neon bulb in CR circuit. 6. Magnetic field by Helmholtz coil.				

Online Virtual Lab Experiment List/Link MECHANICS
 MIT Open Learning - Massachusetts Institute of Technology, https://openlearning.mit.edu
/ Virtual Labs at Amrita Vishwa Vidyapeetham https://vlab.amrita.edu/?sub=1&brch=74
 1. Torque and angular acceleration of a fly wheel
2. Torsional oscillations in different liquids
3. Moment of inertia of flywheel
4. Newton's second law of motion
5. Ballistic pendulum
6. Collision balls
7. Projectile motion
8. Elastic and inelastic collision
 Online Virtual Lab Experiment List / Link OPTICS
 Virtual Labs at Amrita Vishwa Vidyapeetham https://vlab.amrita.edu/?sub=1&brch=189
 1. Newton's Rings: Wavelength of light
2. Newton's Rings: Refractive index of liquid
3. Brewster's angle determination
4. Laser beam divergence and spot size Virtual Labs at Amrita Vishwa Vidyapeetham
https://vlab.amrita.edu/index.php?sub=1&brch=281
5. Spectrometer: Refractive index of the material of a prism
6. Spectrometer: Dispersive power of a prism
 Online Virtual Lab Experiment List / Link
 ELECTRICITY AND MAGNETISM Virtual Labs at Amrita Vishwa Vidyapeetham
https://vlab.amrita.edu/?sub=1&brch=192
1. Tangent galvanometer
2. Magnetic field along the axis of a circular coil carrying current
3. Deflection magnetometer
4. Van de Graaff generator
5. Barkhausen effect
6. Temperature coefficient of resistance
7. Anderson's bridge 8. Quincke's method

				REFERENCES:	FINAL EVALUATION THROUGH INTERNAL PRACTICAL EXAMS UPLODED ON LU EXAM PORTAL
				1. B.L. Worsnop, H.T. Flint, "Advanced Practical Physics for Students", Methuen & Co., Ltd., London, 1962, 9e 2. S. Panigrahi, B. Mallick, "Engineering Practical Physics", Cengage Learning India Pvt. Ltd., 2015, 1e 3. Anchal Srivastava and R.K. Shukla,"Practical Physics (Electricity, Magnetism and Electronics)", Published by: New Age International (P) Limited Publishers 4. R.L. Boylestad, L. Nashelsky, "Electronic Devices and Circuit Theory", Prentice-Hall of India Pvt. Ltd., 2015, 11e 5. A. Sudhakar, S.S. Palli, "Circuits and Networks: Analysis and Synthesis", McGraw Hill, 2015, 5e **WEB REFERENCES:** Virtual Labs at Amrita Vishwa Vidyapeetham, https://vlab.amrita.edu/?sub=1&brch=194 Virtual Labs an initiative of MHRD Govt. of India, http://vlabs.iitkgp.ac.in/be/# Digital Platforms/Web Links of other virtual labs may be suggested /added to this lists by individual Universities	

COLLEGE: MBP GOVT. P.G. COLLEGE, ASHIANA, LUCKNOW
ACADEMIC CALENDAR : SESSION- (2021-2022)

NAME OF TEACHER: DR. M. TARIQ
DEPARTMENT: DEPARTMENT OF **PHYSICS**
CLASS: BSC-II YEAR (I I I SEMESTER)

S.NO.	CLASS (YEAR, SEMESTER)	PAPER	UNIT	TOPIC NAME	MONTHLY/ WEEKLY PLAN	TEACHING PEDAGOGY	LEARNING OUTCOMES	ANY OTHER DETAIL
01	02	03	04	05	06	07	08	09
I	BSC-II YEAR, I I I SEM	PAPER –I ELECTRICITY AND MAGNETISM	UNIT-I	ELECTROSTATICS...........	MIN. 10 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-II	MAGNETISM..........	MIN 10 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-III	ELECTROMAGNETIC INDUCTION.....	MIN 10 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-IV	DIELECTRICS.........	MIN 10 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			REFERENCE BOOK: 1. ELECTRICITY AND MAGNETISM BY EDWARD M. PURCELL (MCGRAW-HILL EDUCATION, 1986) 2. FUNDAMENTALS OF ELECTRICITY AND MAGNETISM BY ARTHUR F. KIP (MCGRAW-HILL, 1968)					**FINAL EVALUATION THROUGH INTERNAL ASSESMENT UPLODED ON LU EXAM PORTAL**

II	BSC-II YEAR, III SEM	PAPER-II **PRACTICALS**		1.TO STUDY THE TIME CONSTANT IN A C.R. CIRCUIT. 2.TO STUDY THE SOLID STATE COMMON POWER SUPPLY. 3.TO DETERMINE THE FIELD ALONG THE AXIS OF HELMHOLTZ COIL. 4.TO MEASURE MAGNETIC FIELD USING A BALLISTIC GALVANOMETER. 5.TO DETERMINE THE CAPACITY OF CONDENSOR BY ABSOLUTE METHOD. 6.TO DETERMINE THE COEFFICIENT OF MUTUAL INDUCTION BETWEEN TWO COILS. 7.TO DETERMINE HIGH RESISTANCE BY LEAKAGE METHOD. 8.TO STUDY THE CHARACTERISTICS OF JUNCTION AND ZENER DIODES. 9.TO STUDY THE CHARACTERISTICS OF P-N-P TRANSISTOR. 10.TO MEASURE 'L' & 'C' BY A.C. BRIDGE	MIN 40 LECTURES	ONLINE DISCUSSIONS & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDIN G OF THE TOPIC DISCUSSED.	EVALUATION THROUGH PRACTICALS AND DISCUSSIONS
								FINAL EVALUATION THROUGH PRACTICALS UPLODED ON LU EXAM PORTAL

COLLEGE: MBP GOVT. P.G. COLLEGE, ASHIANA, LUCKNOW
ACADEMIC CALENDAR : SESSION- (2021-2022)

NAME OF TEACHER: DR. M. TARIQ
DEPARTMENT: DEPARTMENT OF **PHYSICS**
CLASS: BSC-II YEAR (**IV SEMESTER**)

XS.NO.	CLASS (YEAR, SEMESTER)	PAPER	UNIT	TOPIC NAME	MONTHLY/WEEKLY PLAN	TEACHING PEDAGOGY	LEARNING OUTCOMES	ANY OTHER DETAIL
01	02	03	04	05	06	07	08	09
I	BSC-II, YEAR, IV SEM	PAPER –I THERMAL PHYSICS AND ELEMENTARY STATISTICAL MECHANICS	UNIT-I	THERMODYNAMICS...........	MIN. 10 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-II	KINETIC THEORY OF GASES..........	MIN 10 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-III	THEORY OF RADIATION.....	MIN 10 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-IV	STATISTICAL MECHANICS.........	MIN 10 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			REFERENCE BOOK: 1.THERMAL PHYSICS - S. GARG, R. BANSAL AND C. GHOSH (MCGRAW HILL EDUCATION 1993)					FINAL EVALUATION THROUGH

								INTERNAL ASSESMENT UPLODED ON LU EXAM PORTAL
			2.A TREATISE ON HEAT - MEGHNAD SAHA, AND B.N. SRIVASTAVA (INDIAN PRESS 1969)					
II	BSC-II, YEAR, IV SEM	PAPER-II ELEMENTS OF MODERN PHYSICS	UNIT-1	INADEQUACIES OF CLASSICAL MECHANICS......	MIN 10 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-II	HEISENBERG'S UNCERTAINTY PRINCIPLE AND ITS APPLICATIONS.....	MIN 10 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-III	CONTINUITY OF WAVE FUNCTION.......	MIN 10 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-IV	BOHR ATOMIC MODEL........	MIN 10 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			REFERENCE BOOK: 1. CONCEPTS OF MODERN PHYSICS- ARTHUR BEISER (MCGRAW-HILL, 2009). 2. MODERN PHYSICS- JOHN R. TAYLOR, CHRIS D. ZAFIRATOS, MICHAEL A.DUBSON (PHI LEARNING2009).					FINAL EVALUATION THROUGH INTERNAL ASSESMENT UPLODED ON LU EXAM PORTAL

COLLEGE: MBP GOVT. P.G. COLLEGE, ASHIANA, LUCKNOW
ACADEMIC CALENDAR : SESSION- (2021-2022)

NAME OF TEACHER: DR. M. TARIQ
DEPARTMENT: DEPARTMENT OF **PHYSICS**
CLASS: BSC-III YEAR (**V SEMESTER**)

XS.NO.	CLASS (YEAR, SEMESTER)	PAPER	UNIT	TOPIC NAME	MONTHLY/WEEKLY PLAN	TEACHING PEDAGOGY	LEARNING OUTCOMES	ANY OTHER DETAIL
01	02	03	04	05	06	07	08	09
I	BSC-III YEAR, V SEM	PAPER –I ELECTRONICS	UNIT-I	DIODES..........	MIN. 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-II	TRANSISTORS..........	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-III	FIELD EFFECT TRANSISTORS.....	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-IV	NUMBER SYSTEM AND CODES.........	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			REFERENCE BOOK: 1.SEMICONDUCTOR DEVICES : KANAAN KANO 2.ELECTRONIC PRINCIPLES : A P MALVINO					**FINAL EVALUATION THROUGH INTERNAL ASSESMENT**

								UPLODED ON LU EXAM PORTAL
II	BSC-III YEAR, V SEM	PAPER-II NUCLEAR PHYSICS	UNIT-1	GENERAL PROPERTIES OF NUCLEUS......	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-II	NUCLEAR MODELS	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-III	NUCLEAR REACTIONS.......	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-IV	ELEMENTARY PARTICLES........	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			REFERENCE BOOK: 1.INTRODUCTION TO THE PHYSICS OF NUCLEI & PARTICLES : R.A.DUNLAP (THOMSON ASIA,2004) 2.RADIATION DETECTION AND MEASUREMENT : G.F. KNOLL (JOHN WILEY & SONS ,2000).					FINAL EVALUATION THROUGH INTERNAL ASSESMENT UPLODED ON LU EXAM PORTAL
III	BSC-III YEAR, V SEM	PAPER-III PHYSICS PRACTICALS		**1.**TO STUDY THE CHARACTERISTICS OF FIELD EFFECT TRANSISTOR **2.**STUDY OF FET AS A VOLTAGE VARIABLE RESISTOR (VVR) AND APPLICATION OF FET AS A VVR IN VOLTAGE CONTROLLED ATTENUATOR (VCA) **3.**TO STUDY THE FREQUENCY RESPONSE OF RC COUPLED TRANSISTOR AMPLIFIER **4.**STUDY OF IC AMPLIFIER **5.**STUDY OF LOGIC GATES **6.**TO DETERMINE THE VELOCITY	MIN 48 LECTURES	ONLINE DISCUSSIONS & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH PRACTICALS AND DISCUSSIONS

			OF SOUND BY CRO **7**.TO DETERMINE STEFAN'S CONSTANT **8**.TO STUDY SERIES AND PARALLEL LCR CIRCUIT **9**.TO STUDY CLIPPER AND CLAMPER CIRCUITS.			
			REFERENCE BOOK: 1. ADVANCED PRACTICAL PHYSICS FOR STUDENTS: B.L. WORSNOP AND H.T. FLINT, 1971, ASIA PUBLISHING HOUSE. 2. A TEXT BOOK OF PRACTICAL PHYSICS: I. PRAKASH AND RAMAKRISHNA 11TH EDITION, KITAB MAHAL. 3.A LABORATORY MANUAL OF PHYSICS FOR UG CLASSES: D.P. KHANDELWAL, 1985, VIKAS PUBLICATIONS.			**FINAL EVALUATION THROUGH PRACTICALS UPLODED ON LU EXAM PORTAL**

COLLEGE: MBP GOVT. P.G. COLLEGE, ASHIANA, LUCKNOW
ACADEMIC CALENDAR : SESSION- (2021-2022)

NAME OF TEACHER: DR. M. TARIQ
DEPARTMENT: DEPARTMENT OF **PHYSICS**
CLASS: BSC-III YEAR (**VI SEMESTER**)

XS.NO.	CLASS (YEAR, SEMESTER)	PAPER	UNIT	TOPIC NAME	MONTHLY/WEEKLY PLAN	TEACHING PEDAGOGY	LEARNING OUTCOMES	ANY OTHER DETAIL
01	02	03	04	05	06	07	08	09
I	BSC-III YEAR, VI SEM	PAPER –I MATHEMATICAL METHODS AND NUMERICAL TECHNIQUES	UNIT-I	COMPLEX NUMBERS...........	MIN. 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-II	INITIAL AND BOUNDARY VALUE PROBLEMS..........	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-III	MEAN VALUE THEOREM.....	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-IV	NUMERICAL METHODS.........	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			REFERENCE BOOK: MATHEMATICAL METHODS FOR PHYSICISTS;WEBER,2005,HARRIS,ELSEVIER					**FINAL EVALUATION THROUGH INTERNAL ASSESMENT**

								UPLODED ON LU EXAM PORTAL
II	BSC-III YEAR, VI SEM	PAPER-II **ELEMENTS OF RELATIVISTIC AND CLASSICAL MECHANICS**	UNIT-1	MICHELSON-MORRELY......	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-II	SPACETIME DIAGRAMS	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-III	HOLONOMIC AND NON-HOLONOMIC CONSTRAINTS.......	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-IV	TWO BODY CENTRAL FORCE PROBLEM........	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			REFERENCE BOOK: INTRODUCTION TO SPECIAL RELATIVITY ; R. RESNICK (WILEY- EASTERN)					**FINAL EVALUATION THROUGH INTERNAL ASSESMENT UPLODED ON LU EXAM PORTAL**
III	BSC-III YEAR, VI SEM	PAPER-III **SOLID STATE PHYSICS**	UNIT-1	CRYSTAL STRUCTURE.....	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-II	CRYSTAL BINDINGS.......	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS

			UNIT-III	ELECTRICAL PROPERTIES OF MATERIALS........	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			UNIT-IV	MAGNETIC PROPERTIES OF MATTER.......	MIN 12 LECTURES	ONLINE & OFFLINE TEACHING METHOD	STUDENTS WILL GET THE UNDERSTANDING OF THE TOPIC DISCUSSED.	EVALUATION THROUGH ASSIGNMENTS AND DISCUSSIONS
			REFERENCE BOOK: 1. INTRODUCTION TO SOLID STATE PHYSICS: CHARLES KITTEL 2. SOLID STATE PHYSICS: ADRIANUS J. DEKKER					**FINAL EVALUATION THROUGH INTERNAL ASSESMENT UPLODED ON LU EXAM PORTAL**