

**DEPARTMENT OF PHYSICS
CITY COLLEGE**

**LESSON PLAN FOR THE UNDERGRADUATE COURSE
ACADEMIC YEAR 2022-2023**

Dr. Samapti Pal [Associate Professor]

Academic Year 2022-23	Name of Teacher	Class	Topics to be covered	No. of lectures
Odd Semesters 20.08.2022 onwards	Dr. Samapti Pal	B.Sc. Hons. Semester 1 CBCS Syllabus 2019	Core Course: CC1 Mathematical Physics I:Matrices	15
		B.Sc. Hons. Semester 3 CBCS Syllabus 2019	Core Course: CC7 Modern Physics:Radiation and Its nature	15
		B.Sc. Hons. Semester 5 CBCS Syllabus 2019	Core Course: CC11 Electromagnetic Theory:Polarization, Polarization in uniaxial crystals, Rotatory Polarization	30
Even Semesters 15.03.2023 onwards		B.Sc. Hons. Semester 2 CBCS Syllabus 2019	Core Course: CC4 Waves and Optics:Wave optics, Interference, Interferometers, Diffraction	30
		B.Sc. Hons. Semester 6 CBCS Syllabus 2019	Core Course: CC13 Digital Electronics:Digital Circuits (B), Implementation of different circuits, Data processing circuits, Sequential Circuits, Registers and Counters	30
		B.Sc. Hons. Semester 6 CBCS Syllabus 2019	Core Course: CC14 Solid State Physics:Crystal Structure, Elementary Lattice dynamics	15

Dr. Kausik Mukhopadhyay [Assistant Professor]

Academic Year 2022-23	Name of Teacher	Class	Topics to be covered	No. of lectures
Odd Semesters 20.08.2022 onwards	Dr. Kausik Mukhopadhyay	B.Sc. Hons. Semester 1 CBCS Syllabus 2019	Core Course: CC1 Mathematical Physics I:Calculus	30
		B.Sc. Hons. Semester 3 CBCS Syllabus 2019	Core Course: CC5 Mathematical Physics II:Frobenius Method and Special Functions, Some Special Integrals, Partial Differential Equations	30

		B.Sc. Hons. Semester 3 CBCS Syllabus 2019	Core Course: CC6 Thermal Physics: Introduction to Thermodynamics, Thermodynamic Potential	30
		B.Sc. Hons. Semester 5 CBCS Syllabus 2019	Core Course: CC12 Statistical Physics: Bose-Einstein Statistics, Radiation: classical and quantum aspects, Fermi-Dirac Statistics	30
Even Semesters 15.03.2023 onwards		B.Sc. Hons. Semester 2 CBCS Syllabus 2019	Core Course: CC4 Waves and Optics: Oscillations, Superposition of harmonic oscillations, Wave motion, Superposition of harmonic waves	30
		B.Sc. Hons. Semester 4 CBCS Syllabus 2019	Core Course: CC8 Mathematical Physics: Special Theory of relativity	15
		B.Sc. Hons. Semester 4 CBCS Syllabus 2019	Core Course: CC10 Quantum Mechanics: Quantum mechanics of simple harmonic oscillator, Generalized Angular Momenta and Spin, Spectra of Hydrogen atom and its fine structure, Atoms in Electric & Magnetic Fields, Many electron atoms	30
		B.Sc. Hons. Semester 6 CBCS Syllabus 2019	Core Course: CC14 Solid State Physics: Elementary Band Theory, Superconductivity	15
		B.Sc. Hons. Semester 6 CBCS Syllabus 2019	DSE-A2 Nano Materials & Applications: Optical Properties, Electron Transport, Applications	30

Dr. Anshuman Nandy [Assistant Professor]

Academic Year 2022-23	Name of Teacher	Class	Topics to be covered	No. of lectures
Odd Semesters 20.08.2022 onwards	Dr. Anshuman Nandy	B.Sc. Hons. Semester 3 CBCS Syllabus 2019	Core Course: CC7 Basics of Quantum Mechanics, Nuclear Structure, Interaction with and within nucleus, Lasers	30
		B.Sc. Hons. Semester 5 CBCS Syllabus 2019	DSE-B1 Detector for Nuclear Radiations, Particle Accelerators, Particle Physics	30
		B.Sc. Gen. Semester 1 CBCS Syllabus 2019	General Course: GE1 Mathematical Methods, Central Force, Gravitation, Elasticity	15
		B.Sc. Gen. Semester 5	General Course: DSE-A2	30

		CBCS Syllabus 2019	Radiation and its nature, Foundation of Quantum Mechanics	
Even Semesters 15.03.2023 onwards		B.Sc. Hons. Semester 2 CBCS Syllabus 2019	Core Course: CC3 Electricity and Magnetism: Magnetostatic Field, Magnetic properties of matter, Electromagnetic induction, Electrical circuits	30
		B.Sc. Hons. Semester 6 CBCS Syllabus 2019	Core Course: CC13 Digital Electronics: Integrated Circuits, Number System, Digital Circuits (A), Computer Organization, Data Conversion	30
		B.Sc. Hons. Semester 6 CBCS Syllabus 2019	DSE-A2 Nano Materials & Applications: Nanoscale Systems, Synthesis of Nanostructure Materials, Characterization	30
		B.Sc. Gen. Semester 6 CBCS Syllabus 2019	General Course: DSE-B2 Nuclear & Particle Physics: Detector for Nuclear Reactions, Particle Accelerators, Particle Physics	30

Dr. Somdeb Chakraborty [Assistant Professor]

Academic Year 2022-23	Name of Teacher	Class	Topics to be covered	No. of lectures
Odd Semesters 20.08.2022 onwards	Dr. Somdeb Chakraborty	B.Sc. Hons. Semester 1 CBCS Syllabus 2019	Core Course: CC1 Vector Algebra and Vector Calculus	15
		B.Sc. Hons. Semester 1 CBCS Syllabus 2019	Core Course: CC2 Classical Mechanics	60
		B.Sc. Hons. Semester 3 CBCS Syllabus 2019	Core Course: CC5 Fourier Series, Integrals Transforms, Introduction to probability	15
		B.Sc. Hons. Semester 5 CBCS Syllabus 2019	Core Course: CC12 Classical Statistical Mechanics, Systems of Identical particles	30
Even Semesters 15.03.2023 onwards		B.Sc. Hons. Semester 2 CBCS Syllabus 2019	Core Course: CC3 Electricity and Magnetism: Dirac delta function and its properties, Electrostatics, Dielectric properties of matter, Method of Images, Electrostatic Energy	30
		B.Sc. Hons. Semester 4 CBCS Syllabus 2019	Core Course: CC8 Mathematical Physics III: Variational Calculus, Complex Analysis	30
		B.Sc. Hons. Semester 4 CBCS Syllabus 2019	Core Course: CC10 Quantum Mechanics: Wavepacket description, General discussion of bound states in an arbitrary potential, Quantum theory of hydrogen-like atoms	15

		B.Sc. Gen. Semester 4 CBCS Syllabus 2019	General Course: GE4 Waves & Optics: Acoustics, Superposition of vibrations, Vibration in String	15
		B.Sc. Hons. Semester 6 CBCS Syllabus 2019	DSE-B2 Advanced Statistical Mechanics: Ideal Bose systems and Fermi systems, Ising model, Non-equilibrium statistical mechanics	30

Dr. Arindam Midya [Assistant Professor]

Academic Year 2022-23	Name of Teacher	Class	Topics to be covered	No. of lectures
Odd Semesters 20.08.2022 onwards	Dr. Arindam Midya	B.Sc. Hons. Semester 3 CBCS Syllabus 2019	Core Course: CC6 Thermal Physics: Kinetic Theory of Gases, Conduction of Heat	15
		B.Sc. Hons. Semester 3 CBCS Syllabus 2019	SEC A1 Scientific Writing	15
		B.Sc. Hons. Semester 5 CBCS Syllabus 2019	DSE A1 Laser, Holography, Non-linear Optics	60
		B.Sc. Gen. Semester 5 CBCS Syllabus 2019	General Course: DSE A2 Laser, Special relativity	30
Even Semesters 15.03.2023 onwards		B.Sc. Hons. Semester 4 CBCS Syllabus 2019	Core Course: CC9 Analog electronics	45
		B.Sc. Hons. Semester 4 CBCS Syllabus 2019	SEC-B2 Arduino	15
		B.Sc. Gen. Semester 4 CBCS Syllabus 2019	General Course: GE4 Waves & Optics: Introduction to Wave Optics, Interference, Diffraction, Polarization	30
		B.Sc. Hons. Semester 6 CBCS Syllabus 2019	DSE-B2 Advanced Statistical Mechanics: Review of classical statistical mechanics, Quantum statistical mechanics	30

Ms. Debasmita Samanta [SACT]

Academic Year 2021-22	Name of Teacher	Class	Topics to be covered	No. of lectures
Odd Semesters 20.08.2022 onwards	Ms. Debasmita Samanta	B.Sc. Hons. Semester 5 CBCS Syllabus 2019	Core Course: CC11 Electromagnetic Theory: Maxwell Equations, EM Wave Propagation in Unbounded Media, EM Wave in Bounded Media	15
		B.Sc. Gen. Semester 1 CBCS Syllabus 2019	General Course: GE1 Introduction to Newtonian Mechanics, Rotational Motion	15
		B.Sc. Gen. Semester 3 CBCS Syllabus 2019	General Course: GE3 Laws of Thermodynamics, Thermodynamical Potentials, Kinetic Theory of Gases, Theory of Radiation	30
Even Semesters 15.03.2023 onwards		B.Sc. Hons. Semester 6 CBCS Syllabus 2019	Core Course: CC14 Solid State Physics: Magnetic Properties of matter, Dielectric Properties of Materials, Drude's Theory	30
		B.Sc. Gen. Semester 2 CBCS Syllabus 2019	General Course: GE2 Electricity & magnetism: Essential Vector Analysis, Electrostatics	30

Ms. Devdali Banerjee Mitra [SACT]

Academic Year 2022-23	Name of Teacher	Class	Topics to be covered	No. of lectures
Odd Semesters 20.08.2022 onwards	Ms. Devdali Banerjee Mitra	B.Sc. Hons. Semester 5 CBCS Syllabus 2019	DSE-B1 Introduction, Nuclear Reactions, Interaction of Nuclear Radiation with matter	30
		B.Sc. Gen. Semester 1 CBCS Syllabus 2019	General Course: GE1 Oscillations, Surface tension	15
		B.Sc. Gen. Semester 3 CBCS Syllabus 2019	Statistical Mechanics	15
Even Semesters 15.03.2023 onwards		B.Sc. Gen. Semester 2 CBCS Syllabus 2019	General Course: GE2 Electricity & magnetism: Magnetism, Electromagnetic Induction Electrodynamics	30
		B.Sc. Gen. Semester 6 CBCS Syllabus 2019	General Course: DSE-B2 Nuclear & Particle Physics: General Properties of Nuclei, Nuclear Models, Radio activity, Nuclear Reactions	30