**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2023-2024)**

**Class: B.Sc 1st Semester**   **Name of the Teacher: Suresh Kumar**

**Subject: Physics Period :1st**

**Paper : A Room No : 129**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 21-07-2023 to 22-07-2023 |  |
| Week 2 | 24-07-2023 to 28-07-2023 | Cartesian and spherical polar coordinate systems |
| Week 3 | 31-07-2023 to 05-08-2023 | two and three-dimensional coordinate systems, Area, volume, displacement, velocity |
| Week 4 | 07-08-2023 to 12-08-2023 | Acceleration in these systems ,Solid angle, centre of mass |
| Week 5 | 14-08-2023 to 19-08-2023 | Linear and angular momentum |
| Week 6 | 21-08-2023 to 26-08-2023 | Torque, potential and kinetic energy of a system of particles |
| Week 7 | 28-08-2023 to 02-09-2023 | Relationship of conservation laws of linear momentum |
| Week 8 | 04-09-2023 to 09-09-2023 | Angular momentum and energy |
| Week 9 | 11-09-2023 to 16-09-2023 | Symmetries of space and time |
| Week 10 | 18-09-2023 to 23-09-2023 | Various forces in nature and relative strengths |
| Week 11 | 25-09-2023 to 30-09-2023 | Spatial dependence, Motion under force obeying inverse square law ,Equivalent one body problem |
| Week 12 | 03-10-2023 to 07-10-2023 | Motion under central forces, equation of motion under central force |
| Week 13 | 09-10-2023 to 14-10-2023 | Equation of orbit and turning points |
| **Mid Semester Exam (16th October 2023 – 21st October, 2023)** | | |
| Week 15 | 25-10-2023 to 27-10-2023 | Kepler’s Laws |
| Week 16 | 31-10-2023 to 04-11-2023 | Elastic collision in Lab. and C.M. systems |
| Week 17 | 06-11-2023 to 11-11-2023 | Relationships of velocities, angles & kinetic energies in these two systems |
| Week 18 | 14-11-2023 to 18-11-2023 | Cross section of elastic scattering, Rutherford Scattering |

**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2023-2024)**

**Class: \*B.Sc 1st /\*\*BTH 1st**  **Name of the Teacher: Rajwinder Singh**

**Subject: Physics Period : 1st /4th (B.Sc 1st), 4th (BTH 1st )**

**Paper :C Room No : 129/111**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 21-07-2023 to 22-07-2023 |  |
| Week 2 | 24-07-2023 to 28-07-2023 | \*Basic ideas of Vector Calculus |
| Week 3 | 31-07-2023 to 05-08-2023 | \*Gradient, Divergence, curl in Cartesian coordinates and their useful relations  \*\*Coulomb’s law for point charges; electric field due to point charge |
| Week 4 | 07-08-2023 to 12-08-2023 | \*physical significance of Gradient, Divergence, curl and applications, Conservative field, Greens’s theorem in a plane  \*\*Electric field due to electric dipole (on axial line and equator line) |
| Week 5 | 14-08-2023 to 19-08-2023 | \*Stoke’s theorem, Gauss’s divergence theorem, Laplacian in Rectangular coordinates  \*\*Electric flux; Gauss’s theorem and its applications (line of charge and sheet of charge) |
| Week 6 | 21-08-2023 to 26-08-2023 | \*Coulomb’s Law for point charges and continuous distribution of charges  \*\*Electric potential due to point charge, group of charges and dipole (on axial line and equatorial line ), potential difference as line integral of electric field |
| Week 7 | 28-08-2023 to 02-09-2023 | \*Electric field due to dipole, line charge, charged ring, circular disc and sheet of charge  \*\*Capacitance; series and parallel arrangements, energy stored in the electric field of capacitor |
| Week 8 | 04-09-2023 to 09-09-2023 | \*Gauss’s Law and its differential form, Work and potential difference,  \*\*current, current density, equation of continuity, |
| Week 9 | 11-09-2023 to 16-09-2023 | \*Potential difference as line integral of field, Gauss’s law for dielectrics.  \*\*Ohm’s law in vector form |
| Week 10 | 18-09-2023 to 23-09-2023 | \*Electric potential due to dipole and its applications in Electrostatic field  \*\*Quantum theory of light |
| Week 11 | 25-09-2023 to 30-09-2023 | \*Electric potential due to quadrupole and its applications in Electrostatic field  \*\* X-rays diffraction |
| Week 12 | 03-10-2023 to 07-10-2023 | \*Electric potential due to dipole and quadrupole and its applications in Electrostatic field contd., Electric field as gradient of scalar potential, curl E = 0  \*\*Compton effect, Bragg’s law |
| Week 13 | 09-10-2023 to 14-10-2023 | \*Calculation of E due to a point charge and dipole from potential. Poisson and Laplace’s equation  \*\*De Broglie wave equation, phase velocity and group velocity |
| **Mid Semester Exam (16th October 2023 – 21st October, 2023)** | | |
| Week 15 | 25-10-2023 to 27-10-2023 | \*Calculation of electric potential and field due to a point charge placed near an infinitely conducting sheet  \*\*Electron microscope, Uncertainty Principle (statement only) |
| Week 16 | 31-10-2023 to 04-11-2023 | \*Polarisation of matter, atomic and molecular dipoles, induced dipole moment and atomic polarizability  \*\*Applications of Uncertainty Principle ( particle in a box, existence of electron in Nucleus and atom ) |
| Week 17 | 06-11-2023 to 11-11-2023 | \*Concept of electrical images Electric susceptibility and polarization vector. Relation K= 1 + χ  \*\*Radioactivity and its laws |
| Week 18 | 14-11-2023 to 18-11-2023 | \*Gauss’s law for dielectrics. Displacement vector, Div. D = 0, Energy stored in dielectric medium  \*\*Half-life and mean life, uses of radioactivity |

**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2023-2024)**

**Class: BSc Biotech Hns first sem**  **Name of the Teacher: Dr. Harjeet Kaur**

**Subject: Physics Period : 4th (Wed-Thu)**

**Paper :Physics Room No : 111**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 21-07-2023 to 22-07-2023 | On Ex-India Leave |
| Week 2 | 24-07-2023 to 28-07-2023 | On Ex-India Leave |
| Week 3 | 31-07-2023 to 05-08-2023 | Laws of radioactivity, decay law, decay constant, half-life, activity |
| Week 4 | 07-08-2023 to 12-08-2023 | Average life, Units, Uses of radio isotopes, Radio carbon dating |
| Week 5 | 14-08-2023 to 19-08-2023 | Conditions for observing interference fringes, phase and path difference, Young’s double Slit experiment. |
| Week 6 | 21-08-2023 to 26-08-2023 | Coherent Sources, Lloyd’s mirror and Fresnel’s biprism |
| Week 7 | 28-08-2023 to 02-09-2023 | Diffraction: Fresnel theory of Diffraction. Distinction between Fresnel and Fraunhofer diffraction |
| Week 8 | 04-09-2023 to 09-09-2023 | Fraunhofer diffraction due to single slit, Rayleigh Criteria |
| Week 9 | 11-09-2023 to 16-09-2023 | resolving power of microscope and telescope |
| Week 10 | 18-09-2023 to 23-09-2023 | Compound Microscope |
| Week 11 | 25-09-2023 to 30-09-2023 | Fluorescent Microscope |
| Week 12 | 03-10-2023 to 07-10-2023 | Polarization: Concept and analytical treatment of un-polarized |
| Week 13 | 09-10-2023 to 14-10-2023 | plane polarized  and elliptically polarized light |
| Week 16 | 31-10-2023 to 04-11-2023 | Physics and Life Sciences, Overlap between various branches |
| Week 17 | 06-11-2023 to 11-11-2023 | Numericals |
| Week 18 | 14-11-2023 to 18-11-2023 | Numericals |

**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2023-2024)**

**Class: BSc first sem**  **Name of the Teacher: Dr. Harjeet Kaur**

**Subject: Physics Period : 1st (Fri-Sat)**

**Paper : B Room No : 129**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 21-07-2023 to 22-07-2023 | On Ex-India Leave |
| Week 2 | 24-07-2023 to 28-07-2023 | On Ex-India Leave |
| Week 3 | 31-07-2023 to 05-08-2023 | Periodic Motion, Defns, SHM, displacement, velocity, accel, Projection, Graphical, Diffn eqn |
| Week 4 | 07-08-2023 to 12-08-2023 | Energy of SHM, Types of SHM, Eqn of Diffn SHM |
| Week 5 | 14-08-2023 to 19-08-2023 | Compound pendulum, Torsional Pendulum, Transverse Vibration Time Period |
| Week 6 | 21-08-2023 to 26-08-2023 | Electrical Oscillations, Energy, Analogy between mechanical and electrical Oscillator |
| Week 7 | 28-08-2023 to 02-09-2023 | Composition of two perp SHM of same period, ratio 1:2 |
| Week 8 | 04-09-2023 to 09-09-2023 | Damped Mechanical oscillations equation and its soln, Types of damping |
| Week 9 | 11-09-2023 to 16-09-2023 | Logarithmic Decrement, Relaxation Time, Q factor, Damped Electrical osc, Applications |
| Week 10 | 18-09-2023 to 23-09-2023 | Diffn equation of forced osc, Behavior with frequency, Velocity of forced mech osc, Variation with phase and frequency |
| Week 11 | 25-09-2023 to 30-09-2023 | Acceleration and its variation, electrical osc, and its variations |
| Week 12 | 03-10-2023 to 07-10-2023 | Power supplied and its variations, band width, Q factor |
| Week 13 | 09-10-2023 to 14-10-2023 | Relation between Q factor and band width, Amplification factor, ohm law |
| Week 16 | 31-10-2023 to 04-11-2023 | Shape, determination of normal modes, |
| Week 17 | 06-11-2023 to 11-11-2023 | Inductive coupling |
| Week 18 | 14-11-2023 to 18-11-2023 | Numericals |