

Lesson Plan

Name: **Anup Singh (Ext. Lecturer Mathematics)**

Class and Section: **B.A/B.Sc.-1st (1st Sem.)**

Subject: **Mathematics**

Paper 1: **(BM – 113 : Solid Geometry)**

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| Oct 2021 | Unit 1; | General equation of second degree. Tracing of conics. Tangent at any point to the conic, chord of contact, pole of line to the conic, director circle of conic. System of conics. Confocal conics. Polar equation of a conic, tangent and normal to the conic. |
| Nov 2021 | Unit 2; | Sphere: Plane section of a sphere. Sphere through a given circle. Intersection of two spheres, radical plane of two spheres. Co-oxal system of spheres. Cones. Right circular cone, enveloping cone and reciprocal cone. Cylinder: Right circular cylinder and enveloping cylinder. |
| Dec 2021 | Unit 3; | Central Conicoids: Equation of tangent plane. Director sphere. Normal to the conicoids. Polar plane of a point. Enveloping cone of a conicoid. Enveloping cylinder of a conicoid. |
| Jan 2022 | Unit 4; | Paraboloids: Circular section, Plane sections of conicoids. Generating lines. Confocal conicoid. Reduction of second degree equations. |

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Name: **Anup Singh (Ext. Lecturer Mathematics)**

Class and Section: **B.A/B.Sc.-2nd (3rd Sem.)**

Subject: **Mathematics**

Paper 2: **(BM -232 : Partial Differential Equations)**

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| Oct 2021 | Unit 1: | Partial differential equations: Formation, order and degree, Linear and Non-Linear Partial differential equations of the first order: Complete solution, singular solution, General solution, Solution of Lagrange's linear equations, Charpit's general method of solution. Compatible systems of first order equations, Jacobi's method. |
| Nov 2021 | Unit 2: | Linear partial differential equations of second and higher orders, Linear and non-linear homogenous and non-homogenous equations with constant co-efficients, Partial differential equation with variable co-efficients reducible to equations with constant coefficients, their complimentary functions and particular Integrals, Equations reducible to linear equations with constant co-efficients. |
| Dec 2021 | Unit 3: | Classification of linear partial differential equations of second order, Hyperbolic, parabolic and elliptic types, Reduction of second order linear partial differential equations to Canonical (Normal) forms and their solutions, Solution of linear hyperbolic equations, Monge's method for partial differential equations of second order. |
| Jan 2022 | Unit 4: | Cauchy's problem for second order partial differential equations, Characteristic equations and characteristic curves of second order partial differential equation, Method of separation of variables: Solution of Laplace's equation, Wave equation (one and two dimensions), Diffusion (Heat) equation (one and two dimension) in Cartesian Coordinate system. |

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Class and Section: **B.A/B.Sc.-2nd (3rd Sem.)**

Subject: **Mathematics**

Paper 3: (**BM -233 : Statics**)

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| Oct 2021 | Unit 1: | Composition and resolution of forces. Parallel forces. Moments and Couples. |
| Nov 2021 | Unit 2: | Analytical conditions of equilibrium of coplanar forces. Friction. Centre of Gravity. |
| Dec 2021 | Unit 3: | Virtual work. Forces in three dimensions. Poinso's central axis. |
| Jan 2022 | Unit 4: | Wrenches. Null lines and planes. Stable and unstable equilibrium. |



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Name: **Anup Singh (Ext. Lecturer Mathematics)**

Class and Section: **B.Com.-2nd (3rd Sem.)**

Subject: **Mathematics**

Paper 4:(BC-302 BUSINESS STATISTICS-I)

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| Oct 2021 | Unit 1: | Introduction of statistics: concept, scope, usefulness & limitations of statistics, distrust of statistics. Collection of data: primary and secondary data, methods of collection of data. |
| Nov 2021 | Unit 2: | Measure of central tendency: mean, median, mode, harmonic mean and geometric mean. Measure of dispersion: range, inter-quartile range, quartile deviation, mean deviation, standard deviation, coefficient of variation, Lorenz curve. |
| Dec 2021 | Unit 3: | Index numbers: meaning, types and uses of index numbers, methods of preparation of index numbers: simple or unweighted and weighted index number, problems in the preparation of index numbers, Tests of adequacy; Chain-base index numbers; Base shifting, Splicing and deflating, Consumer price index. |
| Jan 2022 | Unit 4: | Analysis of Times Series: causes of variation in time series data; Components of a time series; Decomposition: additive and multiplicative models; determination of trend: moving averages method and method of Least Squares (including linear second degree, parabolic, and exponential trend); Computation of seasonal-indices by sample averages, ratio-to-trend, ratio-to moving average and link relative methods. |

