Shahid Matangini Hazra Government General Degree College for Women
Teaching Assignment and Lesson Plan
Academic Session: 2022-2023 Semester: First
Course: Core Course

| Name of the Teacher | Title of the teaching assignment | Dividing the assignment into number of units along with detailed lesson plan as per the university syllabus | Date of commencement of the assignment | Number of classes required to complete each unit | Total number of classes required to complete the assignment |
|---|---|---|---|---|---|
| Deepankar Das | Calculus, Geometry and differential equations(C1T) | Unit-I (Hyperbolic functions, higher order derivatives, concavity and inflection points, envelopes, asymptotes, curve tracing, , L'Hospital's rule) | 19.09.2022 | 12 | 48 |
| | | Unit-II(Reduction formulae, arc length of a curve, area and volume of surface of revolution, techniques of sketching conics.) | | 12 | |
| | | Unit-III (Reflection properties of conics, rotation of axes and second degree equations, polar equations of conics. Spheres. Cylindrical surfaces. Central conicoids, paraboloids, plane sections of conicoids, generating lines, classification of quadrics) | | 12 | |
| | | Unit-IV(Ordinary differential equations) | | 12 | |
| Dr. Sambhu Charan Barman | Algebra(C2T) | Unit-I(complex numbers, nth roots of unity, De Moivre's theorem, theory of equations,inequality) | 19.09.2022 | 10 | 48 |
| | | Unit-II(Relations. Functions, integers,Principles of Mathematical induction, statement of Fundamental Theorem of Arithmetic.) | | 14 | |

| | | Unit-III(Solutions of linear system of equations) | | 08 | |
| --- | --- | --- | --- | --- | --- |
| | | Unit-IV(Linear algebra: vector space, linear map, eigen value, eigen vector) | | 16 | |

Shahid Matangini Hazra Government General Degree College for Women
Teaching Assignment and Lesson Plan
Academic Session: 2022-2023 Semester: First
Course: General Elective

| Name of the Teacher | Title of the teaching assignment | Dividing the assignment into number of units along with detailed lesson plan as per the university syllabus | Date of commencement of the assignment | Number of classes required to complete each unit | Total number of classes required to complete the assignment |
|---|---|---|---|---|---|
| Deepankar | Calculus, | Unit-I(Hyperbolic functions, higher order derivatives, concavity and inflection points, envelopes, asymptotes, curve tracing L'Hospital's rule) | 19.09.2022 | 12 | 48 |
| Das | Geometry and differential equations (GE1T) | Unit-II(Reduction formulae, arc length of a curve, area under a curve, area and volume of surface of revolution, techniques of sketching conics.) | | 12 | |
| Dr. Sambhu Charan Barman | Calculus, Geometry and differential equations (GE1T) | Unit-III(Reflection properties of conics, rotation of axes and second degree equations, conics. Spheres. Cylindrical surfaces. Central conicoids, paraboloids, plane sections of conicoids, generating lines, quadrics) | 19.09.2022 | 12 | |
| | | Unit-IV (Ordinary differential equations) | | 12 | |

Shahid Matangini Hazra Government General Degree College for Women
Teaching Assignment and Lesson Plan
Academic Session: 2022-2023 Semester: First
Course: B.Sc. General

| Name of the Teacher | Title of the teaching assignment | Dividing the assignment into number of units along with detailed lesson plan as per the university syllabus | Date of commencement of the assignment | Number of classes required to complete each unit | Total number of classes required to complete the assignment |
|---|---|---|---|---|---|
| Deepankar Das | Differential Calculus (CC-1, DSC1AT) | Limit and Continuity, differentiability of functions, Successive differentiation, Partial differentiation, Tangents and Normals, Curvature, Asymptotes, Singular points, Tracing of curves. | 19.09.2022 | 14 | 28 |
| Dr. Sambhu Charan Barman | Differential Calculus (CC-1, DSC1AT) | Rolle's theorem, Mean value theorems, Lagrange and Cauchy's theorem, Taylor's theorem with, Power series and its convergences, Taylor series, Maclaurin's series, Maxima and Minima, Indeterminate forms. | 19.09.2022 | 14 | |

Teaching Assignment and Lesson Plan
Academic Session: 2022-2023 Semester: Third
Course: Core Course

| Name of the Teacher | Title of the teaching assignment | Dividing the assignment into number of units along with detailed lesson plan as per the university syllabus | Date of commencement of the assignment | Number of classes required to complete each unit | Total number of classes required to complete the assignment |
|---|---|---|---|---|---|
| Deepankar Das | Theory of real functions and introduction to metric spaces(C5T) | Unit-I(Real analysis: limit,Continuous functions, Uniform continuity) | 19.09.2022 | 12 | 42 |
| | | Unit-II (Real analysis: Differentiability of a function Relative extrema, interior extremum theorem, Rolle's theorem. Mean value theorem, intermediate value property of derivatives, Darboux's theorem, MVT) | | 11 | |
| | | Unit-III(Cauchy's MVT. Taylor's theorem with Lagrange's form of remainder, Taylor's theorem with Cauchy's form of remainder, application of Taylor's theorem to convex functions, relative extrema. Taylor's series and Maclaurin's series expansions) | | 10 | |
| | | Unit-IV(Metric spaces) | | 09 | |
| | Numerical Analysis (C7T) | Unit-I(Algorithms. Convergence. Errors) | 19.09.2022 | 02 | 22 |
| | | Unit-II(solutions of Transcendental and polynomial equations) | | 06 | |
| | | Unit-III(System of linear algebraic equations) | | 08 | |
| | | Unit-IV(Interpolation, Numerical differentiation) | | 06 | |

| | Object oriented programming in C++ (SEC-1T) | Unit-I(brief history of C++, structure of C++ program, differences between C and C++, basic C++ operators) | 19.09.2022 | 06 | 18 |
|---|---|---|---|---|---|
| | | Unit-II (Objects, classes, constructor and destructors, friend function, inline function, encapsulation, data abstraction, inheritance, polymorphism, dynamic binding, operator overloading, method overloading, overloading arithmetic operator and comparison operators) | | 06 | |
| | | Unit-III (Template class in C++, copy constructor, subscript and function call operator, concept of namespace and exception handling) | | 06 | |
| Dr. Sambhu Charan Barman | Numerical Analysis (C7T) | Unit-V (Numerical Integration, Power method, Least square polynomial approximation.) | 19.09.2022 | 09 | 25 |
| | | Unit-VI(numerical solution of Ordinary differential equations) | | 06 | |
| | | C7P (Numerical Methods Lab) | | 10 | |
| | Group Theory-I (C6T) | Unit-I(groups) | 19.09.2022 | 08 | 46 |
| | | Unit-II(Subgroups) | | 07 | |
| | | Unit-III(cyclic groups, permutations, alternating group, cosets, Lagrange's theorem and Fermat's Little theorem.) | | 10 | |
| | | Unit-IV(External direct product, normal subgroups, factor groups, Cauchy's.) | | 09 | |
| | | Unit-V(Group homomorphisms, isomorphisms) | | 12 | |
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Shahid Matangini Hazra Government General Degree College for Women
Teaching Assignment and Lesson Plan
Academic Session: 2022-2023 Semester: Third
Course: B.Sc. General

| Name of the Teacher | Title of the teaching assignment | Dividing the assignment into number of units along with detailed lesson plan as per the university syllabus | Date of commencement of the assignment | Number of classes required to complete each unit | Total number of classes required to complete the assignment |
|---|---|---|---|---|---|
| Deepankar Das | Real Analysis (CC-3, DSC1CT) | Finite and infinite sets, example of countable and uncountable sets. Real line, bounded sets, suprema and infima, completeness property of R, Archimedean property of R, intervals, Concepts of cluster points and statement of Bolzano-Weierstrass theorem, Real sequence, bounded sequence, Cauchy convergence criterion for sequences, Cauchy's theorem on limits, order preservation and squeeze theorem, monotone sequence and their convergence(monotone convergence theorem without proof), | 19.09.2022 | 18 | 36 |
| Dr. Sambhu Charan Barman | Real Analysis (CC-3, DSC1CT)) | Infinite series, Test of convergence, conditional convergent series, point-wise and uniform convergence, Weieratrass's M-test, integrability and differentiability of functions, power series ) | 19.09.2022 | 18 | |

Shahid Matangini Hazra Government General Degree College for Women
Teaching Assignment and Lesson Plan
Academic Session: 2022-2023 Semester: Fifth
Course: Core Course

| Name of the Teacher | Title of the teaching assignment | Dividing the assignment into number of units along with detailed lesson plan as per the university syllabus | Date of commencement of the assignment | Number of classes required to complete each unit | Total number of classes required to complete the assignment |
|---|---|---|---|---|---|
| Deepankar Das | Group Theory-II (C12T) | Unit-I (automorphism groups, Characteristic subgroups, Commutator subgroup and its properties) | 19.09.2022 | 12 | 45 |
| | | Unit-II(Properties of external direct products, internal direct products, Fundamental theorem of finite abelian groups.) | | 10 | |
| | | Unit-III (Group actions, stabilizers and kernels, permutation representation associated with a given group action. Applications of group actions. Generalized Cayley's theorem. Index theorem.) | | 11 | |
| | | Unit-IV (Groups acting on themselves by conjugation, class equation and consequences, conjugacy in Sn, p-groups, Sylow's theorems and consequences, Cauchy's theorem,) | | 12 | |
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| | Probability and Statistics (DSE2T) | Unit-I (Sample space, probability axioms, distribution function, mathematical expectation, moments, moment generating function, characteristic function, discrete distributions, continuous distributions) | 19.09.2022 | 8 | 43 |
| | | Unit-II (Joint distribution function, joint probability density functions, marginal and conditional distributions, bivariate normal distribution, correlation coefficient, joint moment generating function and covariance linear regression) | | 10 | |
| | | Unit-III (Chebyshev's inequality, law of large numbers and strong law of large numbers. Central limit theorem ,Markov chains, Chapman-Kolmogorov equations) | | 10 | |
| | | Unit-IV (Statistics) | | 15 | |
| Dr. Sambhu Charan Barman | Partial differential equations and applications (C11T) | Unit-I (Partial differential equations – Basic concept, First- order equations, Method of characteristics Canonical forms, Method of separation of variables) | 19.09.2022 | 8 | 43 |
| | | Unit-II(Derivation of heat equation, wave equation and Laplace equation) | | 8 | |
| | | Unit-III(The Cauchy problems, Method | | 12 | |

| | | of separation of variables) | | | |
|---|---|---|---|---|---|
| | | Unit-IV(Central force. Constrained motion, varying mass, tangent and normal components of acceleration, modelling ballistics and planetary motion, Kepler's second law) | | 15 | |
| | | Unit-V(Graphical Demonstration) | | 04 | |
| | Linear Programming (DSE1T) | Unit-I(LPP, Theory of simplex method, graphical solution, convex sets, simplex algorithm, simplex method , two-phase method. Big-M method) | 19.09.2022 | 15 | 45 |
| | | Unit-II(DualityTransportation problem , transportation problem, assignment problem) | | 15 | |
| | | Unit-III (Game theory) | | 15 | |
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