Lesson Plan

Name of Teacher:	Ms. Salaj	Class: B.Sc. 2nd Year
Session: 2023-24 Odd Semester		Subject: Partial Differential Equations

Week	Date/Month	Topic
1	July 21-29	Partial differential equations: Formation,
2	July 31-Aug 5	order and degree Complete solution, singular solution,
3	7-12	General solution, Solution of Lagrange's linear equations,
4	14-19	Charpit's general method of solution. Compatible systems of first order equations, Jacobi's method
5	21-26	Linear partial differential equations of second and higher orders,
6	Aug 28-Sept. 2	Linear and non-linear homogenious and non-homogenious equations with constant co-efficients,
7	4-9	Partial differential equation with variable co-efficients reducible to equations with constant coefficients,
8	11-16	Their complimentary functions and particular Integrals,
9	18-23	Equations reducible to linear equations with constant co-efficients.
10	25-30	Classification of linear partial differential equations of second order, Hyperbolic, parabolic and elliptic types,
11	Oct. 2-7	Revision, Problems and test
12	9-14	Reduction of second order linear partial differential equations to Canonical (Normal) forms and their solutions,
13	16-21	Solution of linear hyperbolic equations, Monge's method for partial differential equations of second order.
14	23-28	Cauchy's problem for second order partial differential equations,
15	Oct. 30-Nov. 4	Characteristic equations and characteristic curves of second order partial differential equation
16	6-9	Method of separation of variables: Solution of Laplace's equation,
17	17-25	Wave equation (one and two dimensions),
18	Nov. 27- Dec. 2	Diffusion (Heat) equation (one and two dimension) in Cartesian Co-ordinate system.
19	4-6	Revision, Problems and test

Lesson Plan

Name of Teacher:	Ms. Salaj	Class: B.Sc. 3rd Year
Session: 2023-24 Odd Semester		Subject: Real Analysis

Week	Date/Month	Topic
1	July 21-29	Riemann integral.
2	July 31-Aug 5	Integrability of continuous and monotonic functions
3	7-12	The Fundamental theorem of integral calculus. Mean value theorems of integral calculus.
4	14-19	Improper integrals and their convergence,
5	21-26	Comparison tests, Abel's and Dirichlet's tests, Frullani's integral,
6	Aug 28-Sept. 2	Integral as a function of a parameter.
7	4-9	Continuity, Differentiability and integrability of an integral of a function of a parameter.
8	11-16	Revision, Problems and Test
9	18-23	Definition and examples of metric spaces, neighborhoods, limit points,
10	25-30	interior points, open and closed sets, closure and interior,
11	Oct. 2-7	boundary points, subspace of a metric space, equivalent metrics,
12	9-14	Cauchy sequences, completeness,
13	16-21	Cantor's intersection theorem, Baire's category theorem,
14	23-28	contraction Principle
15	Oct. 30-Nov. 4	Continuous functions, uniform continuity.
16	6-9	compactness for metric spaces, sequential compactness,
17	17-25	Bolzano-Weierstrass property, total boundedness, finite intersection property,
18	Nov. 27- Dec. 2	continuity in relation with compactness, connectedness, components, continuity in relation with connectedness.
19	4-6	Revision, Problems and Test

Lesson Plan

Name of Teacher:	Ms. Saraj	Class: B.Sc. 1ˢᵗ Year

Session: 2023-24 Odd Semester **Subject: Algebra**

Week	Date/Month	Topic
1	July 24-29	Symmetric, Skew symmetric, Hermitian and skew Hermitian matrices.
2	July 31-Aug 5	Elementary Operations on matrices. Rank of a matrices. Inverse of a matrix.
3	7-12	Linear dependence and independence of rows and columns of matrices. Row rank and column rank of a matrix.
4	14-19	Eigenvalues, eigenvectors and the characteristic equation of a matrix. Minimal polynomial of a matrix.
5	21-26	Cayley Hamilton theorem and its use in finding the inverse of a matrix
6	Aug 28-Sept. 2	Applications of matrices to a system of linear (both homogeneous and non-homogeneous) equations.
7	4-9	Theorems on consistency of a system of linear equations.
8	11-16	Unitary and Orthogonal Matrices,
9	18-23	Bilinear and Quadratic forms
10	25-30	Relations between the roots and coefficients of general polynomial equation in one variable.
11	Oct. 2-7	Relations between the roots and coefficients of general polynomial equation in one variable.
12	9-14	Solutions of polynomial equations having conditions on roots.
13	16-21	Common roots and multiple roots.
14	23-28	Transformation of equations
15	Oct. 30-Nov. 4	Nature of the roots of an equation Descarte's rule of signs.
16	6-9	Solutions of cubic equations (Cardon's method).
17	17-25	Biquadratic equations and their solutions.
18	Nov. 27- Dec. 6	Revision, Problems and Test

Saraj

Lesson Plan

Name of Teacher:	Ms. Salaj		Class: B. Sc. 2nd Year
Session: 2023-24 Odd Semester		Subject: Statics	

Week	Date/Month	Topic
1	July 21-29	Composition and resolution of forces.
2	July 31-Aug 5	Composition and resolution of forces.
3	7-12	Parallel forces.
4	14-19	Moments
5	21-26	Couples
6	Aug 28-Sept. 2	Analytical conditions of equilibrium of coplanar forces
7	4-9	Problems, revision and test
8	11-16	Friction
9	18-23	Friction
10	25-30	Centre of Gravity
11	Oct. 2-7	Centre of Gravity
12	9-14	Virtual work.
13	16-21	Forces in three dimensions
14	23-28	Poinsots central axis
15	Oct. 30-Nov. 4	Wrenches
16	6-9	Null lines and planes
17	17-25	Stable and unstable equilibrium.
18	Nov. 27- Dec. 2	Problems, revision and test
19	4-6	Problems, revision and test

Salaj

Lesson Plan

Name of Teacher: Ms. Salaj   **Class: B.Sc. 1st Year**

Session: 2023-24 Odd Semester   **Subject: Calculus**

Week	Date/Month	Topic
1	July 24-29	Definition of the limit of a function. Basic properties of limits
2	July 31-Aug 5	Continuous functions and classification of discontinuities.
3	7-12	Differentiability, Successive differentiation
4	14-19	Leibnitz theorem. Maclaurin and Taylor series expansions
5	21-26	Asymptotes in Cartesian coordinates
6	Aug 28-Sept. 2	Intersection of curve and its asymptotes, asymptotes in polar coordinates.
7	4-9	Curvature, radius of curvature for Cartesian curves
8	11-16	polar curves. Newton's method. Radius of curvature for pedal curves
9	18-23	Tangential polar equations. Centre of curvature. Circle of curvature. Chord of curvature, evolutes.
10	25-30	Tangential polar equations. Centre of curvature. Circle of curvature. Chord of curvature, evolutes.
11	Oct. 2-7	Tests for concavity and convexity. Points of inflexion. Multiple points. Cusps, nodes & conjugate points.
12	9-14	Tracing of curves in Cartesian, parametric and polar co-ordinates
13	16-21	Reduction formulae. Rectification, intrinsic equations of curve.
14	23-28	Quardrature area. Area bounded by closed curves
15	Oct. 30-Nov. 4	Volumes and surfaces of solids of revolution
16	6-9	Theorems of Pappu's and Guilden
17	17-25	Revision and test
18	Nov. 27- Dec. 6	Revision and test

Salaj (signature)