Lesson Plan
Session: 2024-25

Name of the Assistant Professor: Bharat Kumar

Class: B.A./B.Sc. 5rd Semester **Subject:** Mathematics

Paper: Real Analysis

Dates	Week	Topic
22/07/2024 to 27/07/2024	1	Boundedness of a set, topology of real numbers, partition, upper and lower sums.
29/07/2024 to 03/08/2024	2	Theorems, examples and questions of exercise 1.1, 1.2 & 1.3 of Riemann integral.
05/08/2024 to 10/08/2024	3	Chapter 2- Improper integrals and their convergence
12/08/2024 to 17/08/2024	4	Doubt discussion and test of Riemann integral
19/08/2024 to 24/08/2024	5	Chapter 3- Integral as a function of a parameter
26/08/2024 to 31/08/2024	6	Doubt discussion and test of chapter 2nd, 3rd.
02/09/2024 to 07/09/2024	7	Chapter 4- Definition and examples of metric spaces.
09/09/2024 to 14/09/2024	8	Chapter 5- Neighborhoods, limit points, interior points,
16/09/2024 to 21/09/2024	9	Open and closed sets, closer and interior, boundary points.
23/09/2024 to 28/09/2024	10	Doubt discussion of chapter 4 and 5,
30/09/2024 to 05/10/2024	11	Chapter 6- Cantor's intersection theorem, baire's category theorem, contraction principle.

07/10/2024 to 12/10/2024	12	Chapter 7- Continuous functions, uniform continuity in metric spaces.
14/10/2024 to 19/10/2024	13	Chapter 8- Sequential compactness, bolzanoweierstrass property, total boundness.
21/10/2024 to 26/10/2024	14	Doubt discussion of chapter 6 and 7. **MID TERM EXAM**
04/11/2024 to 09/11/2024	15	Chapter 9- Finite intersection property, continuity in relation with compactness, connectedness, components, continuity in relation with connectedness
11/11/2024 to 16/11/2024	16	Revision Of chapter 7
18/11/2024 to 22/11/2024	17	Revision of chapter 8th, 9th Practice of All chapters

Signature

Lesson Plan
Session: 2024-25

Name of the Assistant Professor: Bharat Kumar

Class: B.A./B.Sc. 1ˢᵗ semester **Subject:** Mathematics

Paper: Calculus

Dates	Week	Topic
22/07/2024 to 27/07/2024	1	Chapter 1,limit continuity and differentiability, limit of a function right hand limit and left hand limit, theorem, examples related limit, infinite limit, algebra of limit of functions related examples
29/07/2024 to 03/08/2024	2	Theorem Squeeze principle, some standard limits and related examples, exercise 1.1 continuous function some definitions discontinuous function kind of discontinuity,
05/08/2024 to 10/08/2024	3	Algebra of continuous function related examples, exercise 1.2, deriability at an Interior point related examples, exercise 1.3, successive differentiation related examples, exercise 2.1, some standard result for,derivative solved examples to find the derivative by use of partial fraction related example
12/08/2024 to 17/08/2024	4	Exercise 2.2, some typical and derivatives related examples exercise 2.3 Leibnitz theorem, related examples, exercise 2.4 calculation of nth order derivative at x=0 related examples exercise 2.5
19/08/2024 to 24/08/2024	5	Chapter 3, some general theorem on differentiable function and expansions, Taylor theorem with languages form of remainder after n terms, Taylor theorem with cauchy's form of reminder, maclurian theorem with Cauchy form of reminder related examples,
26/08/2024 to 31/08/2024	6	Exercise 3.1 infinite series related examples, application of Taylor theorem, exercise 3.2, Another form of Taylor series related examples, Exercise 3.3 expansion by differential equation related examples, exercise 3.4 asymptotes finite and infinite branches of curve, asymptotes,
02/09/2024 to 07/09/2024	7	Horizontal and vertical asymptotes parallel to the axis of the coordinates, related examples oblique asymptotes, exercise 4.1, oblique asymptotes of the general algebraic curve related examples
09/09/2024 to 14/09/2024	8	Exercise 4.2, two alternative methods of finding importance of algebraic curves intersection of the curve and its asymptotes, related examples, exercise 4.3 asymptotes of Polar curve related examples,
16/09/2024 to 21/09/2024	9	Exercise 4.4, position of the curve with respect to the asymptotes curvature to find the curvature when the equation of the curve is in form radius of curvature for cartesian equation, related examples,
23/09/2024 to 28/09/2024	10	Exercise 5.1,radius of curvature for polar equation related example ,exercise 5.2, radius of curvature at the origin related examples, exercise 5.3, centre of curvature , circle of curvature and evolute of a curve related examples,

Date		Content
30/09/2024 to 05/10/2024	11	Exercise 5.4 and concave , exercise 6.1, related examples concavity and convexity condition for concavity and convexity of the curve point of inflection, related examples exercise 6.2 & 6.3
07/10/2024 to 12/10/2024	12	Chapter 7, curve tracing, tracing of cartesian curves, solved examples, exercise 7.1, parametric equation solved examples, tracing of Polar curves related examples exercise 7.3
14/10/2024 to 19/10/2024	13	Reduction formula, chapter 8, reduction formula related examples, exercise 8.1, solved examples different type of reduction formulas and solved examples exercise 8.3
21/10/2024 to 26/10/2024	14	Exercise 8.4, Rectification, exercise 8.5, chapter number 9, rectification Fundamental Theorem about rectification related Example, exercise 9.1 **Mid Term Exam**
04/11/2024 to 09/11/2024	15	length of parametric curves and related examples, length of Polar curves related examples to prove that the length of the arc of the curve related examples exercise 9.4 ,
11/11/2024 to 16/11/2024	16	Quadrature, related examples ,exercise 10.1 area between two curves, exercise 10.2, area formula for popular curves related examples
18/11/2024 to 22/11/2024	17	Area between two polar curves related examples, volume and surfaces of solid of revolution related examples, exercise 11.1, any axis of revolution related examples,

Signature

Lesson Plan
Session: 2024-25

Name of the Assistant Professor: Bharat Kumar

Class: B.A./B.Sc. 2nd Semester **Subject:** Mathematics

Paper: Advanced Calculus

Dates	Week	Topic
22/07/2024 to 27/07/2024	1	Chapter 1- Continuous function, properties of continuous functions, examples and exercises.
29/07/2024 to 03/08/2024	2	Chapter 2-Mean Value theorem, Rolle's theorem, Taylor's theorem, examples and exercises.
05/08/2024 to 10/08/2024	3	Chapter 3- Indeterminate forms, examples and exercises.
12/08/2024 to 17/08/2024	4	Chapter 4- Limit and continuity of functions of two variables, examples and exercises 4.1
19/08/2024 to 24/08/2024	5	Chapter 5- Partial differentiation, examples and exercises 5.1 to 5.4
26/08/2024 to 31/08/2024	6	Chapter 6- differentiability of function of two variables. examples and exercises.
02/09/2024 to 07/09/2024	7	Chapter 7- Maximum and minimum of a function of two variables, solved examples.
09/09/2024 to 14/09/2024	8	Problems of exercise 7.1, 7.2
16/09/2024 to 21/09/2024	9	Chapter 8- Curves in space, regular curve, unit vector along tangent to a curve. length of arc of a curve, equation of tangent line, examples and exercise 8.1,8.2
23/09/2024 to 28/09/2024	10	Osculating plane, Analytic function, normal plane, examples and exercise 8.3, 8.4, 8.5
30/09/2024 to 05/10/2024	11	Chapter 9- radius and center of circle of curvature, properties of locus of the centre of curvature, osculating sphere, All examples of chapter 9

Date		Description
07/10/2024 to 12/10/2024	12	Chapter 9- solution of unsolved questions of exercises
14/10/2024 to 19/10/2024	13	Chapter 10- Envolutes, curvature and torsion of envolutes&evolutes, examples and exercise 10.1
21/10/2024 to 26/10/2024	14	Chapter 10- Bertrand curves, properties of bertrand curves, examples and exercise 10.2 **MID TERM EXAM**
04/11/2024 to 09/11/2024	15	Chapter 11-Definitions of surface, class & singularities of surface. parametric curves, tangent and normal plane, examples and exercise 11.1,11.2
11/11/2024 to 16/11/2024	16	Revision of chapters
18/11/2024 to 22/11/2024	17	Practice and Tests of all Chapters

Signature

Lesson Plan
Session: 2024-25

Name of the Assistant Professor: Bharat Kumar

Class: B.A./B.Sc. 1st semester**Subject**: Mathematics

Paper: Computer Skills

Dates	Week	Topic
22/07/2024 to 27/07/2024	1	**Unit 1:-** Windows: Installation of Windows, Windows Desktop, My computer, My documents, Network neighbourhood, Recycle Bin,
29/07/2024 to 03/08/2024	2	Quick launch tool bar, System tray, Start menu, Task bar - System Tray -
05/08/2024 to 10/08/2024	3	Quick launch tool bar - Start button - Parts of Windows, Keyboard Accelerators
12/08/2024 to 17/08/2024	4	Key board short keys or hotkeys, Working with Notepad
19/08/2024 to 24/08/2024	5	WordPad, Creating & Editing Images with Microsoft paint
26/08/2024 to 31/08/2024	6	using the Calculator, Personalising Windows
02/09/2024 to 07/09/2024	7	**UNIT 2:-** MS-Word: Working with Documents, formatting page & setting Margins, converting files to different formats, Importing & Exporting documents
09/09/2024 to 14/09/2024	8	Formatting Documents - Setting Font styles, Font selection- style, Setting Paragraph style, Alignments, Indents, Line Space, Margins, Bullets& Numbering
16/09/2024 to 21/09/2024	9	Setting Page style - Formatting Page, Page tab, Margins, Layout settings, Border & Shading, Columns, Header & footer, Setting Footnotes & end notes,
23/09/2024 to 28/09/2024	10	page break, Setting Document styles, Table of Contents, Index, Page Numbering, date & Time
30/09/2024 to 05/10/2024	11	Creating Tables- Table settings, Borders, Alignments, Insertion, deletion, Merging, Splitting, Sorting, Drawing - Inserting Clip Arts, Pictures/Files, Tools –Spell Checks, Mail merge, Templates, Printing Documents.
07/10/2024 to 12/10/2024	12	**Unit 3:-** MS-Excel: Spread Sheet & its Applications, Opening Spreadsheet, Menus, working with Spreadsheets- opening, saving files,

4/10/2024 to 19/10/2024	13	Setting Margins, spread sheet addressing - Rows, Columns & Cells, Referring Cells & Selecting Cells – Shortcut Keys.
21/10/2024 to 26/10/2024	14	Entering & Deleting Data, Inserting Data, Insert Cells, Column, rows & sheets, Inserting Functions, Formula **MID TERM EXAM**
04/11/2024 to 09/11/2024	15	finding total in a column or row, Mathematical operations (Addition, Subtraction, Multiplication, Division, Exponentiation)
11/11/2024 to 16/11/2024	16	Formatting Spreadsheets- Labelling columns & rows, Formatting- Cell, row, column & Sheet, Category
18/11/2024 to 22/11/2024	17	Alignment, Font, Border & Shading, Hiding/ Locking Cells, working with sheets – Sorting, Filtering, Creating Charts, Tools – Error checking, Spell Checks.

Signature