

Lesson Plan

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Department: Applied Science

Semester: 2nd

Subject and code: Applied Mathematics (220022)

Teaching load: 4 Lectures per week

Week	Lesson Plan
1 st	Definition of Function: Concept of limits (Introduction only) and problems related to four standard limits only.
2 nd	Differentiation of $x^n, \sin x, \cos x, e^x$ by first principle.
3 rd	. Differentiation of sum, product and quotient of functions.
4 th	Differential Calculus Its Application:- Differentiation of trigonometric function, inverse trigonometric functions. Logarithmic differentiation, successive differentiation (up to 2 nd order)
5 th	Application of differential calculus in: (a) Rate measures (b) Maxima and minima.
6 th	Calculus Integral Integration as inverse operation of differentiation with simple examples.
7 th	Simple standard integrals and related problems, integration by Substitution method and integration by parts.
8 th	Evaluation of definite integrals with given limits. Evaluation of Using formulae with proof (m and n being positive integers only) using pre- existing mathematical models.
9 th	Application o integration ,Numerical Integration and Differential Equation Applications of integration: for evaluation of area under a curve and axes (Simple problems).
10 th	Numerical integration by Trapezoidal Rule and Simpson's 1/3 rd Rule using pre-existing mathematical models.
11 th	Differential Equations Definition order ,degree, Type of differential Equations ,Linearity, Formulation of ordinary differential equation (up to 1 st order),solution of ODE (1 st order) by variable separation method.
12 th	Solution of ODE (1 st order) by variable separation method.

13th	Software Scilab software- Theoretical Introduction. Basic difference between MATLAB and Scilab software, Calculations with MATLAB or Scilab – (a) Representation of matrix (2x2 order), (b) Addition, Subtraction of matrices (2x2 order) in MATLAB or SciLab.
14th	Calculations with MATLAB or Scilab – (a) Representation of matrix (2x2 order), Addition, Subtraction of matrices (2x2 order) in MATLAB or SciLab
15th & 16th	Revision 1. Differential Calculus 2. Differential Calculus Its Application:- 3. Calculus Integral 4. Application o integration ,Numerical Integration and Differential Equation 5. Software