Lesson Plan

Mathematics

Week	Theory/Practical	
	Lecture Day	**Topic Including(assignment/Test)**
Ist	**1**	Introduction to syllabus and evaluation scheme **Unit1:- Differential Calculus** **1.1 Definition of function:** Concept of limits (Introduction only) and problems related to four standard limits only.
	2	**1.1 Definition of function:** Concept of limits (Introduction only) and problems related to four standard limits only.
	3	**1.1 Definition of function:** Concept of limits (Introduction only) and problems related to four standard limits only.
	4	**1.2** Differentiation of x^n , Sin x, Cos x, e^x by first principle.
IInd	**1**	**1.3** Differentiation of sum, product and quotient of functions.
	2	**1.3** Differentiation of sum, product and quotient of functions.
	3	**1.3** Differentiation of sum, product and quotient of functions.
	4	**Unit 2 Differential Calculus and Its Application** **2.1** Differentiation of trigonometric functions, inverse trigonometric function, Logarithmic differentiation, successive differentiation (upto 2^{nd} order)
IIIrd	**1**	**2.1** Differentiation of trigonometric functions, inverse trigonometric function, Logarithmic differentiation, successive differentiation (upto 2^{nd} order)
	2	**2.1** Differentiation of trigonometric functions, inverse trigonometric function, Logarithmic differentiation, successive differentiation (upto 2^{nd} order)
	3	**2.1** Differentiation of trigonometric functions, inverse trigonometric function, Logarithmic differentiation, successive differentiation (upto 2^{nd} order)
	4	**2.2** Application of differential calculus in: (a) Rate measure (b) Maxima and minima
IVth	**1**	**2.2** Application of differential calculus in: (a) Rate measure (b) Maxima and minima
	2	**2.2** Application of differential calculus in: (a) Rate measure (b) Maxima and minima
	3	Revision
	4	**Unit 3 Integral Calculus** **3.1** Integration as inverse operation of differentiation with simple examples.
Vth	**1**	First Sessional Test(Tentative)
	2	First Sessional Test(Tentative)
	3	First Sessional Test(Tentative)
	4	**3.1** Integration as inverse operation of differentiation with simple examples.
VIth	**1**	**3.1** Integration as inverse operation of differentiation with simple examples.
	2	**3.2** Simple standard integrals and related problems, Integration by Substitution method and integration by parts.
	3	**3.2** Simple standard integrals and related problems, Integration by Substitution method and integration by parts.
	4	**3.3** Evaluation of definite integrals with given limits. Evaluation of $\int_0^{\pi/2} \sin^n x.\,dx$, $\int_0^{\pi/2} \cos^n x\,dx$, $\int_0^{\pi/2} \sin^m x \cos^n .\,dx$, Using formula without proof (m and n being positive integers only) using pre-existing mathematical models.
VIIth	**1**	**3.3** Evaluation of definite integrals with given limits. Evaluation of $\int_0^{\pi/2} \sin^n x.\,dx$, $\int_0^{\pi/2} \cos^n x\,dx$, $\int_0^{\pi/2} \sin^m x \cos^n .\,dx$, Using formula without proof (m and n being positive integers only) using pre-existing mathematical models.
	2	**Unit4:- Application of Integration, Numerical Integration and Differential Equations** **4.1** Application of integration for evaluation of area under a curve and axes (Simple problems).
	3	**4.1** Application of integration for evaluation of area under a curve and axes (Simple problems).
	4	**4.2** Numerical of integration by Trapezoidal rule and Simpson's $1/3^{rd}$ Rule using pre-existing mathematical models.
VIIIth	**1**	**4.2** Numerical of integration by Trapezoidal rule and Simpson's $1/3^{rd}$ Rule using pre

	2	**Deferential, Equations** **4.3** Definition, order, degree, Type of differential Equation, Linearity, Formulation of ordinary differential equation (up to 1st order), solution of ODE (Ist order) by variable separation method.
	3	**4.3** Definition, order, degree, Type of differential Equation, Linearity, Formulation of ordinary differential equation (up to 1st order), solution of ODE (Ist order) by variable separation method.
	4	Revision
IXth	**1**	Second Sessional Test(Tentative)
	2	Second Sessional Test(Tentative)
	3	Second Sessional Test(Tentative).,
	4	**4.3** Definition, order, degree, Type of differential Equation, Linearity, Formulation of ordinary differential equation (up to 1st order), solution of ODE (Ist order) by variable separation method.
Xth	**1**	**Unit 5 Statistics and Software:- Statistics** **5.1 Measures of Central Tendency:** Mean, Median, Mode
	2	**5.1 Measures of Central Tendency:** Mean, Median, Mode
	3	**5.2 Measures of Dispersion:** Mean deviation, Standard deviation
	4	**5.2 Measures of Dispersion:** Mean deviation,Standard Deviation
XIth	**1**	**5.2 Measures of Dispersion:** Mean deviation,Standard Deviation
	2	**Software** **5.3 Sci lab Software**- Theoretical Introduction.
	3	**5.3 Sci lab Software**- Theoretical Introduction.
	4	**5.4** Basic difference between MATLAB and Sci Lab Software,
XIIth	**1**	**5.4** Basic difference between MATLAB and Sci Lab Software,
	2	**5.5 Calculations with MATLAB or Sci Lab –** (a) Representation of matrix (2*2 order), (b) Additional , Subtraction of matrices (2*2 order) in MATLAB or Sci Lab
	3	**5.5 Calculations with MATLAB or Sci Lab –** (a) Representation of matrix (2*2 order), (b) Additional , Subtraction of matrices (2*2 order) in MATLAB or Sci Lab
	4	Revision
XIIIth	**1**	Third Sessional Test (Tentative).
	2	Third Sessional Test (Tentative).
	3	Third Sessional Test (Tentative).
	4	Revision
XIVth	**1**	Revision
	2	Revision
	3	Revision
	4	Revision
XVth	**1**	Revision
	2	Revision
	3	Revision
	4	Revision