

## Lesson Plan

**Name of the Faculty** : Urmil Chaudhary  
**Discipline** : Common for all classes  
**Semester** : Second  
**Subject** : Applied Mathematics-II  
**Paper Code** : 170022  
**Lesson Plan Duration** : 15 weeks (from January 2018 to April 2018)

Week	Theory	
	Lecture Day	Topic (including assignment/ test)
1 <sup>st</sup>	1 <sup>st</sup>	Definition and concept of function
	2 <sup>nd</sup>	Exercise of functions
	3 <sup>rd</sup>	Concept of limits (Lecture-1)
	4 <sup>th</sup>	Concept of limits (Lecture-2)
	5 <sup>th</sup>	Concept of limits (Lecture-3)
2 <sup>nd</sup>	1 <sup>st</sup>	Concept of limits (Lecture-4)
	2 <sup>nd</sup>	Differentiation of $x^n$ , $\sin x$ by first principle.
	3 <sup>rd</sup>	Differentiation of $\cos x$ , $\tan x$ by first principle.
	4 <sup>th</sup>	Differentiation of $e^x$ by first principle.
	5 <sup>th</sup>	Differentiation of sum and difference of functions (Lecture-1)
3 <sup>rd</sup>	1 <sup>st</sup>	Differentiation of sum and difference of functions (Lecture-2)
	2 <sup>nd</sup>	Differentiation of product of functions (Lecture-1)
	3 <sup>rd</sup>	Differentiation of product of functions (Lecture-2)
	4 <sup>th</sup>	Differentiation of quotient of functions (Lecture-1)
	5 <sup>th</sup>	Differentiation of quotient of functions (Lecture-2)
4 <sup>th</sup>	1 <sup>st</sup>	Differentiation of quotient of functions (Lecture-3)
	2 <sup>nd</sup>	Differentiation of trigonometric functions (Lecture-1)
	3 <sup>rd</sup>	Differentiation of trigonometric functions (Lecture-2)
	4 <sup>th</sup>	Differentiation of trigonometric functions (Lecture-3)
	5 <sup>th</sup>	Class Work Checking
5 <sup>th</sup>	1 <sup>st</sup>	Differentiation of inverse trigonometric functions (Lecture-1)
	2 <sup>nd</sup>	Differentiation of inverse trigonometric functions (Lecture-2)
	3 <sup>rd</sup>	Differentiation of inverse trigonometric functions (Lecture-3)
	4 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Logarithmic differentiation (Lecture-1)</li> <li>• Assignment work on Differential Calculus</li> </ul>
	5 <sup>th</sup>	Logarithmic differentiation (Lecture-2)
6 <sup>th</sup>	1 <sup>st</sup>	Formulas revision of Differential Calculus with examples
	2 <sup>nd</sup>	Successive Differentiation upto 2 <sup>nd</sup> order (Lecture-1)
	3 <sup>rd</sup>	Successive Differentiation upto 2 <sup>nd</sup> order (Lecture-2)
	4 <sup>th</sup>	Successive Differentiation upto 2 <sup>nd</sup> order (Lecture-3)
	5 <sup>th</sup>	Application of differential calculus in Rate Measures (Lecture-1)
7 <sup>th</sup>	1 <sup>st</sup>	Application of differential calculus in Rate Measures (Lecture-2)
	2 <sup>nd</sup>	Application of differential calculus in Rate Measures (Lecture-3)
	3 <sup>rd</sup>	Application of differential calculus in Maxima and Minima (Lecture-1)
	4 <sup>th</sup>	Application of differential calculus in Maxima and Minima (Lecture-2)
	5 <sup>th</sup>	Application of differential calculus in Maxima and Minima (Lecture-3)
8 <sup>th</sup>	1 <sup>st</sup>	Problem discussion of Unit 1 (Differential Calculus)
	2 <sup>nd</sup>	<ul style="list-style-type: none"> <li>• Home Work Checking</li> <li>• Assignment Checking</li> </ul>
	3 <sup>rd</sup>	Test-1
	4 <sup>th</sup>	Integration as inverse operation of differentiation with simple examples
	5 <sup>th</sup>	Indefinite Integral (Lecture-1)
9 <sup>th</sup>	1 <sup>st</sup>	Indefinite Integral (Lecture-2)
	2 <sup>nd</sup>	Indefinite Integral (Lecture-3)
	3 <sup>rd</sup>	Indefinite Integral (Lecture-4)
	4 <sup>th</sup>	Indefinite Integral (Lecture-5)
	5 <sup>th</sup>	Indefinite Integral (Lecture-6)

10 <sup>th</sup>	1 <sup>st</sup>	Indefinite Integral (Lecture-7)
	2 <sup>nd</sup>	<ul style="list-style-type: none"> <li>• Class Work Checking</li> <li>• Assignment work on Integral Calculus</li> </ul>
	3 <sup>rd</sup>	Definite Integrals (Lecture-1)
	4 <sup>th</sup>	Definite Integrals (Lecture-2)
	5 <sup>th</sup>	Definite Integrals (Lecture-3)
11 <sup>th</sup>	1 <sup>st</sup>	Definite Integrals (Lecture-4)
	2 <sup>nd</sup>	Evaluation of $\int_0^{\frac{\pi}{2}} \sin^n x dx \text{ and } \int_0^{\frac{\pi}{2}} \cos^n x dx$
	3 <sup>rd</sup>	Evaluation of $\int_0^{\frac{\pi}{2}} \sin^m x \cos^n x dx$
	4 <sup>th</sup>	Formulas revision of Integral Calculus with examples
	5 <sup>th</sup>	Applications of integration for evaluation of area under a curve and axes (Lecture-1)
12 <sup>th</sup>	1 <sup>st</sup>	Applications of integration for evaluation of area under a curve and axes (Lecture-2)
	2 <sup>nd</sup>	Numerical integration by Trapezoidal Rule using pre-existing mathematical models (Lecture-1)
	3 <sup>rd</sup>	Numerical integration by Trapezoidal Rule using pre-existing mathematical models (Lecture-2)
	4 <sup>th</sup>	Numerical integration by Simpson's 1/3 <sup>rd</sup> Rule using pre-existing mathematical models (Lecture-1)
	5 <sup>th</sup>	Numerical integration by Simpson's 1/3 <sup>rd</sup> Rule using pre-existing mathematical models (Lecture-2)
13 <sup>th</sup>	1 <sup>st</sup>	Problem discussion of Unit 2 (Integral Calculus)
	2 <sup>nd</sup>	<ul style="list-style-type: none"> <li>• Home Work Checking</li> <li>• Assignment Checking</li> </ul>
	3 <sup>rd</sup>	Test-2
	4 <sup>th</sup>	Definition, Order, Degree and Linearity of an ordinary differential equation (Lecture-1)
	5 <sup>th</sup>	Definition, Order, Degree and Linearity of an ordinary differential equation (Lecture-2)
14 <sup>th</sup>	1 <sup>st</sup>	<ul style="list-style-type: none"> <li>• Class Work Checking</li> <li>• Assignment work on Differential Equations and Statistics</li> </ul>
	2 <sup>nd</sup>	Measures of Central Tendency: Mean
	3 <sup>rd</sup>	Measures of Central Tendency: Median
	4 <sup>th</sup>	Measures of Central Tendency: Mode
	5 <sup>th</sup>	Measures of Dispersion: Mean deviation
15 <sup>th</sup>	1 <sup>st</sup>	Measures of Dispersion: Standard Deviation
	2 <sup>nd</sup>	Co-efficient of rank correlation
	3 <sup>rd</sup>	Problem discussion of Unit 3 (Differential Equations and Statistics)
	4 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Home Work Checking</li> <li>• Assignment Checking</li> </ul>
	5 <sup>th</sup>	Test-3