Name of Faculty	:	Faculty of Diploma Engineering
Name of Program	:	Diploma Engineering
Course Code	:	2DAD01
Course Title	:	Advance Calculus
Type of Course	:	Basic Science (BS)
Year of Introduction	:	2023-24

Prerequisite	:	Derivation ,Integration
Course Objective	:	To learn about the topics of formula derivation ,integration ,and algebra
Course Outcomes	:	At the end of this course, students will be able to:
	CO1	To **understand** the ability to analyze and illustrate the Function using the concept of Limit
	CO2	To **understand** the ability to solve engineering related problems based on applications of differentiation
	CO3	To **remembrance** the ability to solve engineering related problems based on applications of integration
	CO4	To **Evaluate** engineering problems using the concept of complex numbers
	CO5	To **Evaluate** applied problems using the concept of mean, median and mode

Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
				Theory Marks		Practical Marks		Total Marks
L	**T**	**P**	**C**	**SEE**	**CIA**	**SEE**	**CIA**	
3	0	0	3	70	30	00	00	100

Legends: ***L****-Lecture;* ***T****–Tutorial/Teacher Guided Theory Practice;* ***P****– Practical,****C*** *– Credit,* ***SEE*** *– Semester End Examination,* ***CIA*** *- Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.))*

Course Content

Unit No.	Topics	Teaching Hours	Weightage	Mapping with CO
1	**Limit and Functions** Limit of a Function, formula of Limit and related simple examples, Function and simple examples	12	25%	CO1
2	**Differentiation** Concept and Definition of Differentiation ,Working rules : Sum, Product, Division, Chain Rule, Derivative of Implicit functions Derivative of Parametric functions, Logarithmic Differentiation , Successive Differentiation up to second order	12	25%	CO2
3	**Integration** Concept and Definition of Integration ,Working rules and Integral of standard functions, Method of substitution ,Integration by parts, Definite Integral and its properties.	12	25%	CO3
4	**Complex numbers** Concept of complex number, Algebra of complexnumbers, Conjugate,Modulus and Inverse of complexnumbers, Argument and Polar form of a complexnumbers	6	15%	CO4
5	**Basic statistics** Find Mean for the given data, Find Median for the given data, Find Mode for the given data	3	10%	CO5

Suggested Distribution of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
Weightage	**35**	**35**	**00**	**00**	**35**	**-**

NOTE: This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Suggested Learning Websites

Sr. No.	Name of Website
1	https://tutorial.math.lamar.edu/classes/calci/calci.aspx
2	https://www.nptel.ac.in
3	https://www.khanacademy.com

Reference Books

Sr. No.	Name of Reference Books
1	Mathematics-II ByA. Ganesh , New Age Publication
2	Engineering Mathematics (Third edition) By Dr. Sachin J Gajjar
3	Mathematics-II By G. Balsubramanian, New Age Publication
4	Mathematics-II By Dr. Sachin J Gajjar ,Atul prakashan