STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI
COURSE PLAN
November 2023 – April 2024

Department : Mathematis
Name/s of the Faculty : Dr. Sindiya Therese S
Course Title : INTEGRAL CALCULUS
Course Code : 23MT/MC/IC23
Shift : II

COURSE OUTCOMES (COs)

COs	Description	CL
CO1	recall and reproduce various integration techniques	K1
CO2	understand the concept of multiple and improper integrals	K2
CO3	employ various techniques in evaluating multiple integrals	K3
CO4	analyse and explain the results of multiple integral through illustrations with examples	K4
CO5	predict appropriate methods to find the solution of problems on integral calculus	K5

Week	Unit No.	**Content**	**Cognitive Level**	**Teaching Hours**	**Cos**	**Teaching Learning Methodology**	**Assessment Methods**
Nov 22 – 23, 2023 (Day Order 1 & 2)	I	**Methods of Integration** 1.1 Integration of irrational functions of the type: $\frac{1}{(x-k)\sqrt{ax^2+bx+c}}$, $\frac{1}{(Ax^2+B)\sqrt{Cx^2+D}}$,	K1-K5	1	CO1-5	Problem Solving and Group Work	Quiz and Slip Test
Nov 24-30, 2023 (Day Order 1 to 6)	I	1.1 Integration of irrational functions of the type: $\frac{1}{(ax^2+bx+c)\sqrt{Ax^2+Bx+\sqrt{(x-\alpha)(\beta-x)}}}$, $\frac{1}{\sqrt{(x-\alpha)(\beta-x)}}$, $\sqrt{\frac{x-\alpha}{\beta-x}}$	K1-K5	4	CO1-5	Problem Solving and Group Work	Quiz and Slip Test
Dec 1-7, 2023 (Day Order 1 to 6)	I	1.2 Integration of functions of type: $\frac{1}{a+b\cos x}$	K1-K5	4	CO1-5	Problem Solving and Group Work	Quiz and Slip Test
Dec 8-9, 2023 (Day Order 1, 3)	I	1.2 Integration of functions of type: $\frac{1}{\sqrt{a^2\cos^2 x+b^2\sin^2 x}}$	K1-K5	2	CO1-5	Problem Solving and Group Work	Quiz and Slip Test

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Dec 11-15, 2023 (Day Order 2 to 6)	II	**Improper Integrals** 2.1 Infinite Integrals	K1-K5	2	CO1-5	Problem Solving and Group Work	Quiz and Slip Test
Dec 16 – 22, 2023 (Day Order 1 to 6)	II	2.2 Discontinuous Integrands	K1-K5	4	CO1-5	Problem Solving and Group Work	Quiz and Slip Test
Jan 3 – 6, 2024 (Day Order 1 to 4)	II	2.3 Comparison Test	K1-K5	1	CO1-5	Problem Solving and Group Work	Quiz and Slip Test
Jan 8 – 12, 2024	C.A. Test – I – Unit I and II						
Jan 13, 2024 (Day Order 1)	II	2.3 Comparison Test	K1-K5	1	CO1-5	Problem Solving and Group Work	Quiz and Slip Test
Jan 18 -20, 2024 (Day Order 4 to 6)	III	**Double Integrals** 3.1 Iterated Integrals 3.2 Double Integrals over General Regions	K1-K5	3	CO1-5	Problem Solving and Group Work	**III Component Test Part I** Problem test on assignment - 25 marks
Jan 22-29, 2024 (Day Order 1 to 6)	III	3.3 Double Integrals in Polar Coordinates	K1-K5	4	CO1-5	Problem Solving and Group Work	Quiz and Slip Test

Week	Unit No.	**Content**	**Cognitive Level**	**Teaching Hours**	**Cos**	**Teaching Learning Methodology**	**Assessment Methods**
Jan 30 – Feb 2, 2024 (Day Order 1 to 4)	III	3.4 Surface Area using Double Integrals	K1-K5	4	CO1-5	Problem Solving and Group Work	Quiz and Slip Test
Feb 3, 2024 (Day Order 2)		No Class		0			
Feb 5- 6, 2024 (Day Order 5 to 6)	IV	**Triple Integrals** 4.1 Triple Integrals	K1-K5	3	CO1-5	Problem Solving and Group Work	Quiz and Slip Test
Feb 7 – 14, 2024 (Day Order 1 to 6)	IV	4.2 Applications of Triple Integrals	K1-K5	4	CO1-5	Problem Solving and Group Work	Quiz and Slip Test
Feb 15 – 22, 2024 (Day Order 1 to 6)	IV	4.3 Change of Variable in Double and Triple Integral	K1-K5	4	CO1-5	Problem Solving and Group Work	Quiz and Slip Test
Feb 23 – 24, 2024 (Day Order 1 & 5)	V	**Beta and Gamma Integrals** 5.1 Definitions of Beta and Gamma Integrals	K1-K5	2	CO1-5	Problem Solving and Group Work	Quiz and Slip Test
Feb 26 – Mar 1, 2024 (Day Order 2 to 6)	V	5.2 Recurrence Formula for Gamma Functions 5.3 Properties of Beta Functions	K1-K5	3	CO1-5	Problem Solving and Group Work	Quiz and Slip Test
Mar 2, 2024	V	**Beta and Gamma Integrals**	K1-K5	1	CO1-5	Problem Solving and Group Work	Quiz and Slip Test

Week	Unit No.	**Content**	**Cognitive Level**	**Teaching Hours**	**Cos**	**Teaching Learning Methodology**	**Assessment Methods**
(Day Order 1)		5.4 Relation between Beta and Gamma Functions					
Mar 4 –8, 2024	C.A. Test – II – Unit III and IV						
Mar 9 – 16, 2024 (Day 6 & Day Order 1 to 6)	V	5.4 Relation between Beta and Gamma Functions	K1-K5	4	CO1-5	Problem Solving and Group Work	**III Component Test Part II** – Unit V, Problem test 25 marks
Mar 18 - 19, 2024 (Day Order 2 to 3)		No Class		0			
Mar 20-22, 2024 (Day Order 4 to 6)	REVISION						