STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI
COURSE PLAN June - November 2024

Department : ECONOMICS
Name/s of the Faculty : Ms. J Kaviya Nijaritha
Course Title : MATHEMATICS FOR ECONOMICS
Course Code : 23EC/PE/ME15
Shift : I

COURSE OUTCOMES (COs)

COs	Description	CL
CO1	Enumerate advanced mathematical modelling for economic research.	K1
CO2	Integrate economic theories with mathematical techniques to quantitatively infer economic policies.	K2
CO3	Discover problem solving methods in algebra and optimisation to sensitively respond to Economic issues.	K3
CO4	Analyse complex quantitative methods to build economic theories.	K4
CO5	Evaluate optimization techniques and dynamic analysis to critique current economic issues and build inclusive policies.	K5-K6

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Jun 24 – 26, 2024 (Day Order 4 - 6)	I	Unit 1 Linear Algebra 1.1 Matrices, Inverse, Simultaneous Linear Equations, Cramer's Rule for Solving System of Linear Equations.	K1-K5	2	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review/ CA
Jun 27 – July 4, 2024 (Day Order 1 - 6)	I	1.2 Rank of a Matrix, Eigen Values and Vectors – Cayley Hamilton's Theorem 1.3 Leontief Input-Output Model, Hawkins –Simon Condition	K1-K2	5	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review/ CA
July 5 – 12, 2024 (Day Order 1 - 6)	I	1.4 Open and Closed Model Unit 2 Differential Calculus 2.1 Derivatives – Single Variable and Multi Variable – Partial and Total – Young's Theorem	K1-K6	5	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review/ CA

July 15 – 23, 2024 (Day Order 1 - 6)	&II	2.2 Economic Applications, Marginal and Elasticity Concept 2.3 Convex and Concave Functions - Applications – Utility Maximization, Cost Minimization, Profit – Output Maximization	K1-K5	5	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review/ CA
July 24 – 31, 2024 (Day Order 1 - 6)	II	2.4 Constrained Optimization With Equality Constraints, Lagrangian Method	K1-K6	5	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review/ CA
Aug 1 – 5, 2024 (Day Order 1 - 3)	II	2.5 Unconstrained Optimization in Single and Multi- Variable Functions	K1-K6	3	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review/ CA
Aug 6 – 10, 2024	**C.A. Test - I**						
Aug 12 – 14, 2024 (Day Order 4-6)	III	3.1 Introduction to Linear Programming and Graphical Solution of the Diet and Production Problems	K1-K6	2	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review/ CA

Aug 16 – 23, 2024 (Day Order 1-6)	III	3.2 Formulation of the Dual Programme – Statement of Duality Theorems	K1-K6	5	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review/ CA
Aug 27 – Sep 3, 2024 (Day Order 1-6)	III	3.3 Applications from Economics	K1-K5	5	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review/ CA
Sep 4 – 11, 2024 (Day Order 1-6)	IV	4.1 Introduction to Integrals	K1-K6	5	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review/ CA
Sep 12 - 20, 2024 (Day Order 1-6)	IV	4.2 Methods of Integration – Parts, Substitution, and Partial fractions (Basic arithmetic sums only).	K1-K5	5	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review/ CA
Sep 23 - 26, 2024 (Day Order 1-4)	IV	4.3 Application - Measuring Consumer Surplus and Producer Surplus	K1-K5	4	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review/ CA
Sep 27 – Oct 3, 2024	**C.A. Test - II**						

Oct 4 – 5, 2024 (Day 5 & 6)	V	5.1 Difference Equations – First and Second order	K1-K5	1	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review
Oct 7 - 15, 2024 (Day Order 1 to 6)	V	5.2 Difference Equations and Economic models - Cobweb Model, Samuelson's Multiplier Accelerator 5.3 Differential Equations – First and Second Order	K1-K6	5	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review
Oct 16 - 22, 2024 (Day Order 1 to 6)	V	5.3 Differential Equations – First and Second Order 5.4 Differential Equations and Economic models - Harrod-Domar and Solow Model	K1-K6	5	1-5	Lecture/ Problem Solving/ Discussion using Mathematical Economic problems/ Real time case study analysis/ Research paper analysis	Problem Assignment/ Quiz / Article Review
Oct 23 - 24, 2024 (Day Order 1 to 2)	**REVISION**						