

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI
Course Schedule: June - November 2024

Department : Mathematics
 Name/s of the Faculty : Dr. A. Josephine Lissie
 Course Title : Principles of Real Analysis
 Course Code : 19MT/MC/RA55
 Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Jun 19 – 26, 2024 (Day 1 - 6) 5 hours	Unit 1: Limits and Continuity on \mathbb{R}^1 1.1 Limit of a Function on the Real Line 1.2 Functions Continuous at a Point on the Real line	Brain Storming	Goldberg Richard R. <i>Methods of Real Analysis</i>	Questioning
Jun 27 – July 4, 2024 (Day 1 - 6) 5 hours	1.2 Reformulation 1.3 Discontinuous functions on \mathbb{R}^1	Lecture	Goldberg Richard R. <i>Methods of Real Analysis</i>	Group Discussion
July 5 – 12, 2024 (Day 1 - 6) 5 hours	Unit 2: Limits and Continuity on Metric Spaces 2.1 Metric Space 2.2 Limits in Metric Spaces	Problem Solving	Kumar Ajit, Kumarasan S. A <i>Basic Course in Real Analysis</i> , USA: CPC Press 2014	Slip Test
July 15 – 23, 2024 (Day 1 - 6) 5 hours	2.3 Functions Continuous on a Metric Space 2.4 Open Sets	Lecture & Problem Solving	Goldberg Richard R. <i>Methods of Real Analysis</i>	III Component Test –I Quiz (15 marks) Unit 1
July 24 – 31, 2024 (Day 1 - 6) 5 hours	2.5 Closed Sets Unit 3: Connectedness and Completeness on Metric Spaces 3.1 Connected Sets	Lecture Problem Solving	Goldberg Richard R. <i>Methods of Real Analysis</i>	Problem Solving
Aug 1 – 5, 2024 (Day 1 - 6) 5 hours	3.2 Bounded Sets and Totally Bounded Sets	Lecture Problem Solving	Malik S C, <i>Principles of Real Analysis</i> . Third edition. New Delhi: New Age, 2011.	Concept analyzing
Aug 6 – 10, 2024	C.A. Test – I UNIT: II & III(3.2)			

Aug 12 – 14, 2024 (Day 4-6) 2 hours	3.3 Complete Metric Spaces	Lecture & Problem Solving	Kumar Ajit, Kumarasan S. A <i>Basic Course in Real Analysis</i> , USA: CPC Press 2014	Questioning
Aug 16 – 23, 2024 (Day 1-6) 5 hours	Unit 4: Compactness on Metric Spaces 4.1 Compact Metric Spaces 4.2 Continuous Functions on a Compact Metric Space	Lecture & Problem Solving	Goldberg Richard R. <i>Methods of Real Analysis</i>	Discussion
Aug 27 – Sep 3, 2024 (Day 1-6) 5 hours	4.3 Continuity of an inverse 4.4 Uniform Continuity	Lecture & Problem Solving	Goldberg Richard R. <i>Methods of Real Analysis</i>	III Component- Test II Multiple Choice(15 marks) - Unit 3
Sep 4 – 11, 2024 (Day 1-6) 5 hours	Unit 5: Riemann Integration 5.1 Definition of the Riemann Integral	Lecture & Problem Solving	Malik S C, <i>Principles of Real Analysis</i> . Third edition. New Delhi: New Age, 2011.	Discussion
Sep 12 - 20, 2024 (Day 1- 6) 5 hours	5.2 Properties of the Riemann Integral Derivatives 5.3 Integral Derivatives	Lecture & Problem Solving	Goldberg Richard R. <i>Methods of Real Analysis</i>	Questioning
Sep 23 - 26, 2024 (Day 1-4) 4 hours	5.4 Rolle's Theorem	Lecture & Problem Solving	Goldberg Richard R. <i>Methods of Real Analysis</i>	Questioning
Sep 27 – Oct 3, 2024	C.A. Test – II UNIT: IV & UNIT V- Sec 5.1-5.3			
Oct 4 – 5, 2024 (Day 5 & 6) 1 hour	5.5 The Law of the Mean	Lecture & Problem Solving	Goldberg Richard R. <i>Methods of Real Analysis</i>	Slip Test
Oct 7 - 15, 2024 (Day 1- 6) 5 hours	5.6 Fundamental Theorem of Calculus	Lecture Problem Solving	Malik S C, <i>Principles of Real Analysis</i> . Third edition. New Delhi: New Age, 2011.	III Component Test III open book test (20 marks) Unit -5
Oct 16 - 22, 2024 (Day 1 - 6) 5 hours	5.7 Improper Integrals	Lecture Problem Solving	Goldberg Richard R. <i>Methods of Real Analysis</i>	
Oct 23 - 24, (Day 1 - 2) 2 hours	REVISION			