

**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI**

**Course Schedule: June - November 2024**

**Department** : Mathematics  
**Name/s of the Faculty** : Dr. Sindiya Therese S  
**Course Title** : Principles of Real Analysis  
**Course Code** : 19MT/MC/RA55  
**Shift** : II

<b>Week &amp; No. of hours</b>	<b>Units &amp; Topics</b>	<b>Teaching Methodology</b>	<b>Text &amp; References</b>	<b>Method of Evaluation</b>
Jun 19 – 26, 2024 (Day Order 1 - 6) 5 hours	<b>Unit 1</b> 1.1 Limit of a Function on the Real Line	Lecture Group Discussion	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	Questioning
Jun 27 – July 4, 2024 (Day Order 1 - 6) 5 hours	1.2 Functions Continuous at a Point on the Real Line – Reformulation	Lecture & Problem Solving	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	Questioning
July 5 – 12, 2024 (Day Order 1 - 6) 5 hours	1.3 Discontinuous functions on $\mathbb{R}^1$	Lecture & Problem Solving Group Work	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	Slip Test
July 15 – 23, 2024 (Day Order 1 - 6) 5 hours	<b>Unit 2</b> 2.1 Metric Space 2.2 Limits in Metric Spaces	Lecture & Presentation	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	Questioning
July 24 – 31, 2024 (Day Order 1 - 6) 5 hours	2.3 Functions Continuous on a Metric Space 2.4 Open Sets	Lecture Group Discussion	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	Questioning
Aug 1 – 5, 2024 (Day Order 1 - 3) 3 hours	2.5 Closed Sets	Lecture & Problem Solving	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	Questioning
Aug 6 – 10, 2024	<b>C.A. Test – I (Unit I and II)</b>			

Aug 12 – 14, 2024 (Day Order 4-6) 2 hours	<b>Unit 3</b> 3.1 Connected Sets	Lecture Group Discussion	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	Questioning
Aug 16 – 23, 2024 (Day Order 1-6) 5 hours	3.2 Bounded Sets and Totally Bounded Sets	Lecture & Presentation	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	Slip Test
Aug 27 – Sep 3, 2024 (Day Order 1-6) 5 hours	3.3 Complete Metric Spaces	Lecture & Problem Solving	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	<b>III Component test Part I:</b> Problem test on Unit III (20 marks)
Sep 4 – 11, 2024 (Day Order 1-6) 5 hours	<b>Unit 4</b> 4.1 Compact Metric Spaces 4.2 Continuous Functions on a Compact Metric Space	Lecture Group Discussion	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	Slip Test
Sep 12 - 20, 2024 (Day Order 1- 6) 5 hours	4.3 Continuity of an inverse function 4.4 Uniform Continuity	Lecture & Presentation	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	Questioning
Sep 23 - 26, 2024 (Day Order 1-4) 4 hours	<b>Unit 5</b> 5.1 Definition of the Riemann Integral 5.2 Properties of the Riemann Integral	Lecture & Problem Solving	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	Slip Test
Sep 27 – Oct 3, 2024	<b>C.A. Test – II (Unit III and IV)</b>			

Oct 4 – 5, 2024 (Day 5 & 6) 2 hours	5.3 Derivatives 5.4 Rolles' Theorem	Lecture & Presentation	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	<b>III Component test Part II:</b> Unit V, Assignment and test (30 marks)
Oct 7 - 15, 2024 (Day Order 1 to 6) 5 hours	5.5 The Law of the Mean 5.6 Fundamental Theorem of Calculus	Lecture Group Discussion	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	Questioning
Oct 16 - 22, 2024 (Day Order 1 to 6) 5 hours	5.7 Improper Integrals	Lecture & Problem Solving	Goldberg Richard R. <b>Methods of Real Analysis.</b> Indian Edition. New Delhi: Oxford, 1970, Reprint 2017.	Questioning
Oct 23 - 24, 2024 (Day Order 1 to 2)	<b>REVISION</b>			