STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule: November 2024 – April 2025

Department : MATHEMATICS

Name/s of the Faculty : Dr. JUDE ANNIE CYNTHIA.V & Dr.CHINTHAMANI.S

Course Title : PRINCIPLES OF MECHANICS

Course Code : 19MT/MC/PM65

Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 18 – 25, 2024 (Day Order 1-6) (3+3) hrs	**UNIT 1:** 1.1 Forces 1.2 Types of Forces **UNIT 4:** 4.1 Equilibrium of Strings and Chains	Lecture & Group discussion	Dharmapadam A.V. Statics, Chennai: S. Viswanathan, 2006. Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	Short Q/A
Nov 26- Dec 3, 2024 (Day Order 1 to 6) (3+3) hrs	**UNIT 1:** 1.3 Parallelogram Law of Forces 1.4 Triangle Law of Forces **UNIT 4:** 4.2 Common Catenary	Lecture & Group discussion	Dharmapadam A.V. Statics, Chennai: S. Viswanathan, 2006. Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	Assignment
Dec 4-11, 2024 (Day Order 1 to 6) (3+3) hrs	**UNIT 1:** 1.5 Polygon Law of Forces **UNIT 4:** 4.3 Suspension Bridge	Lecture & Group discussion	Dharmapadam A.V. Statics, Chennai: S. Viswanathan, 2006. Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	Short Q/A Quiz
Dec 12-19, 2024 (Day Order 1 to 6) (3+3) hrs	**UNIT 1:**1.6 Lami's Theorem **UNIT 4:** 4.4 Equations of Motion of a Particle Falling under Gravity in a Resisting Medium under Law of Resistance mkv, mkv^2	Lecture & Group discussion	Dharmapadam A.V. Statics, Chennai: S. Viswanathan, 2006. Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	Discussion

Dec 20, 2024 (Day Order 1) (0+1) Hr	**UNIT 1:**1.6 Lami's Theorem	Lecture & Group discussion	Dharmapadam A.V. Statics, Chennai: S. Viswanathan, 2006. Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	Quiz Discussion
Jan 3 – 7, 2025 (Day Order 3 to 6) (3+1) hrs	**UNIT 1:** 1.7 Conditions of Equilibrium of any Number of Forces Acting on a Particle **UNIT 4:** 4.5 Limiting Velocity	Lecture & Group discussion	Dharmapadam A.V. Statics, Chennai: S. Viswanathan, 2006. Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	**III COMPONENT TEST I:** Quiz(15 marks)
Jan 8 – 17, 2024 (Day Order 1 to 6) (3+3) hrs	**UNIT 1:** 1.7 Conditions of Equilibrium of any Number of Forces Acting on a Particle **UNIT 2: Non-Concurrent Coplanar Forces –** Introduction **UNIT 5:** 5.1 Moment of Inertia 5.2 Theorem of Parallel and Perpendicular Axes (statements only)	Lecture & Group discussion	Dharmapadam A.V. Statics, Chennai: S. Viswanathan, 2006. Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	Quiz Discussion
Jan 18 - 23, 2025	**C.A. Test – I (Unit 1: 1.1-1.6 & Unit 4: 4.1-4.4)**			
Jan 24 - 30, 2025 (Day Order 1 to 6) (3+3) hrs	**UNIT 2:** 2.1 Moment of a Force about a Point and a Line 2.2 Parallel Forces **UNIT 5:** 5.3 Moment of Inertia of Simple Standard Bodies 5.4 Motion of a Rigid Body	Lecture & Group discussion	Dharmapadam A.V. Statics, Chennai: S. Viswanathan, 2006. Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	Short Q/A Quiz
Feb 3-8, 2025 (Day Order 1 to 6) (3+3) hrs	**UNIT 2:** 2.3 Varignon's Theorem 2.4 Couples **UNIT 5:** 5.5 Rotation about a Fixed Axis 5.6 Expressions for Kinetic Energy	Lecture & Group discussion	Dharmapadam A.V. Statics, Chennai: S. Viswanathan, 2006. Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	Discussion

Feb 10– 18, 2025 (Day Order 1 to 4) (1+3) hrs	**UNIT 2:** 2.5 Properties of Couples **UNIT 5:** 5.7 Angular Momentum	Lecture & Group discussion	Dharmapadam A.V. Statics, Chennai: S. Viswanathan, 2006. Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	Short Q/A
Feb 19- 26, 2025 (Day Order 1-6) (3+3) hrs	**UNIT 2:** 2.6 Coplanar Forces 2.7 Reduction of any Coplanar System of Forces **UNIT 5:** 5.7 Angular Momentum	Lecture & Group discussion	Dharmapadam A.V. Statics, Chennai: S. Viswanathan, 2006. Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	**III COMPONENT:** Slip Test -20 marks Portion : Unit 1 and 2.1 -2.5
Feb 27- Mar 6, 2025 (Day Order 1 to 6) (3+3) hrs	**UNIT 2:** 2.8 Conditions of Equilibrium 2.9 Equilibrium of Three Forces Acting on a Rigid Body **UNIT 5:** 5.8 Equation of Motion **UNIT 3:** 3.1 Laws of Statical Friction	Lecture & Group discussion	Dharmapadam A.V. Statics, Chennai: S. Viswanathan, 2006. Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	Short Q/A Quiz
Mar 7 – 11, 2025 (Day Order 1 to 3) (0+3) hrs	**UNIT 2:** 2.9 Equilibrium of Three Forces Acting on a Rigid Body **UNIT 3:** 3.2 Coefficient of Friction	Lecture & Group discussion	Dharmapadam A.V. Statics, Chennai: S. Viswanathan, 2006. Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	Quiz Discussion
Mar 12 –17, 2025	**C.A. Test – II (Unit2: 2.1 – 2.7 & Unit 5: 5.1 – 5.7)**			
Mar 18 – 20, 2025 (Day 4 to 6) (3+1) hrs	**UNIT 3:** 3.3 Angle of Friction 3.4 Cone of Friction 3.5 Law of Kinetic Friction	Lecture & Group discussion	Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	**III COMPONENT TEST III-** Exhibition – 15 marks
Mar 21 - 28, 2025 (Day Order 1 to 6) (3+3) hrs	**UNIT 3:** 3.6 Equilibrium of a Particle on an Inclined Plane 3.7 Condition for Sliding and Toppling	Lecture & Group discussion	Dharmapadam A.V. Dynamics, Chennai: S. Viswanathan, 2006.	Short Q/A
Mar 29- April 2, 2025 (Day Order 1 to 3)	**REVISION**			