



**SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND
TECHNOLOGY
AMARAVATHIPUDUR, KARAIKUDI**

DEPARTMENT OF MECHANICAL ENGINEERING

PEOs / Pos / Cos MAPPING

PROGRAM EDUCATIONAL OBJECTIVES (PEOs) :

- I. Effectuating success in careers by exploring with the design, digital and computational analysis of engineering systems, experimentation and testing, smart manufacturing, technical services, and research.
- II. Amalgamating effectively with stakeholders to update and improve their core competencies and abilities to ethically compete in the ever-changing multicultural global enterprise.
- III. To encourage multi-disciplinary research and development to foster advanced technology, and to nurture innovation and entrepreneurship in order to compete successfully in the global economy.
- IV. To globally share and apply technical knowledge to create new opportunities that proactively advances our society through team efforts and to solve various challenging technical, environmental and societal problems.
- V. To create world class mechanical engineers capable of practice engineering ethically with a solid vision to become great leaders in academia, industries and society.

PROGRAM OUTCOMES (POs) :

- 1 Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2 Problem analysis:** Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3 Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4 Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- 5 Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- 6 The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. B. E. MECHANICAL ENGINEERING
- 7 Environment and sustainability:** Understand the impact of the professional engineering solutions in



societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8 Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9 Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

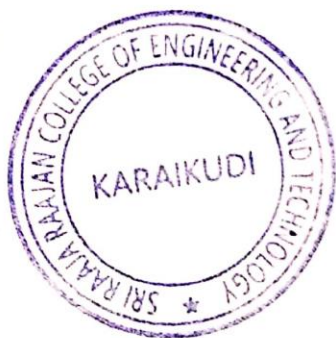
10 Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11 Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12 Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PEO / PO MAPPING:

PEOs	POs											
	1	2	3	4	5	6	7	8	9	10	11	12
I.	3	3	3	3	3	3	3	3	3	3	3	3
II.	3	2	2	2	2	1	1	1	3		2	1
III.	3	1	2	1	2	2	1		1	2		3
IV.	2	2	2	2	2		2				1	2
V.	3	2	2	2	1	3	2	2	2	1	1	3



SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY
AMARAVATHIPUDUR, KARAİKUDI



DEPARTMENT OF MECHANICAL ENGINEERING

ME3451 – THERMAL ENGINEERING

COURSE OUTCOMES

Subject handled by: Mr.P.Saran kumar , AP/Mech.

After successful completion of the course, the students should be able to

CO No.	Course Outcomes
CO1	To learn the concepts and laws of thermodynamics to predict the operation of thermodynamic cycles and performance of Internal Combustion(IC) engines and Gas Turbines.
CO2	To analyzing the performance of steam nozzle, calculate critical pressure ratio
CO3	To Evaluating the performance of steam turbines through velocity triangles, understand the need for governing and compounding of turbines
CO4	To analyzing the working of IC engines and various auxiliary systems present in IC engines
CO5	To evaluating the various performance parameters of IC engines

MAPPING OF COURSE OUTCOMES WITH PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOME

(Low (1); Medium (2); High (3))

COURSE OUTCOME / PROGRAMME OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1								1
CO2	3	2	2	1								1
CO3	3	2	2	1								1
CO4	3	2	1	1								1
CO5	3	2	1	1								1





SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY
AMARA VATHIPUDUR, KARAİKUDI

DEPARTMENT OF MECHANICAL ENGINEERING

ME3592 – METROLOGY AND MEASUREMENTS

COURSE OUTCOMES

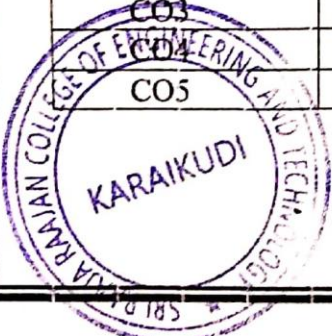
Subject handled by: Mr.S.Prem, AP/Mech.

After successful completion of the course, the students should be able to

CO No.	Course Outcomes
CO1	Describe the concepts of measurements to apply in various metrological instruments
CO2	Outline the principles of linear and angular measurement tools used for industrial applications
CO3	To study the tolerance analysis in manufacturing. Explain the procedure for conducting computer aided inspection.
CO4	To develop the fundamentals of GD & T and surface metrology. Demonstrate the techniques of form measurement used for industrial components
CO5	Discuss various measuring techniques of mechanical properties in industrial applications. To provide the knowledge of the advanced measurements for quality control in manufacturing industries.

MAPPING OF COURSE OUTCOMES WITH PROGRAM OUTCOMES :

COURSE OUTCOME / PROGRAMME OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2					1			1
CO2	3	2	2	2					1			1
CO3	3	2	2	2					1			1
CO4	3	2	2	2					1			1
CO5	3	2	2	2					1			1





SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY
AMARAVATHIPUDUR, KARAIKUDI

DEPARTMENT OF MECHANICAL ENGINEERING

CE3491 -- STRENGTH OF MATERIALS

COURSE OUTCOMES

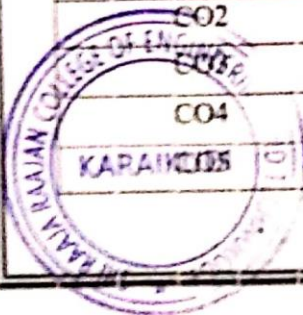
Subject handled by: Mr.G.Ayyavo, AP/Mech

After successful completion of the course, the students should be able to

CO No.	Course Outcomes
CO1	Understand the concepts of stress and strain in simple and compound bars, the importance of principal stresses and principal planes
CO2	Understand the load transferring mechanism in beams and stress distribution due to shearing force and bending moment
CO3	Apply basic equation of simple torsion in designing of shafts and helical spring due to torsion.
CO4	Calculate the slope and deflection in beams using different methods
CO5	Analyze and design thin and thick shells for the applied internal and external pressures.

MAPPING OF COURSE OUTCOMES WITH PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOME (Low (1); Medium (2); High (3))

COURSE OUTCOME / PROGRAMME OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	2	3	1	3	2	3	1	3
CO2	3	3	3	3	2	3	1	3	2	3	1	3
CO3	3	3	3	3	2	3	1	3	2	3	1	3
CO4	3	3	3	3	2	3	1	3	2	3	1	3
CO5	3	3	3	3	2	3	1	3	2	3	1	3





SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY
AMARAVATHIPUDUR, KARAUKUDI

DEPARTMENT OF MECHANICAL ENGINEERING

ME 3392 -- ENGINEERING MATERIALS METALLURGY

COURSE OUTCOMES

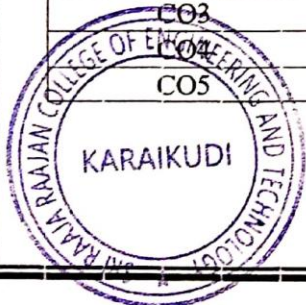
Subject handled by: Mr.P.Pradeep Castro, AP/Mech.

After successful completion of the course, the students should be able to

CO No.	Course Outcomes
CO1	Explain alloys and phase diagram, Iron-Iron carbide diagram and steel classification.
CO2	Explain isothermal transformation, continuous cooling diagrams and different heat treatment processes
CO3	Clarify the effect of alloying elements on ferrous and non-ferrous metals
CO4	Summarize the properties and applications of non-metallic materials and different polymers.
CO5	Explain the testing of mechanical properties. To learn the various testing procedures and failure mechanism in engineering field.

MAPPING OF COURSE OUTCOMES WITH PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOME (Low (1); Medium (2); High (3))

COURSE OUTCOME / PROGRAMME OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	3	2								2
CO2	3	1	3	1				1				2
CO3	3	1	3									2
CO4	3	1	3				2					2
CO5	3	1	3	2	2							2





SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY
AMARAVATHIPUDUR, KARAJKUDI

DEPARTMENT OF MECHANICAL ENGINEERING

ME3491 – THEORY OF MACHINES

COURSE OUTCOMES

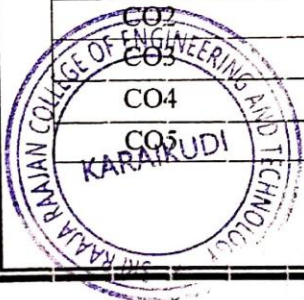
Subject handled by: Dr.K.Senthamarai , Prof./Mech.

After successful completion of the course, the students should be able to

CO No.	Course Outcomes
CO1	Discuss the basics of mechanism. Calculate velocity and acceleration in simple mechanisms. Develop CAM profiles
CO2	Solve problems on gears and gear trains
CO3	Examine friction in machine elements
CO4	To Analyzing the force-motion relationship in components subjected to external forces and analyzing of standard mechanisms
CO5	To Analyzing the undesirable effects of unbalances resulting from prescribed motions in mechanism and the effect of dynamics of undesirable vibrations

MAPPING OF COURSE OUTCOMES WITH PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOME(Low (1); Medium (2); High (3))

COURSE OUTCOME / PROGRAMME OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2		2			1				1
CO2	3	2	2		2			1				1
CO3	3	2	2		2			1				1
CO4	3	2	2		2			1				1
CO5	3	2	2		2			1				1





SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY
AMARAVATHIPUDUR, KARAİKUDI

DEPARTMENT OF MECHANICAL ENGINEERING

ME3393 – MANUFACTURING PROCESSES

COURSE OUTCOMES

Subject handled by: Mr. M. Veeran , AP/Mech.

After successful completion of the course, the students should be able to

CO No.	Course Outcomes
CO1	Explain different metal casting processes, associated defects, merits and demerits To illustrate the working principles of various metal casting processes
CO2	Compare different metal joining processes.
CO3	Summarize various hot working and cold working methods of metals.
CO4	Explain various sheet metal making processes.
CO5	Distinguish various methods of manufacturing plastic components.

MAPPING OF COURSE OUTCOMES WITH PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOME(Low (1); Medium (2); High (3))

COURSE OUTCOME / PROGRAMME OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3		2			2	3		1	-	-	1
CO2	3		2			2	3		1	-	-	1
CO3	3		2			2	3		1	-	-	1
CO4	3		2			2	3		1	-	-	1
CO5	3		2		2	2	3		1	-	-	1





SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY
AMARAVATHIPUDUR, KARAIKUDI

DEPARTMENT OF MECHANICAL ENGINEERING

CE3391 – FLUID MECHANICS AND MACHINERY
COURSE OUTCOMES

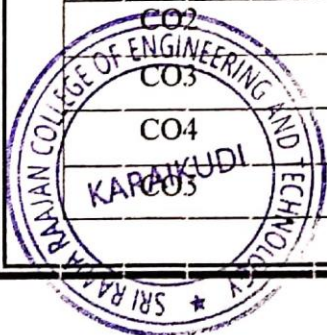
Subject handled by: Mr.M.Prem , AP/Mech.

After successful completion of the course, the students should be able to

CO No.	Course Outcomes
CO1	To introduce the students about properties of the fluids, behaviour of fluids under static conditions.
CO2	To impart basic knowledge of the dynamics of fluids and boundary layer concept.
CO3	To expose to the applications of the conservation laws to a) flow measurements b) flow through pipes (both laminar and turbulent) and c) forces on pipe bends
CO4	To exposure to the significance of boundary layer theory and its thicknesses.
CO5	To expose the students to basic principles of working of hydraulic machineries and to design Pelton wheel, Francis and Kaplan turbine, centrifugal and reciprocating pumps

MAPPING OF COURSE OUTCOMES WITH PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOME(Low (1); Medium (2); High (3))

COURSE OUTCOME / PROGRAMME OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	CO1	3	3	2	2	1	2	2	1	2	1	1
CO2	3	3	2	2	1	2	2	1	2	1	1	2
CO3	3	3	2	2	1	2	2	1	2	1	1	2
CO4	3	3	2	2	1	2	2	1	2	1	1	2
CO5	3	3	2	2	1	2	2	1	2	1	1	2





SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY
AMARAVATHIPUDUR, KARAIKUDI

DEPARTMENT OF MECHANICAL ENGINEERING

ME3391 – ENGINEERING THERMODYNAMICS

COURSE OUTCOMES

Subject handled by: Mr.P.Saran kumar , AP/Mech.

After successful completion of the course, the students should be able to

CO No.	Course Outcomes
CO1	Apply the first law of thermodynamics for simple open and closed systems under steady and unsteady conditions.
CO2	Apply second law of thermodynamics to open and closed systems and calculate entropy and availability
CO3	Apply Rankine cycle to steam power plant and compare few cycle improvement methods
CO4	Derive simple thermodynamic relations of ideal and real gases
CO5	Calculate the properties of gas mixtures and moist air and its use in psychometric processes

MAPPING OF COURSE OUTCOMES WITH PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOME (Low (1); Medium (2); High (3))

COURSE OUTCOME / PROGRAMME OUTCOME	PROGRAMME OUTCOMES											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	1								2
CO2	3	3	3	1								2
CO3	3	3	3	1			1				1	2
CO4	3	3	3	1		1	2				1	2
CO5	3	3	3	1		1	2				1	2





SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY
AMARAVATHIPUDUR, KARAIKUDI

DEPARTMENT OF MECHANICAL ENGINEERING

GE8152 – ENGINEERING GRAPHICS

COURSE OUTCOMES

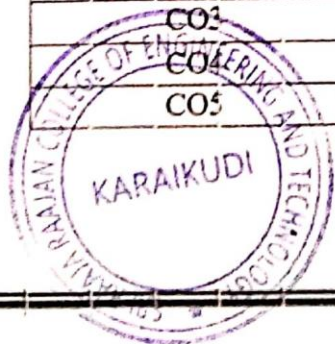
Subject handled by: Mr.D.Sivaraman , AP/Mech.

After successful completion of the course, the students should be able to

CO No.	Course Outcomes
CO1	1. Drawing engineering curves..
CO2	2. Drawing freehand sketch of simple objects
CO3	3. Drawing orthographic projection of solids and section of solids.
CO4	4. Drawing development of solids
CO5	5. Drawing isometric and perspective projections of simple solids.

MAPPING OF COURSE OUTCOMES WITH PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOME (Low (1); Medium (2); High (3))

COURSE OUTCOME / PROGRAMME OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2		2							
CO2	3	1	2		2							
CO3	3	1	2		2							
CO4	3	1	2		2							
CO5	3	1	2		2							





SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY
AMARAVATHIPUDUR, KARAIKUDI

DEPARTMENT OF MECHANICAL ENGINEERING
ME3351 -- ENGINEERING MECHANICS
COURSE OUTCOMES

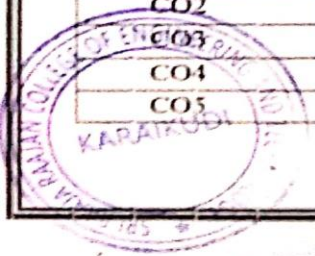
Subject handled by: Mr.G.Ayyavu , AP/Mech.

After successful completion of the course, the students should be able to

CO No.	Course Outcomes
CO1	To Learn the use scalar and vector analytical techniques for analysing forces in statically determinate structures
CO2	analyse the rigid body in equilibrium
CO3	evaluate the properties of surfaces and solids
CO4	calculate dynamic forces exerted in rigid body
CO5	To provide exposure to the students with hands on experience on various basic engineering practices in Civil, Mechanical, Electrical and Electronics Engineering

MAPPING OF COURSE OUTCOMES WITH PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOME(Low (1); Medium (2); High (3))

COURSE OUTCOME / PROGRAMME OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	1	2							2
CO2	3	2	2	1	2							2
CO3	3	2	2	1	2							2
CO4	3	2	2	1	2							2
CO5	3	2	2	1	2							2



PRINCIPAL
Sri Raaja Raajan College of Engg. & Tech
Amaravathipudur, Karaikudi - 630 301
Sivagangar Dist. Tamil Nadu