

# **SRM TRP ENGINEERING COLLEGE**

Approved by AICTE, Affiliated to Anna University

SRM Nagar, Irungalur, Tiruchirappalli – 621 105, Tamil Nadu, India



## **DEPARTMENT OF MECHANICAL ENGINEERING**

## **MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOME AND PROGRAM SPECIFIC OUTCOME**

**R-2017**

## **Department of Mechanical Engineering**

### **Vision of the Institution**

To carve the youth as dynamic, competent, valued, and knowledgeable Technocrats, who shall lead the nation to a better future.

### **Mission of the Institution**

- M1: To inculcate the academic excellence in engineering education to create talented professionals
- M2: To promote research in basic sciences and applied engineering among faculty and students to fulfill the societal expectation
- M3: To Enhance the Holistic development of the students through meaningful interaction with industry and academia
- M4: To foster the students on par with sustainable development goals thereby contributing to the process of nation building
- M5: To nurture and retain conducive lifelong learning environment towards professional excellence

### **Vision of the Department**

To produce globally competent, innovative and entrepreneurial mechanical engineers for ever changing industrial and societal needs through academic and research excellence.

### **Mission of the Department**

- M1: To provide excellent academic environment with quality technical expertise to the students in the field of mechanical engineering.
- M2: To inculcate the students with professional and ethical behavior to serve the society with leadership quality.
- M3: To encourage and assist the students to gain practical experience in industries to supplement the theoretical knowledge
- M4: To provide state of the art research facilities and a collaborative environment for stimulating the students and faculty to create, analyze, apply and disseminate knowledge.
- M5: To make the students as an academic expert, scientist and entrepreneurs through continuous learning with multidisciplinary knowledge.

## Program Educational Objectives (PEOs)

**The graduate of Mechanical engineering will have**

- PEO1: Use interdisciplinary knowledge in mechanical engineering to solve complex challenges with a multidisciplinary approach.
- PEO2: Excel in applying core engineering concepts, solving intricate mechanical problems with innovative and practical solutions.
- PEO3: Have a broad perspective, integrating knowledge from diverse engineering disciplines to address complex challenges holistically.
- PEO4: Exhibit high ethical standards, professionalism, and effective communication skills, contributing to responsible and collaborative engagement in engineering projects.
- PEO5: Embrace continuous learning, adapting to evolving technologies and industry trends to sustain their relevance and effectiveness in their professional journey

## Program Specific Outcome (PSOs)

**The graduates of Bachelor of Engineering in Mechanical Engineering Programme will be able to:**

- PSO 1. Posses the skills in developing industrial products by using domains of the mechanical engineering programme.
- PSO 2. Apply modern tools to solve complex mechanical engineering problems by employing ethical principles and professional engineering practices.

## Program Outcomes (POs)

**The students after successful completion of the program will acquire:**

- PO1: **Engineering knowledge:** Apply the basic knowledge of science, mathematics and engineering fundamentals in the field of Mechanical Engineering to solve complex engineering problems.
- PO2: **Problem analysis:** Ability to use basic principles of mathematics, natural sciences, and engineering sciences to Identify, formulate, review research literature and analyze Mechanical engineering problems.
- PO3: **Design/development of solutions:** Ability to design solutions for complex mechanical engineering problems and basic design system to meet the desired needs within realistic constraints such as manufacturability, durability, reliability, sustainability and economy with appropriate consideration for the public health, safety, cultural, societal, and environmental considerations.

- PO4: **Conduct investigations of complex problems:** Ability to execute the experimental activities using research-based knowledge and methods including analyze, interpret the data and results with valid conclusion.
- PO5: **Modern tool usage:** Ability to use state of the art of techniques, skills and modern engineering tools necessary for engineering practice to satisfy the needs of the society with an understanding of the limitations.
- PO6: **The Engineer and Society:** Ability to apply reasoning informed by the contextual knowledge to assess the impact of Mechanical engineering solutions in legal, health, cultural, safety and societal context and the consequent responsibilities relevant to the professional engineering practice.
- PO7: **Environment and sustainability:** Ability to understand the professional responsibility and accountability to demonstrate the need for sustainable development globally in Mechanical domain with consideration of environmental effect.
- PO8: **Ethics:** Ability to understand and apply ethical principles and commitment to address the professional ethical responsibilities of an engineer.
- PO9: **Individual and team work:** Ability to function efficiently as an individual or as a group member or leader in a team in multidisciplinary environment.
- PO10: **Communication:** Ability to communicate, comprehend and present effectively with engineering community and the society at large on complex engineering activities by receiving clear instructions for preparing effective reports, design documentation and presentations.
- PO11: **Project management and finance:** Ability to acquire and demonstrate the knowledge of contemporary issues related to finance and managerial skills in one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12: **Life-long learning:** Ability to recognize and adapt to the emerging field of application in engineering and technology by developing self-confidence for lifelong learning process.

## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C101 / HS8151 / Communicative English
<b>Semester</b>	I
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>HS8151.1</b>	Participate effectively in conversation by asking/sharing questions with the support of language development.
<b>HS8151.2</b>	Read and comprehend the passages for improving parts of speech and language development.
<b>HS8151.3</b>	Read and write the sentence coherently and describe the product effectively.
<b>HS8151.4</b>	Read and write different genres of texts for improving language skills such as email etiquette and personal letters
<b>HS8151.5</b>	Produce well organized essays, and dialogue writing in English effectively .
<b>HS8151.6</b>	Mold their knowledge in language skills and grammar for the work place.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
HS8151.1	0	0	0	0	1	0	0	0	0	3	0	1
HS8151.2	0	0	0	0	1	0	0	0	0	3	0	1
HS8151.3	0	0	0	0	1	0	0	0	0	3	0	1
HS8151.4	0	0	0	0	1	0	0	0	0	3	0	1
HS8151.5	0	0	0	0	1	0	0	0	0	3	0	1
HS8151.6	0	0	0	0	1	0	0	0	0	3	0	1
<b>HS8151</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3.00</b>	<b>0.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
HS8151.1	0	1
HS8151.2	0	1
HS8151.3	0	1
HS8151.4	0	1
HS8151.5	0	1
HS8151.6	0	1
<b>HS8151</b>	<b>0.00</b>	<b>1.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C102 / MA8151 / Engineering Mathematics - I
<b>Semester</b>	I
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
MA8151.1	Comprehend limit , continuity, derivatives, Maxima, Minima of functions of one variable
MA8151.2	Apply differentiation techniques to solve Maxima, Minima of functions of two variables in engineering problems
MA8151.3	Evaluate integrals using techniques of integration for various functions
MA8151.4	Evaluate multiple integrals in cartesian and polar coordinates
MA8151.5	Apply various techniques in solving differential equations
MA8151.6	Possess knowledge in the concept of differentiation and techniques of integration in solving engineering problems.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MA8151.1	3	3	3	3	3	0	0	0	3	0	1	1
MA8151.2	3	3	3	3	3	0	0	0	3	0	1	1
MA8151.3	3	3	3	3	3	0	0	0	3	0	1	1
MA8151.4	3	3	3	3	3	0	0	0	3	0	1	1
MA8151.5	3	3	3	3	3	0	0	0	3	0	1	1
MA8151.6	3	3	3	3	3	0	0	0	3	0	1	1
<b>MA8151</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3.00</b>	<b>0.00</b>	<b>1.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
MA8151.1	3	3
MA8151.2	3	3
MA8151.3	3	3
MA8151.4	3	3
MA8151.5	3	3
MA8151.6	3	3
<b>MA8151</b>	<b>3.00</b>	<b>3.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C103 / PH8151 / Engineering Physics
<b>Semester</b>	I
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>PH8151.1</b>	Attain the knowledge about the concepts involved in the elastic properties of solids.
<b>PH8151.2</b>	Ideate the knowledge on generation of waves, application of photonics and fiber optics.
<b>PH8151.3</b>	Implement the skills of thermal properties and its applications in expansion joints and heat exchangers.
<b>PH8151.4</b>	Acquire knowledge on advanced concepts of physics on quantum theory and its applications in tunneling microscopes.
<b>PH8151.5</b>	Examine various defects, structures, characters in crystals and different growth techniques involved.
<b>PH8151.6</b>	Understand the fundamental knowledge in physics and its applications relevant to various streams of Engineering and Technology

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PH8151.1	3	2	2	1	0	0	0	0	0	0	0	1
PH8151.2	3	1	1	2	2	0	0	0	0	0	0	1
PH8151.3	3	2	2	1	0	0	0	0	0	0	0	1
PH8151.4	3	0	1	0	0	0	0	0	0	0	0	1
PH8151.5	3	1	0	2	0	0	0	0	0	0	0	1
PH8151.6	3	2	2	2	2	0	0	0	0	0	0	1
<b>PH8151</b>	<b>3.00</b>	<b>1.60</b>	<b>1.60</b>	<b>1.60</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
PH8151.1	3	0
PH8151.2	3	2
PH8151.3	3	0
PH8151.4	3	0
PH8151.5	3	0
PH8151.6	3	2
<b>PH8151</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C104 / CY8151 / Engineering Chemistry
<b>Semester</b>	I
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>CY8151.1</b>	Explain the problems of using hard water in boiler and methods of water treatment.
<b>CY8151.2</b>	Gain the knowledge about the surface chemistry and catalysis.
<b>CY8151.3</b>	Understanding the making of alloys with help of the basic concepts of phase rule.
<b>CY8151.4</b>	Relative the significance of solids, liquids and gaseous fuels and calculate the calorific values of fuels and the requirements of air for complete combustion in fuels.
<b>CY8151.5</b>	Understanding the components, functions of nuclear reactor and the constructions, applications of batteries and fuel cells.
<b>CY8151.6</b>	Knowledge gained on engineering materials, fuels, energy sources and water treatment techniques will facilitate better understanding of engineering process and applications further learning.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CY8151.1	3	2	1	1	2	1	3	0	1	2	2	2
CY8151.2	3	1	2	2	1	1	1	0	0	2	2	2
CY8151.3	3	1	3	3	3	1	2	1	2	2	2	3
CY8151.4	3	2	2	3	2	1	1	0	2	2	2	1
CY8151.5	3	1	2	3	3	1	2	1	2	2	2	3
CY8151.6	3	1	2	3	3	1	2	1	2	2	2	3
<b>CY8151</b>	<b>3.00</b>	<b>1.33</b>	<b>2.00</b>	<b>2.50</b>	<b>2.33</b>	<b>1.00</b>	<b>1.83</b>	<b>1.00</b>	<b>1.80</b>	<b>2.00</b>	<b>2.00</b>	<b>2.33</b>

Course Code	PSO1	PSO2
CY8151.1	3	2
CY8151.2	3	1
CY8151.3	3	3
CY8151.4	3	2
CY8151.5	3	3
CY8151.6	3	3
<b>CY8151</b>	<b>3.00</b>	<b>2.33</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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**B.E - Department of Mechanical Engineering**

<b>Course Code / Course Name</b>	C105 / GE8151 / Problem Solving and Python Programming
<b>Semester</b>	I
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>GE8151.1</b>	Develop algorithmic solutions to simple computational problems
<b>GE8151.2</b>	Read, write, execute by hand simple Python programs and Structure simple Python programs for solving problems.
<b>GE8151.3</b>	Decompose a Python program into functions..
<b>GE8151.4</b>	Represent compound data using Python lists, tuples, and dictionaries.
<b>GE8151.5</b>	Read and write data from/to files in Python Programs.
<b>GE8151.6</b>	Structure simple Python programs for solving real world problems.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
GE8151.1	3	2	1	1	3	1	1	0	1	1	3	3
GE8151.2	3	2	2	2	3	1	1	0	1	1	3	3
GE8151.3	3	2	2	2	3	1	2	0	1	0	3	3
GE8151.4	3	2	2	2	3	1	1	1	2	0	3	3
GE8151.5	3	2	2	1	3	1	1	1	2	1	3	3
GE8151.6	3	2	3	2	3	1	2	0	2	2	3	3
<b>GE8151</b>	<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>1.67</b>	<b>3.00</b>	<b>1.00</b>	<b>1.33</b>	<b>1.00</b>	<b>1.50</b>	<b>1.25</b>	<b>3.00</b>	<b>3.00</b>

Course Code	PSO1	PSO2
GE8151.1	1	1
GE8151.2	1	1
GE8151.3	1	1
GE8151.4	1	1
GE8151.5	1	1
GE8151.6	1	1
<b>GE8151</b>	<b>1.00</b>	<b>1.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C106 / GE8152 / Engineering Graphics
<b>Semester</b>	I
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>GE8152.1</b>	Comprehend the fundamentals of curves and free hand sketching of engineering graphics
<b>GE8152.2</b>	Project orthographic projections of lines and plane surfaces.
<b>GE8152.3</b>	Draw projections of solids in different planes
<b>GE8152.4</b>	Draw true shape of sectioned solids and development of surfaces
<b>GE8152.5</b>	Visualize and to project isometric and perspective sections of simple solids.
<b>GE8152.6</b>	Apply the concept of drawing in practical applications.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
GE8152.1	3	3	3	3	2	0	0	2	0	2	0	3
GE8152.2	3	3	3	3	2	0	0	2	0	2	0	3
GE8152.3	3	3	3	3	2	0	0	2	0	2	0	3
GE8152.4	3	3	3	3	2	0	0	2	0	2	0	3
GE8152.5	3	3	3	3	2	0	0	2	0	2	0	3
GE8152.6	3	3	3	3	2	0	0	2	0	2	0	3
<b>GE8152</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>0.00</b>	<b>2.00</b>	<b>0.00</b>	<b>3.00</b>

Course Code	PSO1	PSO2
GE8152.1	3	2
GE8152.2	3	2
GE8152.3	3	2
GE8152.4	3	2
GE8152.5	3	2
GE8152.6	3	2
<b>GE8152</b>	<b>3.00</b>	<b>2.00</b>

1	Slight	2	Moderate	3	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C107 / GE8161 / Problem Solving and Python Programming Laboratory
<b>Semester</b>	I
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>GE8161.1</b>	Develop solutions to simple computational problems using Python programs
<b>GE8161.2</b>	Solve problems using conditionals and loops in Python.
<b>GE8161.3</b>	Develop Python programs by defining functions and calling them.
<b>GE8161.4</b>	Use Python lists, tuples and dictionaries for representing compound data.
<b>GE8161.5</b>	Develop Python programs using files
<b>GE8161.6</b>	Develop Python real world applications

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
GE8161.1	3	2	1	0	2	1	0	0	2	0	0	1
GE8161.2	3	2	1	0	2	1	0	0	2	0	0	1
GE8161.3	3	2	1	0	2	1	0	0	2	0	0	1
GE8161.4	3	2	1	0	2	1	0	0	2	0	0	1
GE8161.5	3	2	1	1	2	1	0	0	2	0	0	1
GE8161.6	3	2	1	0	2	1	0	0	2	0	0	1
<b>GE8161</b>	<b>3.00</b>	<b>2.00</b>	<b>1.00</b>	<b>1.00</b>	<b>2.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
GE8161.1	3	2
GE8161.2	3	2
GE8161.3	3	2
GE8161.4	3	2
GE8161.5	3	2
GE8161.6	3	2
<b>GE8161</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C108 / BS8161 / Physics and Chemistry Laboratory
<b>Semester</b>	I
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>BS8161.1</b>	Examine the characteristics of light in the visible region
<b>BS8161.2</b>	Calculate the elastic moduli of a solid
<b>BS8161.3</b>	Demonstrate the band of a semiconductor
<b>BS8161.4</b>	Estimate of ferrous ion and copper content of the given solution by potentiometer and iodometric.
<b>BS8161.5</b>	Determine of strength of given acids using various meter.
<b>BS8161.6</b>	Find the amount of sodium content in water sample using flame photometry.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BS8161.1	3	1	2	1	1	1	0	2	1	1	0	1
BS8161.2	3	2	2	1	1	1	1	2	1	1	0	1
BS8161.3	3	1	0	1	1	1	1	2	1	1	0	1
BS8161.4	3	2	1	0	1	1	1	2	1	1	0	1
BS8161.5	3	2	1	0	1	1	1	2	1	1	0	1
BS8161.6	3	2	2	1	1	1	1	2	1	1	0	1
<b>BS8161</b>	<b>3.00</b>	<b>1.60</b>	<b>1.50</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>2.00</b>	<b>1.00</b>	<b>1.00</b>	<b>0.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
BS8161.1	1	0
BS8161.2	1	0
BS8161.3	1	0
BS8161.4	1	0
BS8161.5	1	0
BS8161.6	1	0
<b>BS8161</b>	<b>1.00</b>	<b>0.00</b>

1	Slight	2	Moderate	3	Substantial
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**B.E - Department of Mechanical Engineering**

<b>Course Code / Course Name</b>	C109 / HS8251 / Technical English
<b>Semester</b>	II
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>HS8251.1</b>	Enhance the lexical terms through grammar and vocabulary for improving technical writing skill
<b>HS8251.2</b>	Observe and Interpret visual images into descriptive passage with grammar and vocabulary.
<b>HS8251.3</b>	Inculcate the speed reading task to develop vocabulary and language .
<b>HS8251.4</b>	Prepare emails, job application letter and issue based essays with the support of language skills.
<b>HS8251.5</b>	Enrich the wide range of vocabulary for preparing minutes and reports effectively.
<b>HS8251.6</b>	Sharpen their knowledge in language skills and grammar for the work place.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
HS8251.1	0	0	0	0	1	0	0	0	0	3	0	1
HS8251.2	0	0	0	0	1	0	0	0	0	3	0	1
HS8251.3	0	0	0	0	1	0	0	0	0	3	0	1
HS8251.4	0	0	0	0	1	0	0	0	0	3	0	1
HS8251.5	0	0	0	0	1	0	0	0	0	3	0	1
HS8251.6	0	0	0	0	1	0	0	0	0	3	0	1
<b>HS8251</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3.00</b>	<b>0.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
HS8251.1	0	1
HS8251.2	0	1
HS8251.3	0	1
HS8251.4	0	1
HS8251.5	0	1
HS8251.6	0	1
<b>HS8251</b>	<b>0.00</b>	<b>1.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C110 / MA8251 / Engineering Mathematics - II
<b>Semester</b>	II
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
MA8251.1	Apply Eigen vectors to diagonalize a matrix
MA8251.2	Evaluate the line, surface & volume integrals using Gauss, Green's & Stoke's theorems
MA8251.3	Acquire knowledge in Analytic functions and conformal mapping.
MA8251.4	Comprehend the concept of complex integration, Taylor's series, Laurent's Series expansion.
MA8251.5	Gain knowledge in Laplace transform techniques and its applications to solve second order linear ODE.
MA8251.6	Develop the fundamentals and basic concepts in matrices, vector calculus, Laplace transforms and complex functions and solve problems related to engineering applications.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MA8251.1	3	3	3	0	2	0	0	0	1	1	1	1
MA8251.2	3	3	3	0	2	0	0	0	1	1	1	1
MA8251.3	3	3	3	0	2	0	0	0	1	1	1	1
MA8251.4	3	3	3	0	2	0	0	0	1	1	1	1
MA8251.5	3	3	3	0	2	0	0	0	1	1	1	1
MA8251.6	3	3	3	0	2	0	0	0	1	1	1	1
<b>MA8251</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>0.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
MA8251.1	3	2
MA8251.2	3	2
MA8251.3	3	2
MA8251.4	3	2
MA8251.5	3	2
MA8251.6	3	2
<b>MA8251</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C111 / PH8251 / Materials Science
<b>Semester</b>	II
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>PH8251.1</b>	Draw the phase equilibrium diagram for solid solution.
<b>PH8251.2</b>	Apply the knowledge ferrous alloy in the field of engineering.
<b>PH8251.3</b>	Examine the mechanical properties of materials
<b>PH8251.4</b>	Classify the different behaviors of magnetic, dielectric and super conducting materials with their applications
<b>PH8251.5</b>	Demonstrate the preparation, properties and applications of new engineering materials.
<b>PH8251.6</b>	Use the knowledge of phase diagram and various types of materials in the field of engineering and technology.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PH8251.1	3	0	0	0	0	0	0	0	0	0	0	1
PH8251.2	3	1	0	1	0	0	0	0	0	0	0	1
PH8251.3	3	0	0	0	0	0	0	0	0	0	0	1
PH8251.4	3	1	0	1	0	0	0	0	0	0	0	1
PH8251.5	3	0	0	0	0	0	0	0	0	0	0	1
PH8251.6	3	1	0	1	0	0	0	0	0	0	0	1
<b>PH8251</b>	<b>3.00</b>	<b>1.00</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
PH8251.1	3	0
PH8251.2	3	0
PH8251.3	3	0
PH8251.4	3	0
PH8251.5	3	0
PH8251.6	3	0
<b>PH8251</b>	<b>3.00</b>	<b>0.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C112 / BE8253 / Basic Electrical, Electronics and Instrumentation Engineering
<b>Semester</b>	II
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>BE8253.1</b>	Learn the fundamentals laws and theorems of electrical circuits.
<b>BE8253.2</b>	Study the construction and working principle and performance of electrical machines.
<b>BE8253.3</b>	Study the different energy sources, protective devices and their field of applications
<b>BE8253.4</b>	Comprehend the fundamentals and basic principle of electronic circuits.
<b>BE8253.5</b>	Comprehend the principle and operation of measuring instruments and transducers.
<b>BE8253.6</b>	Acquire knowledge of fundamentals laws and working principle of various electrical and electronics devices.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BE8253.1	3	2	0	1	0	3	0	0	0	3	0	3
BE8253.2	3	2	0	1	0	3	0	0	0	3	0	3
BE8253.3	3	2	0	1	0	3	0	0	0	3	0	3
BE8253.4	3	2	0	1	0	3	0	0	0	3	0	3
BE8253.5	3	2	0	1	0	3	0	0	0	3	0	3
BE8253.6	3	2	0	1	0	3	0	0	0	3	0	3
<b>BE8253</b>	<b>3.00</b>	<b>2.00</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>3.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3.00</b>	<b>0.00</b>	<b>3.00</b>

Course Code	PSO1	PSO2
BE8253.1	3	0
BE8253.2	3	0
BE8253.3	3	0
BE8253.4	3	0
BE8253.5	3	0
BE8253.6	3	0
<b>BE8253</b>	<b>3.00</b>	<b>0.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C113 / GE8291 / Environmental Science and Engineering
<b>Semester</b>	II
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>GE8291.1</b>	Enumerate the importance of public awareness on environment and nature of biodiversity.
<b>GE8291.2</b>	Explain the causes, effect and control measures of different pollution and disasters.
<b>GE8291.3</b>	Comprehend the human development that leads to environmental disasters, the values of natural resources and their conservation.
<b>GE8291.4</b>	Examine the knowledge about the social issues related to environmental problems.
<b>GE8291.5</b>	Evaluate the environmental effects due to population explosion.
<b>GE8291.6</b>	Find and implement the scientific, technological, economical and political solutions to environmental problems.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
GE8291.1	1	1	0	0	0	2	2	1	0	1	0	1
GE8291.2	1	1	0	0	0	2	2	1	0	1	0	1
GE8291.3	1	1	0	0	0	2	2	1	0	1	0	1
GE8291.4	1	1	0	0	0	2	2	2	0	1	0	1
GE8291.5	1	1	0	0	0	2	2	1	0	1	0	1
GE8291.6	1	1	0	0	0	2	2	1	0	1	0	1
<b>GE8291</b>	<b>1.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>	<b>1.17</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
GE8291.1	1	0
GE8291.2	1	0
GE8291.3	1	0
GE8291.4	1	0
GE8291.5	1	0
GE8291.6	1	0
<b>GE8291</b>	<b>1.00</b>	<b>0.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C114 / GE8292 / Engineering Mechanics
<b>Semester</b>	II
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>GE8292.1</b>	Illustrate the vector and scalar representation of forces and moments
<b>GE8292.2</b>	Investigate the rigid body in equilibrium
<b>GE8292.3</b>	Evaluate the properties of surfaces and solids
<b>GE8292.4</b>	Calculate the dynamic forces exerted in rigid body
<b>GE8292.5</b>	Determine the friction and the effects by the laws of friction
<b>GE8292.6</b>	Apply the concepts of mechanics and work in force analysis

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
GE8292.1	3	3	3	3	2	2	0	1	0	1	0	2
GE8292.2	3	3	3	3	2	2	0	1	0	1	0	2
GE8292.3	3	3	3	3	2	2	0	1	0	1	0	2
GE8292.4	3	3	3	3	2	2	0	1	0	1	0	2
GE8292.5	3	3	3	3	2	2	0	1	0	1	0	2
GE8292.6	3	3	3	3	2	2	0	1	0	1	0	2
<b>GE8292</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
GE8292.1	3	2
GE8292.2	3	2
GE8292.3	3	2
GE8292.4	3	2
GE8292.5	3	2
GE8292.6	3	2
<b>GE8292</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C115 / GE8261 / Engineering Practices Laboratory
<b>Semester</b>	II
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>GE8261.1</b>	Fabricate carpentry components and pipe connections for residential and industrial buildings
<b>GE8261.2</b>	Utilize welding equipments to join the structures and carryout the various basic machining operation in lathe and drilling machine
<b>GE8261.3</b>	Fabricate various models using sheet metal and demonstrate the assembly of centrifugal pump, air conditioner, operation of smithy, foundry and fittings
<b>GE8261.4</b>	Practice various home electrical works and appliances
<b>GE8261.5</b>	Apply electronic principles to develop circuits for various applications.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
GE8261.1	3	3	2	1	0	0	0	2	2	1	0	2
GE8261.2	3	3	2	1	0	0	0	2	2	1	0	2
GE8261.3	3	3	2	1	0	0	0	2	2	1	0	2
GE8261.4	3	3	2	1	0	0	0	2	2	1	0	2
GE8261.5	3	3	2	1	0	0	0	2	2	1	0	2
<b>GE8261</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>	<b>1.00</b>	<b>0.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
GE8261.1	3	0
GE8261.2	3	0
GE8261.3	3	0
GE8261.4	3	0
GE8261.5	3	0
<b>GE8261</b>	<b>3.00</b>	<b>0.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C116 / BE8261 / Basic Electrical, Electronics and
<b>Semester</b>	II
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>BE8261.1</b>	Illustrate the performance, Characteristics and Load test on DC Shunt motor and DC Generator
<b>BE8261.2</b>	Analyze the measurement of three phase power and explain the performance of induction motor & Transformer
<b>BE8261.3</b>	Demonstrate the various electric circuits laws and theorems
<b>BE8261.4</b>	Explain the various characteristics of different transducers
<b>BE8261.5</b>	Apply the simple circuits based on diodes and transistors
<b>BE8261.6</b>	Explain the study of CRO and measurement of AC Signals

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BE8261.1	3	2	2	0	0	3	1	2	2	1	0	2
BE8261.2	3	2	2	0	0	1	1	2	2	1	1	2
BE8261.3	2	2	2	0	0	0	0	1	2	1	1	2
BE8261.4	2	2	2	0	0	1	1	1	2	1	1	2
BE8261.5	2	2	2	0	0	1	1	1	2	1	1	2
BE8261.6	3	2	2	0	0	3	1	2	2	1	1	2
<b>BE8261</b>	<b>2.50</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.80</b>	<b>1.00</b>	<b>1.50</b>	<b>2.00</b>	<b>1.00</b>	<b>1.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
BE8261.1	3	0
BE8261.2	3	0
BE8261.3	2	0
BE8261.4	2	0
BE8261.5	2	0
BE8261.6	3	0
<b>BE8261</b>	<b>2.50</b>	<b>0.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C201 / MA8353 / Transforms and Partial Differential
<b>Semester</b>	III
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
MA8353.1	Solve the given partial differential equation
MA8353.2	Apply Fourier series analysis in engineering application
MA8353.3	Apply Fourier series techniques to solve one dimensional wave, one & two dimensional heat equations
MA8353.4	Gain knowledge in Fourier transform techniques to solve the problems.
MA8353.5	Relate Z-transform techniques to solve the difference equations.
MA8353.6	Formulate & solve some of the physical problems of engineering using Transforms and Partial Differential Equations

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MA8353.1	3	3	2	2	1	0	2	0	2	1	2	1
MA8353.2	3	3	2	2	1	0	1	0	1	0	3	1
MA8353.3	3	3	2	2	0	0	0	0	1	0	3	1
MA8353.4	3	2	1	2	1	0	1	1	0	0	3	1
MA8353.5	3	3	2	2	1	0	1	0	2	1	3	1
MA8353.6	3	3	2	2	1	0	1	0	1	0	2	1
<b>MA8353</b>	<b>3.00</b>	<b>2.83</b>	<b>1.83</b>	<b>2.00</b>	<b>1.00</b>	<b>0.00</b>	<b>1.20</b>	<b>1.00</b>	<b>1.40</b>	<b>1.00</b>	<b>2.67</b>	<b>1.00</b>

Course Code	PSO1	PSO2
MA8353.1	3	1
MA8353.2	3	1
MA8353.3	3	0
MA8353.4	3	1
MA8353.5	3	1
MA8353.6	3	1
<b>MA8353</b>	<b>3.00</b>	<b>1.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C202 / ME8391 / Engineering Thermodynamics
<b>Semester</b>	III
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
ME8391.1	Implement the first law of thermodynamics for open and closed systems
ME8391.2	Utilize second law of thermodynamics for open and closed systems
ME8391.3	Analyze the properties of pure substance and elucidate the working of steam cycles
ME8391.4	Derive simple thermodynamic relations of ideal and real gases.
ME8391.5	Determine the properties of gas mixtures and its use in psychometric processes.
ME8391.6	Apply the thermodynamic principles in mechanical engineering field

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8391.1	3	3	1	1	1	0	0	0	0	2	1	2
ME8391.2	3	3	2	1	3	0	2	0	0	3	1	2
ME8391.3	3	3	1	2	0	0	1	0	0	3	1	1
ME8391.4	3	3	1	2	2	0	0	0	0	2	1	2
ME8391.5	3	3	1	2	0	0	2	0	0	3	1	2
ME8391.6	3	3	2	1	3	0	2	0	0	3	1	2
<b>ME8391</b>	<b>3.00</b>	<b>3.00</b>	<b>1.33</b>	<b>1.50</b>	<b>2.25</b>	<b>0.00</b>	<b>1.75</b>	<b>0.00</b>	<b>0.00</b>	<b>2.67</b>	<b>1.00</b>	<b>1.83</b>

Course Code	PSO1	PSO2
ME8391.1	3	1
ME8391.2	3	3
ME8391.3	3	0
ME8391.4	3	2
ME8391.5	3	0
ME8391.6	3	3
<b>ME8391</b>	<b>3.00</b>	<b>2.25</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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**B.E - Department of Mechanical Engineering**

<b>Course Code / Course Name</b>	C203 / CE8394 / Fluid Mechanics and Machinery
<b>Semester</b>	III
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>CE8394.1</b>	Acquire the fundamental knowledge about fluid characteristics & laws governing their flow
<b>CE8394.2</b>	Calculate major and minor losses associated with pipe flow in piping networks.
<b>CE8394.3</b>	Create models for different engineering problems & predict the characteristic of real time problem
<b>CE8394.4</b>	Analyze the performance of pumps
<b>CE8394.5</b>	Analyze the operation & compare the performance of hydraulic machines
<b>CE8394.6</b>	Select & design suitable hydraulic machines considering economic factors

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE8394.1	3	3	2	2	1	1	1	0	0	2	2	3
CE8394.2	3	3	3	3	1	1	1	0	0	2	2	3
CE8394.3	3	3	3	3	2	1	2	1	0	2	2	3
CE8394.4	3	3	3	3	1	1	3	0	0	3	2	3
CE8394.5	3	3	3	3	1	1	3	0	0	3	2	3
CE8394.6	3	3	3	3	2	1	2	1	0	2	2	3
<b>CE8394</b>	<b>3.00</b>	<b>3.00</b>	<b>2.83</b>	<b>2.83</b>	<b>1.33</b>	<b>1.00</b>	<b>2.00</b>	<b>1.00</b>	<b>0.00</b>	<b>2.33</b>	<b>2.00</b>	<b>3.00</b>

Course Code	PSO1	PSO2
CE8394.1	3	1
CE8394.2	3	1
CE8394.3	3	2
CE8394.4	3	1
CE8394.5	3	1
CE8394.6	3	2
<b>CE8394</b>	<b>3.00</b>	<b>1.33</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C204 / ME8351 / Manufacturing Technology - I
<b>Semester</b>	III
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
ME8351.1	Relate different metal casting process and its defects
ME8351.2	Compare various metal joining processes and analyze the weld defects
ME8351.3	Compare and contrast different types of metal forming process
ME8351.4	Describe the working principle of various sheet metal forming processes and its applications
ME8351.5	Distinguish various methods of manufacturing plastic components and its applications
ME8351.6	Explicate advanced techniques in forging, casting and welding processes

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8351.1	3	3	2	1	1	1	1	1	0	0	0	2
ME8351.2	3	3	0	1	1	1	1	1	0	0	0	2
ME8351.3	3	3	0	1	1	1	1	1	0	0	0	2
ME8351.4	3	3	2	1	1	1	1	1	0	0	0	2
ME8351.5	3	3	0	1	1	1	1	1	0	0	0	2
ME8351.6	3	3	2	1	1	1	1	1	0	0	0	2
<b>ME8351</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8351.1	3	1
ME8351.2	3	1
ME8351.3	3	1
ME8351.4	3	1
ME8351.5	3	1
ME8351.6	3	1
<b>ME8351</b>	<b>3.00</b>	<b>1.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C205 / EE8353 / Electrical Drives and Controls
<b>Semester</b>	III
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>EE8353.1</b>	Illustrate the heating and cooling curves with factors influencing choice of Electrical Drives
<b>EE8353.2</b>	Study the mechanical characteristics and braking for various types of electrical drives
<b>EE8353.3</b>	Categorize different types of starters in D.C motors and induction motors
<b>EE8353.4</b>	Understand different speed control techniques and its application in the field of DC drives
<b>EE8353.5</b>	Comprehend different solid state speed control techniques and its application in the field of AC drives
<b>EE8353.6</b>	Interpret the different types of Electrical Machines and their performances

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
EE8353.1	2	2	1	1	0	1	1	1	0	1	1	1
EE8353.2	3	3	2	1	1	1	1	1	1	1	2	3
EE8353.3	2	3	2	1	2	1	1	1	1	1	2	3
EE8353.4	3	3	2	2	2	1	1	1	1	1	2	3
EE8353.5	3	3	2	3	2	1	2	1	1	1	2	3
EE8353.6	3	3	2	2	2	1	1	1	1	1	2	3
<b>EE8353</b>	<b>2.67</b>	<b>2.83</b>	<b>1.83</b>	<b>1.67</b>	<b>1.80</b>	<b>1.00</b>	<b>1.17</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.83</b>	<b>2.67</b>

Course Code	PSO1	PSO2
EE8353.1	2	0
EE8353.2	3	1
EE8353.3	2	2
EE8353.4	3	2
EE8353.5	3	2
EE8353.6	3	2
<b>EE8353</b>	<b>2.67</b>	<b>1.80</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C206 / ME8361 / Manufacturing Technology Laboratory - I
<b>Semester</b>	III
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8361.1</b>	Perform basic machining operations as per the given size using lathe machine tools
<b>ME8361.2</b>	Utilize shaping or milling machine tool to make square and hexagonal head
<b>ME8361.3</b>	Make various types of metal joints using arc and gas welding
<b>ME8361.4</b>	Produce simple tray and funnel using sheet metal forming tool
<b>ME8361.5</b>	Apply different moulding tool and patterns to prepare sand moulds
<b>ME8361.6</b>	Practice various operations in lathe, shaper machines, drilling and milling

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8361.1	2	1	0	3	0	1	1	2	2	2	0	2
ME8361.2	2	1	0	3	0	1	1	2	2	2	0	2
ME8361.3	2	1	0	3	0	1	1	2	2	2	0	2
ME8361.4	2	1	0	3	0	1	1	2	2	2	0	2
ME8361.5	2	1	0	3	0	1	1	2	2	2	0	2
ME8361.6	2	1	0	3	0	1	1	2	2	2	0	2
<b>ME8361</b>	<b>2.00</b>	<b>1.00</b>	<b>0.00</b>	<b>3.00</b>	<b>0.00</b>	<b>1.00</b>	<b>1.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8361.1	2	0
ME8361.2	2	0
ME8361.3	2	0
ME8361.4	2	0
ME8361.5	2	0
ME8361.6	2	0
<b>ME8361</b>	<b>2.00</b>	<b>0.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C207 / ME8381 / Computer Aided Machine Drawing
<b>Semester</b>	III
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8381.1</b>	Follow the drawing standards, fits and tolerances.
<b>ME8381.2</b>	Recreate part drawing and sectional views as per standards
<b>ME8381.3</b>	Create assembly drawings as per the standards
<b>ME8381.4</b>	Utilize standard software tools to create part, assemblies for machine components.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8381.1	3	2	2	2	2	0	2	2	2	2	0	2
ME8381.2	3	2	2	2	2	0	2	2	2	2	0	2
ME8381.3	3	2	2	2	2	0	2	2	2	2	0	2
ME8381.4	3	2	2	2	2	0	2	2	2	2	0	2
<b>ME8381</b>	<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8381.1	3	2
ME8381.2	3	2
ME8381.3	3	2
ME8381.4	3	2
<b>ME8381</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course</b>	C208 / EE8361 / Electrical Engineering Laboratory
<b>Semester</b>	III
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>EE8361.1</b>	Gain engineering knowledge in the area of AC Machines
<b>EE8361.2</b>	Gain engineering knowledge in the area of DC Machines
<b>EE8361.3</b>	Analyze and Investigate the circuit laws and implementing in bread boards
<b>EE8361.4</b>	Analyze and Investigate the application of electronic circuits
<b>EE8361.5</b>	Gain engineering knowledge in the area of machines and complex circuit laws

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
EE8361.1	3	3	1	3	3	0	2	0	2	2	2	3
EE8361.2	3	3	1	3	3	0	2	0	2	2	2	3
EE8361.3	3	3	1	3	3	0	2	0	2	2	2	3
EE8361.4	3	3	1	3	3	0	2	0	2	2	2	3
EE8361.5	3	3	1	3	3	0	2	0	2	2	2	3
<b>EE8361</b>	<b>3.00</b>	<b>3.00</b>	<b>1.00</b>	<b>3.00</b>	<b>3.00</b>	<b>0.00</b>	<b>2.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>3.00</b>

Course Code	PSO1	PSO2
EE8361.1	3	3
EE8361.2	3	3
EE8361.3	3	3
EE8361.4	3	3
EE8361.5	3	3
<b>EE8361</b>	<b>3.00</b>	<b>3.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course</b>	C209 / HS8381 / Interpersonal Skills / Listening & Speaking
<b>Semester</b>	III
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
HS8381.1	Listen and comprehend video lectures and talks for improving pronunciation by giving personal information.
HS8381.2	Listen and participate in conversation on a variety of topics to speak clearly in formal and informal scenario.
HS8381.3	Listen to a lecture and videos for delivering a five minute talk about familiar topics with simple lexical terms and routine tasks in both formal and informal situations.
HS8381.4	Listen and participate actively in GD by giving a non verbal feedback and summarize academic readings and lectures.
HS8381.5	Give presentations dynamically by following various strategies like (group / pair) in an academic and business context.
HS8381.6	Excel their Productive skills (listening and speaking) to develop communicative competency in their work place and daily routine

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
HS8381.1	0	0	0	0	2	0	0	2	2	3	0	1
HS8381.2	0	0	0	0	2	0	0	2	2	3	0	1
HS8381.3	0	0	0	0	2	0	0	2	2	3	0	1
HS8381.4	0	0	0	0	2	0	0	2	2	3	0	1
HS8381.5	0	0	0	0	2	0	0	2	2	3	0	1
HS8381.6	0	0	0	0	2	0	0	2	2	3	0	1
<b>HS8381</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>	<b>3.00</b>	<b>0.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
HS8381.1	0	2
HS8381.2	0	2
HS8381.3	0	2
HS8381.4	0	2
HS8381.5	0	2
HS8381.6	0	2
<b>HS8381</b>	<b>0.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C210 / MA8452 / Statistics and Numerical Methods
<b>Semester</b>	IV
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
MA8452.1	Apply the concept of testing of hypothesis for small & large samples in real life problems.
MA8452.2	Acquire knowledge of statistical techniques using design of experiments
MA8452.3	Solve equations using numerical methods
MA8452.4	Solve problems using numerical differentiation and integration.
MA8452.5	Solve the partial & ordinary differential equation with initial & boundary condition by using certain technology with engineering application
MA8452.6	Develop knowledge to gain clear idea of power of statistical and numerical techniques , ideas and would be able to demonstrate the application of these techniques to problems drawn from engineering field.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MA8452.1	2	3	3	3	2	0	2	0	3	0	2	2
MA8452.2	2	3	3	3	3	0	2	0	3	0	2	2
MA8452.3	2	3	2	2	1	0	0	0	0	0	0	2
MA8452.4	3	3	3	2	2	0	0	0	0	0	0	2
MA8452.5	3	3	2	1	2	0	0	0	0	0	0	2
MA8452.6	3	3	3	3	3	0	2	0	3	0	2	2
<b>MA8452</b>	<b>2.50</b>	<b>3.00</b>	<b>2.67</b>	<b>2.33</b>	<b>2.17</b>	<b>0.00</b>	<b>2.00</b>	<b>0.00</b>	<b>3.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
MA8452.1	2	2
MA8452.2	2	3
MA8452.3	2	1
MA8452.4	3	2
MA8452.5	3	2
MA8452.6	3	3
<b>MA8452</b>	<b>2.50</b>	<b>2.17</b>

1	Slight	2	Moderate	3	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C211 / ME8492 / Kinematics of Machinery
<b>Semester</b>	IV
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8492.1</b>	Apply the fundamental principles of kinematics in various parts of the machine
<b>ME8492.2</b>	Analyze the velocity and acceleration in simple kinematics linkage mechanism
<b>ME8492.3</b>	Develop cam profile for specific follower motions and describe the terms related to cam and follower mechanism
<b>ME8492.4</b>	Calculate speed ratio for simple and compound gear trains
<b>ME8492.5</b>	Examine the friction in motion transmission elements
<b>ME8492.6</b>	Implement the basic principle and motion of a specified set of linkages and cam mechanism for specific output motion

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8492.1	3	3	3	2	1	1	2	0	0	0	2	2
ME8492.2	3	3	3	2	1	1	2	0	0	0	2	2
ME8492.3	3	3	3	2	1	1	2	0	0	0	2	2
ME8492.4	3	3	3	2	1	1	2	0	0	0	2	2
ME8492.5	3	3	3	2	1	1	2	0	0	0	2	2
ME8492.6	3	3	3	2	1	1	2	0	0	0	2	2
<b>ME8492</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>1.00</b>	<b>1.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8492.1	3	1
ME8492.2	3	1
ME8492.3	3	1
ME8492.4	3	1
ME8492.5	3	1
ME8492.6	3	1
<b>ME8492</b>	<b>3.00</b>	<b>1.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C212 / ME8451 / Manufacturing Technology – II
<b>Semester</b>	IV
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8451.1</b>	Elucidate the mechanism of material removal process
<b>ME8451.2</b>	Explain the construction and operational features of centre lathe and other special lathe
<b>ME8451.3</b>	Describe the constructional and operational features of special machines.
<b>ME8451.4</b>	Classify and explain the types of grinding and other finishing operations.
<b>ME8451.5</b>	Apply NC codes to prepare machining program
<b>ME8451.6</b>	Implement suitable special machines tool in machining of desired products.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8451.1	3	2	2	0	1	1	2	1	1	1	2	2
ME8451.2	3	2	1	0	2	1	1	1	1	1	2	2
ME8451.3	3	1	2	1	2	1	1	1	2	2	2	2
ME8451.4	3	2	1	0	1	1	0	1	2	2	2	2
ME8451.5	3	1	2	0	2	1	0	1	2	2	2	2
ME8451.6	3	2	2	1	1	1	2	1	1	1	2	2
<b>ME8451</b>	<b>3.00</b>	<b>1.67</b>	<b>1.67</b>	<b>1.00</b>	<b>1.50</b>	<b>1.00</b>	<b>1.50</b>	<b>1.00</b>	<b>1.50</b>	<b>1.50</b>	<b>2.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8451.1	3	1
ME8451.2	3	2
ME8451.3	3	2
ME8451.4	3	1
ME8451.5	3	2
ME8451.6	3	1
<b>ME8451</b>	<b>3.00</b>	<b>1.50</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C213 / ME8491 / Engineering Metallurgy
<b>Semester</b>	IV
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8491.1</b>	Explain alloys and phase diagram, Iron-iron Carbon diagram and steel classification
<b>ME8491.2</b>	Classify various heat treatments processes and its significant applications.
<b>ME8491.3</b>	Discuss the structure and properties of different materials like Ferrous and non ferrous
<b>ME8491.4</b>	Elucidate the concepts of polymers, ceramics and composite with its application
<b>ME8491.5</b>	Differentiate the properties of the materials under different testing conditions
<b>ME8491.6</b>	Apply the knowledge of material science on material selection for specific requirements

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8491.1	3	2	2	2	0	0	1	1	0	0	0	2
ME8491.2	3	2	2	2	0	0	1	1	0	0	0	3
ME8491.3	3	2	2	2	0	0	1	1	0	0	0	3
ME8491.4	3	2	2	2	0	0	1	1	0	0	0	3
ME8491.5	3	2	2	2	0	0	1	1	0	0	0	3
ME8491.6	3	2	2	2	0	0	1	1	0	0	0	3
<b>ME8491</b>	<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.83</b>

Course Code	PSO1	PSO2
ME8491.1	3	0
ME8491.2	3	0
ME8491.3	3	0
ME8491.4	3	0
ME8491.5	3	0
ME8491.6	3	0
<b>ME8491</b>	<b>3.00</b>	<b>0.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course</b>	C214 / CE8395 / Strength of Materials for Mechanical Engineers
<b>Semester</b>	IV
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>CE8395.1</b>	Compute stress and strain in simple and compound bars
<b>CE8395.2</b>	Calculate stresses and deformations in beams subjected to different loadings
<b>CE8395.3</b>	Apply basic equation of simple torsion in designing of shaft and helical springs.
<b>CE8395.4</b>	Determine slopes and deflection in beams by using appropriate methods.
<b>CE8395.5</b>	Analyze thin and thick shells for applied internal and external pressures.
<b>CE8395.6</b>	Investigate the shear force and bending moment diagrams for different members.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE8395.1	3	3	3	0	1	0	0	0	0	0	0	1
CE8395.2	3	3	3	1	1	0	0	0	0	0	0	1
CE8395.3	3	3	3	0	0	0	0	0	0	0	0	1
CE8395.4	3	3	3	1	0	0	0	0	0	0	0	1
CE8395.5	3	3	3	1	1	0	1	0	0	0	0	1
CE8395.6	3	3	3	1	3	0	1	0	0	0	0	1
<b>CE8395</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>1.00</b>	<b>1.50</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
CE8395.1	3	1
CE8395.2	3	1
CE8395.3	3	0
CE8395.4	3	0
CE8395.5	3	1
CE8395.6	3	3
<b>CE8395</b>	<b>3.00</b>	<b>1.50</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C215 / ME8493 / Thermal Engineering- I
<b>Semester</b>	IV
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8493.1</b>	Apply thermodynamic concepts to different Air standard and Steam power cycles
<b>ME8493.2</b>	Explain the working of air compressor and the factors influencing its performance.
<b>ME8493.3</b>	Classify the IC engines along with the working principle and combustion process.
<b>ME8493.4</b>	Calculate performance parameters of IC Engines.
<b>ME8493.5</b>	Explain the flow in Gas turbines and solve problems.
<b>ME8493.6</b>	Apply the thermodynamic concepts in various thermal applications like IC engines, Compressors and Gas Turbines.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8493.1	3	3	2	1	0	2	1	1	0	0	0	1
ME8493.2	3	3	2	1	0	2	1	0	0	0	0	1
ME8493.3	3	3	2	1	0	2	1	0	0	0	0	1
ME8493.4	3	3	2	1	0	2	1	0	0	0	0	1
ME8493.5	3	3	2	1	0	2	1	0	0	0	0	1
ME8493.6	3	3	2	1	0	2	1	1	0	0	0	1
<b>ME8493</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>1.00</b>	<b>0.00</b>	<b>2.00</b>	<b>1.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
ME8493.1	3	2
ME8493.2	3	2
ME8493.3	3	2
ME8493.4	3	2
ME8493.5	3	2
ME8493.6	3	2
<b>ME8493</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C216 / ME8462 / Manufacturing Technology Laboratory – II
<b>Semester</b>	IV
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8462.1</b>	Use different machine tool to manufacture gears.
<b>ME8462.2</b>	Use different machine tools for finishing operations.
<b>ME8462.3</b>	Fetch the nomenclature of cutting tool using cutter grinding machine
<b>ME8462.4</b>	Write CNC part program for manufacturing different components
<b>ME8462.5</b>	Perform machining operation in the planning machine.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8462.1	3	2	0	0	1	0	2	0	2	0	0	1
ME8462.2	3	3	3	0	3	1	2	0	2	0	0	3
ME8462.3	3	3	3	0	3	1	2	0	2	0	0	3
ME8462.4	3	2	2	0	2	1	2	0	2	0	0	2
ME8462.5	3	2	2	0	2	1	1	0	2	0	0	2
<b>ME8462</b>	<b>3.00</b>	<b>2.40</b>	<b>2.50</b>	<b>0.00</b>	<b>2.20</b>	<b>1.00</b>	<b>1.80</b>	<b>0.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.20</b>

Course Code	PSO1	PSO2
ME8462.1	3	1
ME8462.2	3	3
ME8462.3	3	3
ME8462.4	3	2
ME8462.5	3	2
<b>ME8462</b>	<b>3.00</b>	<b>2.20</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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**B.E - Department of Mechanical Engineering**

<b>Course Code / Course Name</b>	C217 / CE8381 / Strength of Materials and Fluid Mechanics and Machinery Laboratory
<b>Semester</b>	IV
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>CE8381.1</b>	Execute different destructive testing and Compare Characteristics of material and design considering engineering properties, sustainability, cost and weight
<b>CE8381.2</b>	Analyze and design structural members subjected to tension, compression, torsion, bending
<b>CE8381.3</b>	Perform combined stresses using the fundamental concepts of stress, strain and elastic behavior of materials
<b>CE8381.4</b>	Measure the discharge of fluid flow in a pipe by using different flow measurement devices
<b>CE8381.5</b>	Perform the characteristics of positive displacement and dynamic pumps and also calculate the energy losses of friction in a pipe flow for various flow conditions
<b>CE8381.6</b>	Determine the efficiency of impulse and reaction turbine in various load conditions and compare the performance characteristics of pumps and turbines

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE8381.1	3	3	1	1	2	2	2	2	2	1	0	1
CE8381.2	3	3	1	1	2	2	2	2	2	1	0	1
CE8381.3	3	3	1	1	2	2	2	2	2	1	0	1
CE8381.4	3	3	1	1	2	2	2	2	2	1	0	1
CE8381.5	3	3	1	1	2	2	2	2	2	1	0	1
CE8381.6	3	3	1	1	2	2	2	2	2	1	0	1
<b>CE8381</b>	<b>3.00</b>	<b>3.00</b>	<b>1.00</b>	<b>1.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>1.00</b>	<b>0</b>	<b>1.00</b>

Course Code	PSO1	PSO2
CE8381.1	3	2
CE8381.2	3	2
CE8381.3	3	2
CE8381.4	3	2
CE8381.5	3	2
CE8381.6	3	2
<b>CE8381</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C218 / HS8461 / Advanced Reading and Writing
<b>Semester</b>	IV
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>HS8461.1</b>	Read and write the different genre of texts by adopting various strategies for delivering a descriptive paragraph.
<b>HS8461.2</b>	Review tables, charts, graphs and other images comprehensively to write a paragraph.
<b>HS8461.3</b>	Write well organized essays with adequate details by reading different genres of text .
<b>HS8461.4</b>	Prepare convincing proposals, email writing, resumes and job application by reading different genres.
<b>HS8461.5</b>	Develop critical reading and thinking in order to prepare letter of recommendation and vision statement in writing excellently.
<b>HS8461.6</b>	Excel their receptive skills (reading and writing) to develop communicative competency in their work place and daily routine

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
HS8461.1	0	0	0	0	2	0	0	2	2	3	0	1
HS8461.2	0	0	0	0	2	0	0	2	2	3	0	1
HS8461.3	0	0	0	0	2	0	0	2	2	3	0	1
HS8461.4	0	0	0	0	2	0	0	2	2	3	0	1
HS8461.5	0	0	0	0	2	0	0	2	2	3	0	1
HS8461.6	0	0	0	0	2	0	0	2	2	3	0	1
<b>HS8461</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>	<b>3.00</b>	<b>0.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
HS8461.1	0	2
HS8461.2	0	2
HS8461.3	0	2
HS8461.4	0	2
HS8461.5	0	2
HS8461.6	0	2
<b>HS8461</b>	<b>0.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C301 / ME8595 / Thermal Engineering- II
<b>Semester</b>	V
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8595.1</b>	Comprehend the concepts and Solve problems in Steam Nozzle
<b>ME8595.2</b>	Explain the functioning and features of different types of Boilers and auxiliaries and calculate performance parameters.
<b>ME8595.3</b>	Associate the principle of impulse and reaction steam turbine, draw velocity diagrams for steam turbines and solve problems.
<b>ME8595.4</b>	Summarize the concept of Cogeneration, Working features of Heat pumps and Heat exchangers
<b>ME8595.5</b>	Solve problems using refrigerant table / charts and psychrometric charts
<b>ME8595.6</b>	Analysis the concepts of thermodynamic principle of nozzle, boiler, steam turbine, and refrigeration and air conditioning.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8595.1	3	3	2	2	2	1	1	1	1	0	1	1
ME8595.2	3	3	2	2	2	1	1	1	1	0	1	1
ME8595.3	3	3	2	2	2	1	1	1	1	0	1	1
ME8595.4	3	3	2	2	2	1	1	1	1	0	1	1
ME8595.5	3	3	2	2	2	1	1	1	1	0	1	1
ME8595.6	3	3	2	2	2	1	1	1	1	0	1	1
<b>ME8595</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>0.00</b>	<b>1.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
ME8595.1	3	2
ME8595.2	3	2
ME8595.3	3	2
ME8595.4	3	2
ME8595.5	3	2
ME8595.6	3	2
<b>ME8595</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C302 / ME8593 / Design of Machine Elements
<b>Semester</b>	V
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8593.1</b>	Compute the stress acting on various machine elements
<b>ME8593.2</b>	Compute the dimensions, stress requirements of shaft and couplings based on various load conditions
<b>ME8593.3</b>	Summarize about temporary and permanent joints based on application requirements
<b>ME8593.4</b>	Compute the dimensions of the energy storing devices for specific applications
<b>ME8593.5</b>	Predict appropriate bearing, from the standard catalog for varied applications
<b>ME8593.6</b>	Apply the various design concepts on to real time product applications

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8593.1	3	3	3	2	1	2	0	0	0	1	0	2
ME8593.2	3	3	3	2	1	2	0	0	0	1	0	2
ME8593.3	3	3	3	2	1	2	0	0	0	1	0	2
ME8593.4	3	3	3	2	1	2	0	0	0	1	3	2
ME8593.5	3	3	3	2	1	2	0	0	0	1	3	2
ME8593.6	3	3	3	2	1	2	0	0	0	1	0	2
<b>ME8593</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>1.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>3.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8593.1	3	1
ME8593.2	3	1
ME8593.3	3	1
ME8593.4	3	1
ME8593.5	3	1
ME8593.6	3	1
<b>ME8593</b>	<b>3.00</b>	<b>1.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C303 / ME8501 / Metrology and Measurements
<b>Semester</b>	V
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8501.1</b>	Describe the concepts of measurements to apply in various metrological instruments
<b>ME8501.2</b>	Outline the principles of linear and angular measurement tools used for industrial applications
<b>ME8501.3</b>	Explain the procedure for conducting computer aided inspection
<b>ME8501.4</b>	Demonstrate the techniques of form measurement used for industrial components
<b>ME8501.5</b>	Discuss various measuring techniques of mechanical properties in industrial applications
<b>ME8501.6</b>	Utilize different measurement technologies to quantify varying parameters for real time applications

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8501.1	3	3	3	2	0	2	0	0	0	2	0	2
ME8501.2	3	3	3	2	0	2	0	0	0	2	0	2
ME8501.3	3	3	3	2	0	2	0	0	0	0	0	2
ME8501.4	3	3	3	2	0	2	0	0	0	0	0	2
ME8501.5	3	3	3	2	0	2	0	0	0	1	2	2
ME8501.6	3	3	3	2	0	2	0	0	0	2	2	2
<b>ME8501</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>0.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.75</b>	<b>2.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8501.1	3	0
ME8501.2	3	0
ME8501.3	3	0
ME8501.4	3	0
ME8501.5	3	0
ME8501.6	3	0
<b>ME8501</b>	<b>3.00</b>	<b>0.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C304 / ME8594 / Dynamics of Machines
<b>Semester</b>	V
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8594.1</b>	Calculate static and dynamic forces of mechanisms
<b>ME8594.2</b>	Apply balancing principles for solving rotating and reciprocating masses
<b>ME8594.3</b>	Solve problems in free vibrations of single degree freedom systems
<b>ME8594.4</b>	Determine the frequency of forced vibrations and damping coefficients
<b>ME8594.5</b>	Calculate the speed and lift of governors and estimate the gyroscopic effect on automobiles, ship and aeroplane
<b>ME8594.6</b>	Perform force analysis, balancing and vibration on mechanisms and machines

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8594.1	3	3	3	2	2	1	0	0	0	0	1	3
ME8594.2	3	3	3	2	2	1	0	0	0	0	1	3
ME8594.3	3	3	3	2	2	1	0	0	0	0	1	3
ME8594.4	3	3	3	2	2	1	0	0	0	0	1	3
ME8594.5	3	3	3	2	2	1	0	0	0	0	1	3
ME8594.6	3	3	3	2	2	1	0	0	0	0	1	3
<b>ME8594</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>3.00</b>

Course Code	PSO1	PSO2
ME8594.1	3	2
ME8594.2	3	2
ME8594.3	3	2
ME8594.4	3	2
ME8594.5	3	2
ME8594.6	3	2
<b>ME8594</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C305 / ORO551 / Renewable Energy Sources
<b>Semester</b>	V
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ORO551.1</b>	Acquire the fundamental knowledge about Solar radiation Data
<b>ORO551.2</b>	Analyze different types of Solar collectors
<b>ORO551.3</b>	Examine the application of Solar energy and its impact
<b>ORO551.4</b>	Attain knowledge in wind energy and biomass with its economic aspects
<b>ORO551.5</b>	Obtain knowledge in capturing and applying other forms of energy sources like wind, biogas and geothermal energies.
<b>ORO551.6</b>	Comprehend the trends in renewable energy sources

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ORO551.1	3	2	2	0	0	1	1	2	2	1	0	2
ORO551.2	3	2	2	0	0	1	1	2	2	1	1	2
ORO551.3	2	2	2	0	0	0	0	1	2	1	1	2
ORO551.4	2	2	2	0	0	1	1	1	2	1	1	2
ORO551.5	2	2	2	0	0	1	1	1	2	1	1	2
ORO551.6	2	2	2	0	0	1	1	1	2	1	1	2
<b>ORO551</b>	<b>2.33</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.33</b>	<b>2.00</b>	<b>1.00</b>	<b>1.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ORO551.1	3	0
ORO551.2	3	0
ORO551.3	2	0
ORO551.4	2	0
ORO551.5	2	0
ORO551.6	2	0
<b>ORO551</b>	<b>2.33</b>	<b>0.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C306 / ME8511 / Kinematics and Dynamics Laboratory
<b>Semester</b>	V
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8511.1</b>	Explain gear parameters, kinematics of mechanisms, gyroscopic effect and working of lab equipments.
<b>ME8511.2</b>	Determine mass moment of inertia of mechanical element, governor effort and range sensitivity, natural frequency and damping coefficient, torsional frequency.
<b>ME8511.3</b>	Establish critical speeds of shafts, balancing mass of rotating and reciprocating masses, and transmissibility ratio.
<b>ME8511.4</b>	Comprehend the principles in kinematics and dynamics of machinery.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8511.1	2	2	2	1	3	2	2	3	3	3	2	3
ME8511.2	2	2	2	1	2	2	2	3	2	3	2	2
ME8511.3	2	2	2	1	3	2	2	3	2	3	2	3
ME8511.4	2	2	2	1	3	2	2	3	3	3	2	3
<b>ME8511</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>1.00</b>	<b>2.75</b>	<b>2.00</b>	<b>2.00</b>	<b>3.00</b>	<b>2.50</b>	<b>3.00</b>	<b>2.00</b>	<b>2.75</b>

Course Code	PSO1	PSO2
ME8511.1	2	3
ME8511.2	2	2
ME8511.3	2	3
ME8511.4	2	3
<b>ME8511</b>	<b>2.00</b>	<b>2.75</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C307 / ME8512 / Thermal Engineering Laboratory
<b>Semester</b>	V
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8512.1</b>	Perform tests on 2- stroke and 4-stroke diesel and petrol engine and performance test on steam generator and steam turbine.
<b>ME8512.2</b>	Evaluate tests on heat conduction apparatus and evaluate thermal conductivity of materials and tests on natural and forced convective heat transfer apparatus and evaluate heat transfer coefficient.
<b>ME8512.3</b>	Determine radiative heat transfer apparatus and evaluate Stefan Boltzmann constant and emissivity.
<b>ME8512.4</b>	Evaluate the performance of parallel/counter flow heat exchanger apparatus and reciprocating air compressor.
<b>ME8512.5</b>	Calculate the performance of refrigeration and air conditioning test rigs.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8512.1	3	3	3	0	1	1	1	0	2	2	0	1
ME8512.2	3	3	3	0	1	1	1	2	2	2	0	1
ME8512.3	3	3	3	0	1	1	1	2	2	2	0	1
ME8512.4	3	3	3	0	1	1	1	2	2	2	0	1
ME8512.5	3	3	3	0	1	1	1	2	2	2	0	1
<b>ME8512</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>0.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
ME8512.1	3	2
ME8512.2	3	2
ME8512.3	3	2
ME8512.4	3	2
ME8512.5	3	2
<b>ME8512</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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**B.E - Department of Mechanical Engineering**

<b>Course Code / Course Name</b>	C308 / ME8513 / Metrology and Measurements Laboratory
<b>Semester</b>	V
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
ME8513.1	Calibrate vernier, micrometer using slip gauges and setting up comparator for the inspection.
ME8513.2	Demonstrate the instruments used for linear and angular measurements.
ME8513.3	Compute gear tooth profile and screw thread parameters using non-contact instruments.
ME8513.4	Measure the force, torque, displacement and temperature using thermocouples.
ME8513.5	Perform measurement in prismatic components using CMM.
ME8513.6	Handle different measurement tools and perform linear and angular measurements in quality inspection.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8513.1	3	2	2	0	2	0	0	2	2	1	0	2
ME8513.2	3	2	2	0	2	0	0	2	2	1	0	2
ME8513.3	3	2	2	0	2	0	0	2	2	1	0	2
ME8513.4	3	2	2	0	2	0	0	2	2	1	0	2
ME8513.5	3	2	2	0	2	0	0	2	2	1	0	2
ME8513.6	3	2	2	0	2	0	0	2	2	1	0	2
<b>ME8513</b>	<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>	<b>1.00</b>	<b>0.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8513.1	3	2
ME8513.2	3	2
ME8513.3	3	2
ME8513.4	3	2
ME8513.5	3	2
ME8513.6	3	2
<b>ME8513</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C309 / ME8651 / Design of Transmission Systems
<b>Semester</b>	VI
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8651.1</b>	Compute the design parameters of flexible power transmission elements like belts, ropes and chain drives.
<b>ME8651.2</b>	Analyze and design the parallel axis gears like spur and helical gears.
<b>ME8651.3</b>	Calculate various parameters in designing intersecting and non parallel gears like bevel and worm gear.
<b>ME8651.4</b>	Determine the speed ratio and gear box parameters for single stage and multi stage gear box.
<b>ME8651.5</b>	Evaluate the parameters required to design cam, clutches and brakes for desired applications.
<b>ME8651.6</b>	Apply the design principles and procedures in designing the power transmission elements using standard catalogue.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8651.1	3	3	3	3	2	2	1	2	2	3	2	3
ME8651.2	3	3	3	3	2	2	1	2	2	3	2	3
ME8651.3	3	3	3	3	2	2	1	2	2	3	2	3
ME8651.4	3	3	3	3	2	2	1	2	2	3	2	3
ME8651.5	3	3	3	3	2	2	1	2	2	3	2	3
ME8651.6	3	3	3	3	2	2	1	2	2	3	2	3
<b>ME8651</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>1.00</b>	<b>2.00</b>	<b>2.00</b>	<b>3.00</b>	<b>2.00</b>	<b>3.00</b>

Course Code	PSO1	PSO2
ME8651.1	3	2
ME8651.2	3	2
ME8651.3	3	2
ME8651.4	3	2
ME8651.5	3	2
ME8651.6	3	2
<b>ME8651</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C310 / ME8691 / Computer Aided Design and Manufacturing
<b>Semester</b>	VI
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8691.1</b>	Describe the 2D , 3D transformation , clipping algorithm , manufacturing models and matrix.
<b>ME8691.2</b>	Explain fundamentals of parametric curve , surfaces and solids.
<b>ME8691.3</b>	Elucidate the different types of standards used in CAD.
<b>ME8691.4</b>	Apply program concepts of NC and CNC to write part program for turning and machining.
<b>ME8691.5</b>	Distinguish the different types of techniques used in cellular manufacturing and FMS
<b>ME8691.6</b>	Comprehend the application of computer in various manufacturing, design, planning and material handling system.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8691.1	3	1	1	0	0	0	0	0	0	1	1	2
ME8691.2	3	1	1	0	0	0	0	0	0	1	1	2
ME8691.3	3	1	1	0	0	0	0	2	0	1	1	2
ME8691.4	3	1	1	0	2	0	0	0	0	1	1	2
ME8691.5	3	1	1	0	2	0	0	2	0	1	1	2
ME8691.6	3	1	1	0	0	0	0	0	0	1	1	2
<b>ME8691</b>	<b>3.00</b>	<b>1.00</b>	<b>1.00</b>	<b>0.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>0.00</b>	<b>1.00</b>	<b>1.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8691.1	3	0
ME8691.2	3	0
ME8691.3	3	0
ME8691.4	3	2
ME8691.5	3	2
ME8691.6	3	0
<b>ME8691</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C311 / ME8693 / Heat and Mass Transfer
<b>Semester</b>	VI
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8693.1</b>	Solve steady state and unsteady state problem by using heat conductive equation
<b>ME8693.2</b>	Discuss the concept of convection with the flow of fluids in different elements.
<b>ME8693.3</b>	Associate the significance of phase change with heat transfer in heat exchangers
<b>ME8693.4</b>	Discuss the concept of radiation and application in heat transfer systems
<b>ME8693.5</b>	Explain the concept of mass transfer and its correlations.
<b>ME8693.6</b>	Apply the conduction and convection principles in product application by real time study.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8693.1	3	3	2	3	2	0	1	0	0	2	2	2
ME8693.2	3	3	2	2	3	0	1	0	1	2	2	3
ME8693.3	3	3	3	3	3	0	1	0	1	2	2	3
ME8693.4	3	3	3	3	2	1	1	0	1	2	2	3
ME8693.5	3	3	2	2	2	1	1	0	1	2	2	3
ME8693.6	3	3	3	3	3	0	1	0	1	2	2	3
<b>ME8693</b>	<b>3.00</b>	<b>3.00</b>	<b>2.50</b>	<b>2.67</b>	<b>2.50</b>	<b>1.00</b>	<b>1.00</b>	<b>0.00</b>	<b>1.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.83</b>

Course Code	PSO1	PSO2
ME8693.1	3	2
ME8693.2	3	3
ME8693.3	3	3
ME8693.4	3	2
ME8693.5	3	2
ME8693.6	3	3
<b>ME8693</b>	<b>3.00</b>	<b>2.50</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C312 / ME8692 / Finite Element Analysis
<b>Semester</b>	VI
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8692.1</b>	Apply the basics of Finite Element formulation to different application.
<b>ME8692.2</b>	Implement finite element methods for simple one dimensional problems
<b>ME8692.3</b>	Determine two-dimensional Scalar Problems by using finite element formulation.
<b>ME8692.4</b>	Solve two-dimensional Vector Problems by using finite element formulation.
<b>ME8692.5</b>	Apply the finite element method to solve Problems on iso-parametric Elements and dynamics Problems.
<b>ME8692.6</b>	Comprehend different mathematical Techniques used in FEM analysis and use of them in structural and thermal Problem

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8692.1	3	3	1	1	0	2	2	0	0	1	0	2
ME8692.2	3	3	1	1	2	2	2	2	0	1	0	2
ME8692.3	3	3	3	3	2	2	2	2	0	1	0	2
ME8692.4	3	3	3	3	2	2	2	2	0	1	0	2
ME8692.5	3	3	1	1	2	2	2	0	0	1	0	2
ME8692.6	3	3	1	1	0	2	2	0	0	1	0	2
<b>ME8692</b>	<b>3.00</b>	<b>3.00</b>	<b>1.67</b>	<b>1.67</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8692.1	3	0
ME8692.2	3	2
ME8692.3	3	2
ME8692.4	3	2
ME8692.5	3	2
ME8692.6	3	0
<b>ME8692</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C313 / ME8694 / Hydraulics and Pneumatics
<b>Semester</b>	VI
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8694.1</b>	elucidate the fluid power principles and operation of different types of pumps
<b>ME8694.2</b>	Summarize the features and functions of hydraulic motors, actuators and flow control valves
<b>ME8694.3</b>	Differentiate and explain the various types of hydraulics circuits and systems
<b>ME8694.4</b>	Explain the working of different pneumatic circuits and systems
<b>ME8694.5</b>	Identify various troubleshooting method and design hydraulic and pneumatic systems for various applications
<b>ME8694.6</b>	Apply fluid power system in process, construction and manufacturing industries

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8694.1	3	3	1	1	0	2	2	0	0	1	0	2
ME8694.2	3	3	1	1	2	2	2	2	0	1	0	2
ME8694.3	3	3	3	3	2	2	2	2	0	1	0	2
ME8694.4	3	3	1	3	2	2	2	2	0	1	0	2
ME8694.5	3	3	3	1	2	2	2	0	0	1	0	2
ME8694.6	3	3	1	1	0	2	2	0	0	1	0	2
<b>ME8694</b>	<b>3.00</b>	<b>3.00</b>	<b>1.67</b>	<b>1.67</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8694.1	3	0
ME8694.2	3	2
ME8694.3	3	2
ME8694.4	3	2
ME8694.5	3	2
ME8694.6	3	0
<b>ME8694</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C314 / ME8091 / Automobile Engineering
<b>Semester</b>	VI
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8091.1</b>	Recognize the various parts of the automobile and their functions and materials.
<b>ME8091.2</b>	Discuss the engine auxiliary systems and engine emission control.
<b>ME8091.3</b>	Distinguish the working of different types of transmission systems.
<b>ME8091.4</b>	Explain the Steering, Brakes and Suspension Systems.
<b>ME8091.5</b>	Predict possible alternate sources of energy for IC Engines.
<b>ME8091.6</b>	Dismantling and assembling of engine parts.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8091.1	3	3	1	1	3	2	2	2	0	0	1	2
ME8091.2	3	3	1	1	3	2	2	2	0	0	1	2
ME8091.3	3	3	1	1	3	2	2	2	0	0	1	2
ME8091.4	3	3	1	1	3	2	2	2	0	0	1	2
ME8091.5	3	3	1	1	3	2	2	2	0	0	1	2
ME8091.6	3	3	1	1	3	2	2	2	0	0	1	2
<b>ME8091</b>	<b>3.00</b>	<b>3.00</b>	<b>1.00</b>	<b>1.00</b>	<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8091.1	3	2
ME8091.2	3	2
ME8091.3	3	2
ME8091.4	3	2
ME8091.5	3	2
ME8091.6	3	2
<b>ME8091</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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**B.E - Department of Mechanical Engineering**

Course Code / Course Name	C315 / ME8681 / CAD / CAM Laboratory
Semester	VI
Regulation	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
ME8681.1	Develop 3D model, assembly and detailed drawings of engineering components using modeling tool.
ME8681.2	Utilize the concepts of G and M codes and manual part programming for modern manufacturing technology.
ME8681.3	Prepare computer aided part program and perform manufacturing in CNC tool.
ME8681.4	Perform assembly animation and motion study for various machine components.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8681.1	3	3	3	2	3	2	2	2	2	2	2	3
ME8681.2	3	3	3	2	3	2	2	2	2	2	2	3
ME8681.3	3	3	3	2	3	2	2	2	2	2	2	3
ME8681.4	3	3	3	2	3	2	2	2	2	2	2	3
<b>ME8681</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>3.00</b>

Course Code	PSO1	PSO2
ME8681.1	3	3
ME8681.2	3	3
ME8681.3	3	3
ME8681.4	3	3
<b>ME8681</b>	<b>3.00</b>	<b>3.00</b>

1	Slight	2	Moderate	3	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C316 / ME8682 / Design and Fabrication Project
<b>Semester</b>	VI
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8682.1</b>	Design and Fabricate the machine element or the mechanical product.
<b>ME8682.2</b>	Demonstrate the working model of the machine element or the mechanical product.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8682.1	3	3	3	3	3	2	2	2	2	3	3	2
ME8682.2	3	3	3	3	3	2	2	2	2	3	3	2
<b>ME8682</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8682.1	3	3
ME8682.2	3	3
<b>ME8682</b>	<b>3.00</b>	<b>3.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C317 / HS8581 / Professional Communication
<b>Semester</b>	VI
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>HS8581.1</b>	Hone up soft skills, hard skills and current affairs for professional development in employability skills.
<b>HS8581.2</b>	Deliver an individual presentation either by oral or visual by introducing oneself effectively.
<b>HS8581.3</b>	Use different GD strategies to participate and interact effectively in GD.
<b>HS8581.4</b>	Orient interview etiquettes make them to attend various mock interviews by asking FAQs.
<b>HS8581.5</b>	Recognize the different between teams and groups for developing time, stress and career management towards the lifelong learning
<b>HS8581.6</b>	Develop career planning and creative skills to work towards lifelong learning

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
HS8581.1	0	0	0	0	0	0	0	3	3	3	3	3
HS8581.2	0	0	0	0	2	2	2	3	2	3	3	2
HS8581.3	0	0	0	0	3	2	2	3	2	3	3	3
HS8581.4	0	0	0	0	1	3	3	3	2	3	3	3
HS8581.5	0	1	0	0	1	3	2	1	3	3	3	2
HS8581.6	0	1	0	0	1	3	2	1	3	3	3	2
<b>HS8581</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.60</b>	<b>2.60</b>	<b>2.20</b>	<b>2.33</b>	<b>2.50</b>	<b>3.00</b>	<b>3.00</b>	<b>2.50</b>

Course Code	PSO1	PSO2
HS8581.1	0	0
HS8581.2	0	2
HS8581.3	0	3
HS8581.4	0	1
HS8581.5	0	1
HS8581.6	0	1
<b>HS8581</b>	<b>0.00</b>	<b>1.60</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C401 / ME8792 / Power Plant Engineering
<b>Semester</b>	VII
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8792.1</b>	Discuss the layout of thermal power plant and working principle of various types of boilers.
<b>ME8792.2</b>	Elucidate the working of diesel and gas turbine power plant along with optimization technique
<b>ME8792.3</b>	Discuss the various types of nuclear reactors used in nuclear power plant
<b>ME8792.4</b>	Summarize the principles and working of various renewable energy power plants.
<b>ME8792.5</b>	Explain the energy, economic and environmental issues of power plants
<b>ME8792.6</b>	Summarize the different types of power plant, its function and issues related to them

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8792.1	3	3	2	1	2	2	1	1	0	0	2	1
ME8792.2	3	3	2	1	2	2	1	1	0	0	2	1
ME8792.3	3	3	2	1	2	2	1	1	0	0	2	1
ME8792.4	3	3	2	1	2	2	1	1	0	0	2	1
ME8792.5	3	3	2	1	2	2	1	1	0	0	2	1
ME8792.6	3	3	2	1	2	2	1	1	0	0	2	1
<b>ME8792</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>1.00</b>	<b>2.00</b>	<b>2.00</b>	<b>1.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>1.00</b>

Course Code	PSO1	PSO2
ME8792.1	3	2
ME8792.2	3	2
ME8792.3	3	2
ME8792.4	3	2
ME8792.5	3	2
ME8792.6	3	2
<b>ME8792</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C402 / ME8793 / Process Planning and Cost Estimation
<b>Semester</b>	VII
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
ME8793.1	Select the process equipment and tools for various industrial product
ME8793.2	Predict the process parameters for various production processes and perform process planning and scheduling.
ME8793.3	Explain the importance of costing and estimation procedures
ME8793.4	Perform cost estimation of forging, welding and foundry shop
ME8793.5	Estimate of machining time for various machining operations
ME8793.6	Develop knowledge to make logical, rational and economical process plans and realistic cost estimates of components and products.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8793.1	2	2	2	1	2	2	2	3	3	1	3	3
ME8793.2	2	2	2	1	2	2	2	3	2	1	3	2
ME8793.3	2	2	2	1	2	2	2	3	2	1	3	2
ME8793.4	2	2	2	1	2	2	2	3	2	1	3	2
ME8793.5	2	2	2	1	2	2	2	3	2	1	3	2
ME8793.6	2	2	2	1	2	2	2	3	2	1	3	2
<b>ME8793</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>1.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>3.00</b>	<b>2.17</b>	<b>1.00</b>	<b>3.00</b>	<b>2.17</b>

Course Code	PSO1	PSO2
ME8793.1	2	2
ME8793.2	2	2
ME8793.3	2	2
ME8793.4	2	2
ME8793.5	2	2
ME8793.6	2	2
<b>ME8793</b>	<b>2.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C403 / ME8791 / Mechatronics
<b>Semester</b>	VII
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8791.1</b>	Apply the basic concepts of sensors and their characteristics in various engineering applications.
<b>ME8791.2</b>	Elucidate the features of microprocessor and microcontroller
<b>ME8791.3</b>	Explain the programmable peripheral interface, architecture of 8255 PPI and various device interfacing for real time applications.
<b>ME8791.4</b>	Develop the structure and programming of PLC to control the actuation systems
<b>ME8791.5</b>	Associate the mechatronics and actuator systems for real time applications
<b>ME8791.6</b>	Discuss the influence of mechatronics systems(microprocessor, microcontroller & PLC) in industrial automation

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8791.1	3	0	1	3	2	3	3	1	2	2	3	3
ME8791.2	3	0	3	3	2	1	2	0	1	2	3	2
ME8791.3	3	1	3	3	3	1	2	0	1	2	3	2
ME8791.4	3	1	3	3	3	2	2	0	2	2	3	2
ME8791.5	3	2	2	2	2	2	1	3	2	2	3	2
ME8791.6	3	2	2	2	2	2	1	3	2	2	3	2
<b>ME8791</b>	<b>3.00</b>	<b>1.50</b>	<b>2.33</b>	<b>2.67</b>	<b>2.33</b>	<b>1.83</b>	<b>1.83</b>	<b>2.33</b>	<b>1.67</b>	<b>2.00</b>	<b>3.00</b>	<b>2.17</b>

Course Code	PSO1	PSO2
ME8791.1	3	2
ME8791.2	3	2
ME8791.3	3	3
ME8791.4	3	3
ME8791.5	3	2
ME8791.6	3	2
<b>ME8791</b>	<b>3.00</b>	<b>2.33</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C404 / OIE751 / Robotics
<b>Semester</b>	VII
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>OIE751.1</b>	Describe the basic concepts of industrial robotics and key components of robotics technologies.
<b>OIE751.2</b>	Summarize the robot drive systems, grippers and various end effectors
<b>OIE751.3</b>	Apply the different sensors and image processing techniques in robotics. to improve the ability of robots
<b>OIE751.4</b>	Analyze the various kinematics of robots and prepare the robot program.
<b>OIE751.5</b>	Explain the implementations of robots in industries and economic analysis of robots
<b>OIE751.6</b>	apply the basic engineering knowledge for the design of robotics

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
OIE751.1	3	2	2	1	2	2	0	0	0	1	2	2
OIE751.2	3	2	2	1	2	2	0	0	0	1	2	2
OIE751.3	3	2	2	1	2	2	0	0	0	1	2	2
OIE751.4	3	2	2	1	2	2	0	0	0	1	2	2
OIE751.5	3	2	2	1	2	2	0	0	0	1	2	2
OIE751.6	3	2	2	1	2	2	0	0	0	1	2	2
<b>OIE751</b>	<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>1.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>2.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
OIE751.1	3	3
OIE751.2	3	3
OIE751.3	3	3
OIE751.4	3	3
OIE751.5	3	3
OIE751.6	3	3
<b>OIE751</b>	<b>3.00</b>	<b>3.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C405 / ME8073 / Unconventional Machining Processes
<b>Semester</b>	VII
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8073.1</b>	Elucidate the need for unconventional machining processes and its classification.
<b>ME8073.2</b>	Evaluate various Mechanical thermal energy based unconventional machining processes.
<b>ME8073.3</b>	Compare various electrical energy based unconventional machining processes.
<b>ME8073.4</b>	Summarize various chemical and electro-chemical energy based unconventional machining processes.
<b>ME8073.5</b>	Illustrate Various thermal energy based unconventional machining processes.
<b>ME8073.6</b>	Describe various unconventional machining processes, the various process parameters and their influence on performance and their applications.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8073.1	3	1	1	0	0	1	1	0	0	1	0	3
ME8073.2	3	3	2	2	1	0	0	0	2	2	3	2
ME8073.3	3	3	3	2	2	0	2	0	2	3	3	2
ME8073.4	3	3	3	3	3	0	2	0	2	3	3	2
ME8073.5	3	3	3	3	3	0	2	0	2	3	3	3
ME8073.6	3	3	3	3	3	0	2	0	2	3	3	3
<b>ME8073</b>	<b>3.00</b>	<b>2.67</b>	<b>2.50</b>	<b>2.60</b>	<b>2.40</b>	<b>1.00</b>	<b>1.80</b>	<b>0.00</b>	<b>2.00</b>	<b>2.50</b>	<b>3.00</b>	<b>2.50</b>

Course Code	PSO1	PSO2
ME8073.1	3	0
ME8073.2	3	1
ME8073.3	3	2
ME8073.4	3	3
ME8073.5	3	3
ME8073.6	3	3
<b>ME8073</b>	<b>3.00</b>	<b>2.40</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C406 / ME8097 / Non Destructive Testing and Evaluation
<b>Semester</b>	VII
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8097.1</b>	Discuss the overview of Non Destructive Testing Methods for the detection of manufacturing defects as well as material characterization and its application.
<b>ME8097.2</b>	Explicate and discuss the different methods of non destructive evaluation
<b>ME8097.3</b>	Elucidate the concept of Thermography and eddy current testing
<b>ME8097.4</b>	Enlighten the concept of Ultrasonic Testing and Acoustic Emission.
<b>ME8097.5</b>	Explain concept of radiographic testing.
<b>ME8097.6</b>	Understand and explain the various Non Destructive Evaluation and Testing methods.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8097.1	3	3	1	2	3	2	0	2	0	1	0	2
ME8097.2	3	3	1	2	3	2	2	2	0	1	0	2
ME8097.3	3	3	1	2	3	2	2	2	0	1	0	2
ME8097.4	3	3	1	2	3	2	2	2	0	1	0	2
ME8097.5	3	3	1	2	3	2	2	2	0	1	0	2
ME8097.6	3	3	1	2	3	2	2	2	0	1	0	2
<b>ME8097</b>	<b>3.00</b>	<b>3.00</b>	<b>1.00</b>	<b>2.00</b>	<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8097.1	3	3
ME8097.2	3	3
ME8097.3	3	3
ME8097.4	3	3
ME8097.5	3	3
ME8097.6	3	3
<b>ME8097</b>	<b>3.00</b>	<b>3.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C407 / ME8711 / Simulation and Analysis Laboratory
<b>Semester</b>	VII
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8711.1</b>	Analyze the stress and strain induced in trusses, plates, brackets and beams
<b>ME8711.2</b>	Solve the heat transfer problems using FEA packages
<b>ME8711.3</b>	Calculate the natural frequency, mode shape analysis and multibody dynamics of 2D components and beams
<b>ME8711.4</b>	Simulate the principles of spring mass system using MATLAB

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8711.1	3	3	2	1	3	1	0	2	2	3	0	2
ME8711.2	3	3	2	1	3	1	0	2	2	3	0	2
ME8711.3	3	3	2	1	3	1	0	2	2	3	0	2
ME8711.4	3	3	2	1	3	1	0	2	2	3	0	2
<b>ME8711</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>1.00</b>	<b>3.00</b>	<b>1.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>	<b>3.00</b>	<b>0.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8711.1	3	3
ME8711.2	3	3
ME8711.3	3	3
ME8711.4	3	3
<b>ME8711</b>	<b>3.00</b>	<b>3.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C408 / ME8781 / Mechatronics Laboratory
<b>Semester</b>	VII
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8781.1</b>	Demonstrate the functions of 8085 microprocessor and their interface.
<b>ME8781.2</b>	Design and analyze the hydraulic, pneumatic and electrical circuits using real time applications.
<b>ME8781.3</b>	Simulate the various hydraulic, pneumatic circuits using automation studio software.
<b>ME8781.4</b>	Select suitable actuators and sensors and integrate them for real time applications.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8781.1	3	3	1	3	3	3	3	3	3	3	2	3
ME8781.2	3	3	1	3	3	3	3	3	3	3	2	3
ME8781.3	3	3	1	3	3	3	3	3	3	3	2	3
ME8781.4	3	3	3	2	3	2	2	3	3	3	2	3
<b>ME8781</b>	<b>3.00</b>	<b>3.00</b>	<b>1.50</b>	<b>2.75</b>	<b>3.00</b>	<b>2.75</b>	<b>2.75</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>3.00</b>

Course Code	PSO1	PSO2
ME8781.1	3	3
ME8781.2	3	3
ME8781.3	3	3
ME8781.4	3	3
<b>ME8781</b>	<b>3.00</b>	<b>3.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C409 / ME8712 / Technical Seminar
<b>Semester</b>	VII
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8712.1</b>	Enrich the communication skills for presenting any technical topic in their core area.
<b>ME8712.2</b>	Enhance the technical knowledge of recent trends in thermal engineering.
<b>ME8712.3</b>	Present the technical papers in design engineering in recent trends.
<b>ME8712.4</b>	Present the technical papers in manufacturing engineering in recent trends.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8712.1	3	3	2	1	2	1	0	1	2	2	0	2
ME8712.2	3	3	2	1	2	1	0	1	2	2	0	2
ME8712.3	3	3	2	1	2	1	0	1	2	2	0	2
ME8712.4	3	3	2	1	2	1	0	1	2	2	0	2
<b>ME8712</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>1.00</b>	<b>2.00</b>	<b>1.00</b>	<b>0.00</b>	<b>1.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>2.00</b>

Course Code	PSO1	PSO2
ME8712.1	3	2
ME8712.2	3	2
ME8712.3	3	2
ME8712.4	3	2
<b>ME8712</b>	<b>3.00</b>	<b>2.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C410 / MG8591 / Principles of Management
<b>Semester</b>	VIII
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>MG8591.1</b>	Explain the evaluation of management , function and roles of manager.
<b>MG8591.2</b>	Explain the different types of planning process and tools used for planning.
<b>MG8591.3</b>	Elaborate different organization structures and functions of human resource management.
<b>MG8591.4</b>	Illustrate the different theories of motivation and leadership.
<b>MG8591.5</b>	Describe the control techniques and role of technology in management.
<b>MG8591.6</b>	Generalize various Controlling techniques to maintain standards in Organizations.

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MG8591.1	2	0	0	1	0	2	1	2	3	2	3	3
MG8591.2	2	0	2	1	0	2	1	2	3	2	3	2
MG8591.3	2	2	2	1	1	2	1	2	3	2	3	2
MG8591.4	2	2	2	2	1	2	1	2	3	2	3	2
MG8591.5	2	2	2	2	2	2	1	2	3	2	3	2
MG8591.6	2	2	2	2	2	2	1	2	3	2	3	2
<b>MG8591</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>1.50</b>	<b>1.50</b>	<b>2.00</b>	<b>1.00</b>	<b>2.00</b>	<b>3.00</b>	<b>2.00</b>	<b>3.00</b>	<b>2.17</b>

Course Code	PSO1	PSO2
MG8591.1	2	0
MG8591.2	2	0
MG8591.3	2	1
MG8591.4	2	1
MG8591.5	2	2
MG8591.6	2	2
<b>MG8591</b>	<b>2.00</b>	<b>1.50</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C411 / MG8091 / Entrepreneurship Development
<b>Semester</b>	VIII
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>MG8091.1</b>	Discuss the types of entrepreneurship and the factors effecting entrepreneur
<b>MG8091.2</b>	Discuss about competencies and motivation required to become an entrepreneur
<b>MG8091.3</b>	Extend the business concepts towards a start – up considering all factors
<b>MG8091.4</b>	Explain the financial and accounting details needed for starting and running a small enterprise.
<b>MG8091.5</b>	Summarize the various supports available to start a small enterprise
<b>MG8091.6</b>	Summarize the resources available and skills required to establish an enterprise

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MG8091.1	0	0	0	0	0	0	0	0	0	2	3	0
MG8091.2	0	0	0	0	0	0	3	0	0	2	0	3
MG8091.3	2	1	0	0	0	2	0	0	0	2	0	0
MG8091.4	0	0	0	0	0	0	0	0	0	2	3	0
MG8091.5	0	0	0	0	0	0	3	0	0	2	3	3
MG8091.6	2	0	0	0	0	0	3	0	0	2	0	3
<b>MG8091</b>	<b>2.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>3.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>3.00</b>	<b>3.00</b>

Course Code	PSO1	PSO2
MG8091.1	0	0
MG8091.2	0	0
MG8091.3	2	0
MG8091.4	0	0
MG8091.5	0	0
MG8091.6	2	0
<b>MG8091</b>	<b>2.00</b>	<b>0.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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## B.E - Department of Mechanical Engineering

<b>Course Code / Course Name</b>	C412 / ME8811 / Project Work
<b>Semester</b>	VIII
<b>Regulation</b>	R-2017

Course code	Course Outcome
<b>Students will be able to</b>	
<b>ME8811.1</b>	Apply engineering knowledge to identify real world problem, design and analyze solution to core engineering problems and communicate and discuss the design solution among the engineering community

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ME8811.1	3	3	3	2	3	2	2	3	3	3	3	3
<b>ME8811</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>2.00</b>	<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>

Course Code	PSO1	PSO2
ME8811.1	3	3
<b>ME8811</b>	<b>3.00</b>	<b>3.00</b>

<b>1</b>	Slight	<b>2</b>	Moderate	<b>3</b>	Substantial
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Program : B.E. MECHANICAL ENGINEERING

**CO Mapping with POs - I to VIII SEMESTER**

Course Name	Course title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
HS8151	Communicative English	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	3.00	0.00	1.00	0.00	1.00
MA8151	Engineering Mathematics - I	3.00	3.00	3.00	3.00	3.00	0.00	0.00	0.00	3.00	0.00	1.00	1.00	3.00	3.00
PH8151	Engineering Physics	3.00	1.60	1.60	1.60	2.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.00	2.00
CY8151	Engineering Chemistry	3.00	1.33	2.00	2.50	2.33	1.00	1.83	1.00	1.80	2.00	2.00	2.33	3.00	2.33
GE8151	Problem Solving and Python Programming	3.00	2.00	2.00	1.67	3.00	1.00	1.33	1.00	1.50	1.25	3.00	3.00	1.00	1.00
GE8152	Engineering Graphics	3.00	3.00	3.00	3.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00	3.00	3.00	2.00
GE8161	Problem Solving and Python Programming Laboratory	3.00	2.00	1.00	1.00	2.00	1.00	0.00	0.00	2.00	0.00	0.00	1.00	3.00	2.00
BS8161	Physics and Chemistry Laboratory	3.00	1.60	1.50	1.00	1.00	1.00	1.00	2.00	1.00	1.00	0.00	1.00	1.00	0.00
HS8251	Technical English	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	3.00	0.00	1.00	0.00	1.00
MA8251	Engineering Mathematics - II	3.00	3.00	3.00	0.00	2.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	3.00	2.00
PH8251	Materials Science	3.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.00	0.00
BE8253	Basic Electrical, Electronics and Instrumentation Engineering	3.00	2.00	0.00	1.00	0.00	3.00	0.00	0.00	0.00	3.00	0.00	3.00	3.00	0.00
GE8291	Environmental Science and Engineering	1.00	1.00	0.00	0.00	0.00	2.00	2.00	1.17	0.00	1.00	0.00	1.00	1.00	0.00
GE8292	Engineering Mechanics	3.00	3.00	3.00	3.00	2.00	2.00	0.00	1.00	0.00	1.00	0.00	2.00	3.00	2.00
GE8261	Engineering Practices Laboratory	3.00	3.00	2.00	1.00	0.00	0.00	0.00	2.00	2.00	1.00	0.00	2.00	3.00	0.00
BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	2.50	2.00	2.00	0.00	0.00	1.80	1.00	1.50	2.00	1.00	1.00	2.00	2.50	0.00
MA8353	Transforms and Partial Differential Equations	3.00	2.83	1.83	2.00	1.00	0.00	1.20	1.00	1.40	1.00	2.67	1.00	3.00	1.00
ME8391	Engineering Thermodynamics	3.00	3.00	1.33	1.50	2.25	0.00	1.75	0.00	0.00	2.67	1.00	1.83	3.00	2.25
CE8394	Fluid Mechanics and Machinery	3.00	3.00	2.83	2.83	1.33	1.00	2.00	1.00	0.00	2.33	2.00	3.00	3.00	1.33
ME8351	Manufacturing Technology - I	3.00	3.00	2.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	2.00	3.00	1.00
EE8353	Electrical Drives and Controls	2.67	2.83	1.83	1.67	1.80	1.00	1.17	1.00	1.00	1.00	1.83	2.67	2.67	1.80
ME8361	Manufacturing Technology Laboratory - I	2.00	1.00	0.00	3.00	0.00	1.00	1.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00

Course Name	Course title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
ME8381	Computer Aided Machine Drawing	3.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	3.00	2.00
EE8361	Electrical Engineering Laboratory	3.00	3.00	1.00	3.00	3.00	0.00	2.00	0.00	2.00	2.00	2.00	3.00	3.00	3.00
HS8381	Interpersonal Skills / Listening & Speaking	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	2.00	3.00	0.00	1.00	0.00	2.00
MA8452	Statistics and Numerical Methods	2.50	3.00	2.67	2.33	2.17	0.00	2.00	0.00	3.00	0.00	2.00	2.00	2.50	2.17
ME8492	Kinematics of Machinery	3.00	3.00	3.00	2.00	1.00	1.00	2.00	0.00	0.00	0.00	2.00	2.00	3.00	1.00
ME8451	Manufacturing Technology – II	3.00	1.67	1.67	1.00	1.50	1.00	1.50	1.00	1.50	1.50	2.00	2.00	3.00	1.50
ME8491	Engineering Metallurgy	3.00	2.00	2.00	2.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	2.83	3.00	0.00
CE8395	Strength of Materials for Mechanical Engineers	3.00	3.00	3.00	1.00	1.50	0.00	1.00	0.00	0.00	0.00	0.00	1.00	3.00	1.50
ME8493	Thermal Engineering- I	3.00	3.00	2.00	1.00	0.00	2.00	1.00	1.00	0.00	0.00	0.00	1.00	3.00	2.00
ME8462	Manufacturing Technology Laboratory – II	3.00	2.40	2.50	0.00	2.20	1.00	1.80	0.00	2.00	0.00	0.00	2.20	3.00	2.20
CE8381	Strength of Materials and Fluid Mechanics and Machinery Laboratory	3.00	3.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	1.00	0.00	1.00	3.00	2.00
HS8461	Advanced Reading and Writing	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	2.00	3.00	0.00	1.00	0.00	2.00
ME8595	Thermal Engineering- II	3.00	3.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	3.00	2.00
ME8593	Design of Machine Elements	3.00	3.00	3.00	2.00	1.00	2.00	0.00	0.00	0.00	1.00	3.00	2.00	3.00	1.00
ME8501	Metrology and Measurements	3.00	3.00	3.00	2.00	0.00	2.00	0.00	0.00	0.00	1.75	2.00	2.00	3.00	0.00
ME8594	Dynamics of Machines	3.00	3.00	3.00	2.00	2.00	1.00	0.00	0.00	0.00	0.00	1.00	3.00	3.00	2.00
ORO551	Renewable Energy Sources	2.33	2.00	2.00	0.00	0.00	1.00	1.00	1.33	2.00	1.00	1.00	2.00	2.33	0.00
ME8511	Kinematics and Dynamics Laboratory	2.00	2.00	2.00	1.00	2.75	2.00	2.00	3.00	2.50	3.00	2.00	2.75	2.00	2.75
ME8512	Thermal Engineering Laboratory	3.00	3.00	3.00	0.00	1.00	1.00	1.00	2.00	2.00	2.00	0.00	1.00	3.00	2.00
ME8513	Metrology and Measurements Laboratory	3.00	2.00	2.00	0.00	2.00	0.00	0.00	2.00	2.00	1.00	0.00	2.00	3.00	2.00
ME8651	Design of Transmission Systems	3.00	3.00	3.00	3.00	2.00	2.00	1.00	2.00	2.00	3.00	2.00	3.00	3.00	2.00
ME8691	Computer Aided Design and Manufacturing	3.00	1.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	3.00	2.00
ME8693	Heat and Mass Transfer	3.00	3.00	2.50	2.67	2.50	1.00	1.00	0.00	1.00	2.00	2.00	2.83	3.00	2.50
ME8692	Finite Element Analysis	3.00	3.00	2.00	2.33	2.00	1.00	2.00	1.00	1.00	1.50	2.00	2.00	3.00	2.00
ME8694	Hydraulics and Pneumatics	3.00	3.00	1.67	1.67	2.00	2.00	2.00	2.00	0.00	1.00	0.00	2.00	3.00	2.00

