

2.6.2 Attainment of program outcomes, program specific outcomes and course outcomes are evaluated by the institution

S.No	Innovation and Creativity in teaching- learning	Page No
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1. Log Book (PO attainment)

**Remedial Action**

S.No	Date & Time	Description	Remarks
CT-1	17.01.18 (AN)	ONE UNIT, No. of Absent: 09 Pass %: 66.66%	
CT-2	10.02.18 (AN)	ONE UNIT, No. of Absent: NIL Pass %: 98%	
CT-3	03.03.18 (AN)	ONE UNIT, No. of Absent: 04 Pass %: 96%	
Model			
CT-IV	24.03.18 (AN)	ONE UNIT, AQ: 04, Pass %: 96%	
CT-V	31.03.18	ONE UNIT	

**Course Outcome Analysis**

S.No.	Course Outcomes	Target (%)	Attainment (%)
C01	CO1 → Suitable material selection for Mech. application	90%	50.3%
C02	CO2 → Improving the Material Properties using heat treatment	90%	68%
C03	CO3 → Design and analyze the mechanical properties, like strength, hardness, Impact strength, Fatigue, Creep etc.	70%	75%
C04	CO4 → Select suitable non-metallic material like composites to improve new type of composites for replace of Metal application.	80%	77%

**Justification for not attaining the target (%) for COs**

COs	Justification
C01	* No Text Book * Laziness * Improper Teaching/ Schedule
C02	Improvement. Need more Hand Work
C05, C05	Excellent → set to 80% for CT-IV
C03, C04	Pratic question little bit tough
C04, C03	

**Course End Survey**

	Cannot / Dis agree	Try / No opinion	Somewhat / Agree	Yes / Strongly Agree
1.	NIL	10%	40%	50%
2.	10%	40%	10%	40%
3.	10%	20%	20%	50%
4.	20%	10%	NIL	70%
5.	10%	40%	30%	20%
6.	NIL	10%	60%	30%
7.	NIL	NIL	50%	50%
8.	NIL	NIL	50%	50%
9.	NIL	10%	60%	30%
10.	NIL	10%	40%	50%
			16%	34%
			5%	46%

**Course Outcome Analysis**

Based on above survey

1) Cannot - 5% } the Engineering / Materials  
2) Try - 15% } & Metallurgy Subject have  
3) Somewhat - 34% } been reached to the student  
4) Yes - 46% } successfully

CO1 - 50.3%      PO1 → /3  
CO2 - 68%      PO2 → /3  
CO3 - 75%      PO3 → /2  
CO4 - 77%      PO4 → /2  
CO5 - 75%      PO6 → /3  
PO7 → /2  
PO8 → /3  
PO9 → /1

## 2.Course File

**Dhirajal Gandhi College of Technology**  
Salem Bengaluru Highway NH7,  
Sikkannampatty, Opposite to Airport, SALEM - 636 309,  
Ph (04290) 233333  
Approved by AICTE / Affiliated to ANNA University / Accredited by NAAC

**Course File**

Department : Mechanical  
Academic Year : 2019-20  
Course Code : ME5502  
Course Name : DESIGN OF MACHINE ELEMENTS  
Sem / Year / Section : V / II / A  
Batch : 2017-21  
Module Name : Design  
Module Co-ordinator Name : Dr. P. Sambikrishnan  
Course Co-ordinator / Instructor Name : Dr. P. Ramakrishnan / N. Parmanandavelu

Dhirajal Gandhi College of Technology, Salem

**COURSE FILE**

S.NO	PARTICULARS	PAGE NO
1	Course Data Sheet	1
2	Vision & Mission of the Institution and Department	
3	PEOs, POs, PSOs, COs	
4	COs mapping with POs	
5	Syllabus	
6	Student's Name List	LOG BOOK
7	Class Time Table	
8	Lesson Plan	
9	Books referred for each unit	
10	University Question Paper	2
11	Assignment/Tutorial Question Papers with answer key	3
12	Cycle Test/Model Exam Question Papers with answer key	4
13	End Semester Examination Question	5
14	Attainment of CO Calculation	6
15	Class Record in Complete Form	7
16	Class Notes	8
17	Answer Sheets, Tutorial & Assignments Samples	9

*Handwritten notes:*  
Staff Incharge: Parimala Heb Mach  
Principal: [Signature]

## 3.Lab Manual

**DHIRAJAL GANDHI COLLEGE OF TECHNOLOGY**  
Salem Bengaluru Highway NH7, Sikkannampatty, Opposite to Airport, Salem - 636 309, Ph (04290) 233333  
Approved by AICTE / Affiliated to ANNA University / Accredited by NAAC

**DEPARTMENT OF MECHANICAL ENGINEERING**

**ED5162 Advanced Analysis and Simulation Laboratory**

NAME : Udaya Mohan K  
REG. NO. : 2019ME02009  
BRANCH : Mech SEM & SECTION : VI - G

**Academic Year 2018 - 19 (ODD Sem)**

Dep. Chair: Dr. S. Ramani (Ph.D., IIT Madras)  
Dep. Head: Dr. P. Sambikrishnan (Ph.D., Anna University)

**DHIRAJAL GANDHI COLLEGE OF TECHNOLOGY**  
(Approved by AICTE and Affiliated to Anna University)  
Department of Mechanical Engineering

**College**

**Vision**

- To improve the quality of human life through multi-disciplinary programs in Engineering, Architecture and management that are internationally recognized and would facilitate research work to incorporate social, economic and environmental development.

**Mission**

- To create a vibrant atmosphere that creates competent engineers, innovators, scientists, entrepreneurs, academicians and thinkers of tomorrow.
- To establish centers of excellence that provides sustainable solutions to industry and society.
- To enhance capability through various value added programs so as to meet the challenges of dynamically changing global needs.

**Department**

**Vision**

- To provide the highest quality in engineering education and establish the state of the art research for innovation that will enable the students to excel in their field.

**Mission**

- To achieve high ethical and professional standards through effective teaching and learning process.
- To provide infrastructure for research and development activities.
- To offer consultancy services for the industries.
- To provide guidance to neighborhood and cultivate the spirit of entrepreneurship.

**Program Educational Objectives (PEOs)**

PEO1 To prepare graduates who will create new ways to meet society's needs with their updated knowledge of Mechanical Engineering.

PEO2 To develop the ability among students to **synthesize data and technical concepts** for application to **product design**.

PEO3 To provide opportunity for students to work as part of teams on multidisciplinary projects.

PEO4 To provide students with a sound foundation in the mathematical, scientific and engineering fundamentals necessary to **formulate, solve, and analyze** engineering problems and to prepare them for graduate studies.

PEO5 To promote student's awareness of life-long learning and to introduce them to professional ethics and codes of professional practice.

**DHIRAJAL GANDHI COLLEGE OF TECHNOLOGY**  
(Approved by AICTE and Affiliated to Anna University)  
Department of Mechanical Engineering

**ME671 Simulation and Analysis Laboratory**

**Course Objectives (COs)**

- To give exposure to software tools needed to analyze engineering problems.
- To expose the students to different applications of simulation and analysis tools.
- To enlighten the students in to multi body dynamics

**Course Outcomes (COs)**

CO1	Apply Basic mathematical concept of FEA in to software
CO2	Expert in analyzing various continuums in Mechanical and structural engineering field
CO3	Analyze the Mechanical elements by economically and productively.
CO4	Apply the concepts of FEA for Research and Development
CO5	Identifying and rectifying the error in any type Mechanism using simulation concept

**Program Outcomes (POs)**

PO1	a) Apply the knowledge of mathematics, science, engineering fundamentals to the solution of complex problems in Mechanical Engineering.
PO2	b) Identify, formulate, research literature, and analyze complex Mechanical Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	c) Apply design tools for complex Mechanical engineering problems and design within components or processes that meet it is a specified needs with appropriate consideration for the public health and safety, and the cultural, social, and environmental considerations.
PO4	d) Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions related to Mechanical Engineering.
PO5	e) Create, select and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complete Mechanical engineering activities with an understanding of the limitations, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO6	f) Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	g) Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for, sustainable development.
PO8	h) Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	i) Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	j) Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to effective presentations, and give and receive clear instructions.
PO11	k) Demonstrate knowledge and understanding of E & E engineering and leadership in a team to manage projects and in multidisciplinary environments.
PO12	l) Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broader context of technological change.

**Program Specific Outcomes (PSOs)**

PSO1 a) Ability of the graduates to perform in advanced machining by output of schooling thru's internship between institutes - industry.

PSO2 q) Graduates will demonstrate the ability to design a mechanical system using complex modeling and analysis software thru's continuing education.

PSO3 r) Graduates will be exposed to industrial practices and acquire the ability to serve in core industry.

**COs Vs Pos**

CO.No	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13
CO1		✓	✓			✓	✓	✓	✓				
CO2						✓	✓	✓	✓				
CO3					✓	✓	✓	✓	✓				
CO4					✓	✓	✓	✓	✓				

**Pos Vs Course**

Name of the Course	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13
Simulation and Analysis Laboratory		✓			✓		✓	✓	✓				

### 3.PAC Meeting Analysis



### 4.Course End Survey

**COURSE END SURVEY**

Name of the Student : BOOPATHI  
 Register No : 16052114011  
 Course Code and Course Name : ME6305 Engineering Materials Metallurgy  
 Semester : VI  
 Name of the Faculty Handled : Dr.P.PARANDAMAN / Mr.N.PANNEERSELVAM

1.	Can you select a suitable steel for a specific application?	Cannot	Try	Some what	Yes
2.	Can you analyze a material under microscopic point of view?	Cannot	Try	Some what	Yes
3.	Can you identify suitable heat treatment process for a given material and application?	Cannot	Try	Some what	Yes
4.	Can you select suitable non-ferrous material for a given application?	Cannot	Try	Some what	Yes
5.	Do you try the replacing of metal into non-metallic material?	Donot	Try	Some what	Yes
6.	Can you do lab test for to find the mechanical properties of the material?	Disagree	No opinion	Agree	Strongly Agree
7.	Use of Power Point Projector (PPT) is class room lecturing is effective and appropriate.	Disagree	No opinion	Agree	Strongly Agree
8.	Is the laboratory subject (SOM lab) is useful for this subject?	Disagree	No opinion	Agree	Strongly Agree
9.	The evaluation methods used in this course are fair and appropriate	Disagree	No opinion	Agree	Strongly Agree
10.	There is close agreement between the course outcomes and what is actually covered	Disagree	No opinion	Agree	Strongly Agree
11.	What changes can be made to improve the course content? Suggest:	(i) <u>Activities to be done</u> (ii) (iii)			

## 5. Log book Module coordinator review

**Syllabus**

**Mechanical Engineering**

**OBJECTIVES**

1. To provide the highest quality in engineering education and establish the status of the university for innovation that will enable the students to stand in their field.

**MISSION**

To provide the highest quality in engineering education and establish the status of the university for innovation that will enable the students to stand in their field.

**VISION**

To provide the highest quality in engineering education and establish the status of the university for innovation that will enable the students to stand in their field.

**PROGRAM EDUCATIONAL OBJECTIVES (PEOs)**

PEO1: To provide graduates who will create new ways to meet society's needs with their applied knowledge of Mechanical Engineering.

PEO2: To develop the ability among students to synthesize data and technical concepts for application to product design.

PEO3: To provide opportunities for students to work as part of teams on multidisciplinary projects.

PEO4: To provide students with a sound foundation in the mathematical, scientific and engineering fundamentals necessary to formulate, solve, and analyze engineering problems and to prepare them for graduate studies.

PEO5: To promote student's involvement of life-long learning and to introduce them to professional ethics and codes of professional practice.

**DEPARTMENT**

**Mechanical Engineering**

**MISSION**

To provide the highest quality in engineering education and establish the status of the university for innovation that will enable the students to stand in their field.

**VISION**

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**PROGRAM EDUCATIONAL OBJECTIVES (PEOs)**

PEO1: To provide graduates who will create new ways to meet society's needs with their applied knowledge of Mechanical Engineering.

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PEO5: To promote student's involvement of life-long learning and to introduce them to professional ethics and codes of professional practice.

**Program Outcomes (POs)**

**PO1** Apply the knowledge of mathematics, science, engineering fundamentals to the solution of complex problems in Mechanical Engineering.

**PO2** Identify, formulate, research literature, and analyze complex Mechanical Engineering problems involving substantial components using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design solutions for complex Mechanical Engineering problems and design systems or components or processes that meet it is specified needs with appropriate consideration to the public health and safety, and the cultural, social, and environmental considerations.

**PO4** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions related to Mechanical Engineering.

**PO5** Conduct ethical and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex Mechanical engineering activities with an understanding of the limitations.

**PO6** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

**PO7** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for, sustainable development.

**PO8** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO11** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**PO12** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broader context of technological change.

**Program Specific Outcomes (PSOs)**

**PSO1** Ability of the graduates to perform in advanced machining by control of scheduling their's hierarchy between machine - industry.

**PSO2** Graduates will demonstrate the ability to design a mechanical system using complex modeling and analysis software their's continuing education.

**PSO3** Graduates will be exposed to industrial practices and acquire the ability to serve in core industry.

**MAPPING OF COURSE OUTCOMES TO POs & PSOs**

Course/Units	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Apply the Concepts of Design Technology in Mechanical Engineering - Submodule	2	5	5										1	1	1
Design Technology in Mechanical Engineering - Submodule	2	1	5										1	1	1
Design Technology in Mechanical Engineering - Submodule	2	3	1										1	1	1
Design Technology in Mechanical Engineering - Submodule	2	1	3										1	1	1
Design Technology in Mechanical Engineering - Submodule	1	2	3										1	1	1

**MAPPING OF COURSE TO POs & PSOs**

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Design Technology	2	2	2										1	1	1

## Course Exit Survey