

B.E. (Mechanical Engineering)

PROJECT WORK

SHIVAJI UNIVERSITY, KOLHAPUR,

Structure of B.E. (MECHANICAL ENGINEERING) Semester VII

WITH EFFECT FROM THE ACADEMIC YEAR JUNE/JULY 2016-2017

Sr. No.	Course Title	Teaching Scheme				Examination Scheme				
		L	T	P	Total Hrs.	TP	TW	OE	POE	Total Marks
1	Refrigeration and Air Conditioning	3	-	2	5	100	25	-	25	150
2	Mechanical System Design	3	-	2	5	100	25	25	-	150
3	Finite Element Analysis	3	-	2	5	100	25	-	-	125
4	Elective I	3	-	2	5	100	25	-	-	125
5	Elective II	3	-	2	5	100	25	-	-	125
6	Industrial Training @	-	-	-	0	-	50	-	-	50
7	Project Phase -I	-	-	2	2	-	50	25	-	75
Total		15	00	12	27	500	225	50	25	800

Sr. No.	Elective I	Elective II
1	Experimental Mechanics	Total Quality Management
2	Human and Professional Ethics	Industrial Product Design
3	Automobile Engineering	Advanced Forming Processes
4	Computational Fluid Dynamics	Design of Thermal Systems
5	Process Equipment Design	Smart Materials
6	Advanced Foundry Processes	Design for Sustainability
7	Introduction to Aircraft Systems	Flexible Manufacturing Systems

L: Lecture, T: Tutorial, P: Practical, TP: Theory Paper, TW: Term Work, OE: Oral Exam. , POE: Practical and Oral Exam.

@ Industrial training of minimum two (2) weeks should be done after T.E. (II) in summer vacation and it's assessment will be done in B.E. (I) based on report submitted Work load of the assessment can be assigned to the project seminar guide.

**SHIVAJI UNIVERSITY, KOLHAPUR,**

**Structure of B.E. (MECHANICAL ENGINEERING) Semester VIII**

**WITH EFFECT FROM THE ACADEMIC YEAR JUNE/JULY 2016-2017**

Sr. No.	Course Title	Teaching Scheme				Examination Scheme				
		L	T	P	Total Hrs.	TP	TW	OE	POE	Total Marks
1	Mechatronics	3	-	2	5	100	25	25	-	150
2	Energy and Power Engineering	3	-	2	5	100	25	-	-	125
3	Noise and Vibration	3	-	2	5	100	25	25	-	150
4	Elective III	3	-	2	5	100	25	-	-	125
5	Elective IV	3	-	2	5	100	25	-	-	125
6	Project Phase -II	-	-	4	4	-	50	75	-	125
<b>Total</b>		15	00	14	29	500	175	125	00	800

Sr. No.	Elective III	Elective IV
1	Industrial Engineering	Industrial Automation and Robotics
2	Production Management	Cryogenics
3	Fracture Mechanics	Enterprise Resource Planning
4	Reliability Engineering	Micro Electro Mechanical Systems
5	Advanced I.C. Engine	Advanced Refrigeration
6	Machine Tool Design	Tribology
7	Design of Aircraft Systems	Precision Engineering

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**SHIVAJI UNIVERSITY, KOLHAPUR,**  
**B.E. (Mechanical Engineering) Semester VII**  
**7. PROJECT PHASE- I**

**Teaching Scheme:**  
Practical: 2 Hrs/Week/Batch

**Examination Scheme:**  
Term Work: 50 Marks  
Oral Exam: 25 Marks

**Course Objectives:**

The course aims to:

1. Embed the skill in group of students to work independently on a topic/ problem/ experimentation selected by them and encourage them to think independently on their own to bring out the conclusion under the given circumstances of the curriculum period in the budget provided with the guidance of the faculty.
2. Encourage creative thinking process to help them to get confidence by planning and carrying out the work plan of the project and to successfully complete the same, through observations, discussions and decision making process.

**Course Outcomes:**

Upon successful completion of this course, the student will be able to:

1. Improve the professional competency and research aptitude in relevant area.
2. Develop the work practice in students to apply theoretical and practical tools/techniques to solve real life problems related to industry and current research.

**Project Phase I Load:**

A batch of maximum three groups of four to five students per group, shall work under one Faculty member of department. The group of one student is strictly not allowed.

**Project Phase I Definition:**

The project phase I work can be a design project / experimental project and or computer simulation project on Mechanical engineering or any of the topics related with Mechanical engineering stream. The project phase I work is allotted in groups on different topics.

The students groups are required to undertake the project phase-I during the seventh semester and the same is continued in the eighth semester (Phase-II). Project Phase-I consists of reviews of the work carried earlier and the submission of preliminary report. Report should highlight scope, objectives, methodology, approach and tools to be used like software and others, outline of project and expected results and outcome along with timeframe.

The project phase I work is to be extended for project phase II at B. E. (Mech.) Sem. VIII with same group working under guidance of same Faculty member assigned for project phase I.

**Project Phase I Term Work:**

The term work under project submitted by students shall include

1. Work Diary: Work Diary maintained by group and countersigned by the guide weekly. The contents of work diary shall reflect the efforts taken by project group for
  - a. Searching suitable project work
  - b. Brief report preferably on journals/ research or conference papers/ books or literature surveyed to select and bring up the project.

- c. Day to day activities carried out related to project work for entire semester.
- d. Synopsis.

The group should submit the synopsis in following format


- i. Title of Project
  - ii. Names of Students
  - iii. Name of Guide
  - iv. Relevance
  - v. Present Theory and Practices
  - vi. Proposed work
  - vii. Expenditure
  - viii. References
2. The synopsis shall be signed by the each student in the group, approved by the guide and endorsed by the Head of the Department
  3. Presentation: The group has to make a presentation in front of the Faculty members of department at the end of semester.

#### **Project Phase I Report Format:**

Project Phase I report should be of 25 to 30 pages (typed on A4 size sheets). For standardization of the project phase I reports the following format should be strictly followed.

1. Page Size: Trimmed A4
2. Top Margin: 1.00 Inch
3. Bottom Margin: 1.32 Inches
4. Left Margin: 1.5 Inches
5. Right Margin: 1.0 Inch
6. Para Text: Times New Roman 12 Point . Font
7. Line Spacing: 1.5 Lines
8. Page Numbers: Right Aligned at Footer. Font 12 Point. Times New Roman
9. Headings: Times New Roman, 14 Point , Bold Face
10. References: References should have the following format  
For Books: "Title of Book", Authors, Publisher, Edition  
For Papers: "Title of Paper, Authors, Journal/Conference Details, Year

#### **Important Notes:**

- Project group should continue maintaining a diary for project and should write (a) Book referred (b) Company visited (c) Person contacted (d) Computer work done (e) Paper referred (f) Creative thinking.
  - The Diary along with Project Phase I Report shall be assessed at the time of oral examination
  - One copy of the report should be submitted to Institute/ Department, One copy to Guide and one copy should remain with each student of the project group.
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**SHIVAJI UNIVERSITY, KOLHAPUR**  
**B.E. (Mechanical Engineering) Semester VIII**  
**6. PROJECT PHASE- II**

**Teaching Scheme:**

Practical: 4 Hrs/Week/Batch

**Examination Scheme:**

Term Work: 50 Marks

Oral Exam: 75 Marks

**Course Objectives:**

The course aims to:

1. Embed the skill in group of students to work independently on a topic/ problem/ experimentation selected by them and encourage them to think independently on their own to bring out the conclusion under the given circumstances of the curriculum period in the budget provided with the guidance of the faculty.
2. Encourage creative thinking process to help them to get confidence by planning and carrying out the work plan of the project and to successfully complete the same, through observations, discussions and decision making process.

**Course Outcome:**

Upon successful completion of this course, the student will be able to

1. Improve the professional competency and research aptitude in relevant area.
2. Develop the work practice in students to apply theoretical and practical tools/techniques to solve real life problems related to industry and current research.

**Project Phase II Load:**

A batch of maximum three groups of four to five students per group, shall work under one Faculty member of department. The group of one student is strictly not allowed. Same groups of Seventh Semester shall work under same faculty member of department.

**Project Phase II Definition:**

Project phase-II is a continuation of project phase-I started in the seventh semester. Before the end of the eighth semester, there will be two reviews, one at start of the eighth semester and other towards the end. In the first review, progress of the project work done is to be assessed. In the second review, the complete assessment (quality, quantum and authenticity) of the thesis is to be evaluated. Both the reviews should be conducted by guide and Evaluation committee. This would be a pre qualifying exercise for the students for getting approval for the submission of the thesis. The final evaluation of the project will be external evaluation.

**Project Phase II Term Work:**

The term work under project submitted by students shall include

1. Work Diary: Work Diary maintained by group and countersigned by the guide weekly. The contents of work diary shall reflect the efforts taken by project group for
  - a. Brief report preferably on journals/ research or conference papers/ books or literature surveyed to select and bring up the project.
  - c. Brief report of feasibility studies carried to implement the conclusion.
  - d. Rough Sketches/ Design Calculations/ Testing reports/ Experimentation results.



### Project Report:

Project report should be of 50 to 60 pages (typed on A4 size sheets). For standardization of the project reports the following format should be strictly followed.

1. Page Size: Trimmed A4
2. Top Margin: 1.00 Inch
3. Bottom Margin: 1.32 Inches
4. Left Margin: 1.5 Inches
5. Right Margin: 1.0 Inch
6. Para Text: Times New Roman 12 Point. Font
7. Line Spacing: 1.5 Lines
8. Page Numbers: Right Aligned at Footer. Font 12 Point Times New Roman
9. Headings: Times New Roman, 14 Point Bold face
10. Certificate: All students should attach standard format of Certificate as described by the department. Certificate should be awarded to batch and not to individual student. Certificate should have signatures of Guide, Head of Department and Principal /Director
11. Index of Report:
  - i) Title Sheet
  - ii) Certificate
  - iii) Acknowledgement
  - iv) Table of Contents.
  - v) List of Figures
  - vi) List of Tables
  1. Introduction
  2. Literature Survey/ Theory
  3. Design/ Fabrication/ Production/ Actual work carried out for the same and Experimentation.
  4. Observation Results
  5. Discussion on Result and Conclusion
12. References: References should have the following format  
**For Books:** "Title of Book", Authors, Publisher, Edition  
**For Papers:** "Title of Paper, Authors, Journal/Conference Details, Year
13. The Project report shall be signed by the each student in the group, approved by the guide and endorsed by the Head of the Department
14. Presentation: The group has to make a presentation in front of the faculty of department at the end of semester.

### Important Notes:

- Project group should continue maintaining a diary for project and should write (a) Books referred (b) Company visited (c) Person contacted (d) Computer work done (e) Paper referred (f) Creative thinking.
- The Diary along with Project Report shall be assessed at the time of oral examination
- One copy of the report should be submitted to Institute/ Department, One copy to Guide and one copy should remain with each student of the project group.