



C.U.SHAH UNIVERSITY – WADHWANCITY

FACULTY OF: - Technology and Engineering (Diploma Engineering)

DEPARTMENT OF: - Mechanical Engineering

SEMESTER: - V **CODE:** - 2TE05PRO1

NAME OF SUBJECT: -Project-I

Teaching & Evaluation Scheme:-

Subject Code	Name of the Subject	Teaching Scheme				Credits	Evaluation Scheme							
		Th	Tu	Pr	Total		Theory				Practical (Marks)			Total
							Sessional Exam		University Exam		Internal		University	
							Marks	Hours	Marks	Hours	Pr/Viva	TW	Pr	
<u>2TE05PRO1</u>	Project-I	0	0	4	4	2	--	--	--	--	--	50	50	100

Objective: -

- To develop the skills and ability to work in small groups.
- To apply the concepts of various engineering subjects to real life problems.
- Perform various tasks like market survey, industrial visits, creative and innovative techniques, etc to identify project.
- Draw details and assembly production drawings.
- Plan material and processes optimally and economically
- Develop sense of environmental responsibility.

Prerequisites: -

Fundamental knowledge of all subjects studied before.

Rationale:-

The student is introduced to various aspects of mechanical engineering at this stage. The project gives him an opportunity to get some hands on practical experience on different subjects covered so far. This provides a practical experience to the student about the different theoretical topics which are studied at length during the course so far. The selection of project topics will be based on following guidelines. The student can choose a single project for the entire third year or can change his / her project in next semester.

Course outline:-

Students will choose a **project topic** (any one) of their choice from the following three categories.

Sr. No.	Categories of Project
1	Manufacturing Type Project: To select subject e.g. screw jack, drill jig etc. Preparation of manufacturing drawings and detail drawings of any assembly studied Machine drawing subject eg. screw jack etc assigning suitable tolerances at required places. own guidance, supervision and observation. Assembling the components and form the required assembly. Note: <ul style="list-style-type: none"> • Student may select any other assembly outside text book. • The assembly should contain min 5 to max 10 components; excluding std parts like nut-bolts. • The overall size of the assembly should be within min 4inch³ to max 1ft³ approx. • The components may be made out of steel, wood or any other durable material. The project model needs to be a working model at least to the level of demonstration.

2	<p>Thesis Type Project: Selecting a topic, an assembly, a unit, a device, a component etc. which can be examined from technical respective. Eg. fan, gearbox, Oil seals, bearings, screw jacks, locks, cutting tools, pipe joints, welding methods, threaded fasteners, couplings, belts, chains, domestic mixers, refrigerators, ergonomics, lubrication, wear, friction etc. Collecting information related to the selected subject from the point of view of its working, design features, specifications, manufacturers, manufacturing methods, suppliers, costing, design types, feature comparison, science technique-principal involved therein, related statistical data, failure studies, origin, history involved etc. whichever is applicable.</p> <p>Note:</p> <ul style="list-style-type: none"> The student may need to visit places to collect data, observe manufacturing processes, collect information from different sources like library books, internet, manufacturers, associated people etc. Max 2 students can form a group for thesis project.
3	<p>Special Purpose Project: To select ANY TECHNICAL TOPIC of your choice, but essentially covering manufacturing activity. Only write-up is not permitted.</p> <p>Note:</p> <ul style="list-style-type: none"> The topic will be finalized only after discussing the scope with concerned staff. The aspects covered in two other types above; should be mainly applicable to the selected topic.

Term Work:

A consolidated report on the project work (complete or incomplete) will be prepared at the end of each semester. The extent of written work will vary, depending on the related manufacturing work (if any) that is involved with the project

Suggested List of Exercises

Sr. No.	Practical Exercises	Number of Hours
1	Preparatory Activities Objectives of learning this subject and list of attitude dos and don't	04
2	Basic Techniques Explain all basic techniques, Identify at least five needs which require product development/modification. Each student will identify separately, Given the live product/case (to be assigned by teacher), generate at least ten questions for each following basic techniques leading to identify project/problem: Productivity, Quality, Cost/waste reduction, Value analysis. Carry out market survey for given product, Prepare cause and effect diagram (Fishbone diagram) for given data, Perform SWOT analysis for self, Briefly explain and present 5-S and 7-S frame work, Visit an industry and prepare the report on project which can be undertaken for manufacturing at institute place and/or live problems which can be solved at industry place, Carry out literature survey for basic techniques.	08
3	Identification of Problem/Project Student will practice and will identify at least one problem/ project and will prepare following: Details and assembly production drawings.(For manufacturing type project). OR Define live problems at industry place. Also prepare necessary drawings for live problem solution at industry place, Bill of material, Cost estimation of parts and complete project.	04
4	Draft Project Report: Prepare draft project report and include following: Questions generated, market survey carried out, fishbone diagram, self SWOT analysis, tutorials, examples, 5-S and 7-S brief techniques, industrial visit outcome, literature survey. Title of project, Details and assembly production drawings prepared with use of software.(AutoCAD/ProE, CREO, etc.OR Description of live problem to be solved at industry place. Bill of material, Cost estimation of parts and complete project.	12

Notes:

- Prepare project report with MS Office with following guidelines.
Page: A4 (On One Side).
Margin: Top :15mm.
Bottom :15mm.
Right :15mm.
Left :30mm.
Font: Arial.
Size: 12-Bold, Content 12,
Spacing 18 Points,
Header: Title Of The Project, Page Number On Top Right.
Footer: Academic Year, Short Name Of The Institute.
- Term work (hard copy) should also include experience logbook duly certified by workshop instructors (as applicable), Industry/Market/Field personnel (as applicable) and subject teachers.

Annexure- II

PROJECT TITLE

<1.5 line spacing>

A PROJECT REPORT

<Italic>

submitted to

C. U. SHAH UNIVERSITY

<Bold>

in partial fulfillment for the award of the diploma

<1.5 line spacing><Italic>

IN

MECHANICAL ENGINEERING

<Bold>



DEPARTMENT OF MECHANICAL ENGINEERING

<Bold>

C. U. SHAH UNIVERSITY

<Bold>

Wadhwancity

GUJARAT, INDIA

<Bold>

MAY - 2015

<Bold>

ACKNOWLEDGEMENT

One page maximum. Times New Roman and Font Size 12

ANNEXURE - III

CERTIFICATE

< Size – 24>

THIS IS TO CERTIFY THAT

SHRI / KUM.....

HAS SATISFACTORILY COMPLETED HIS / HER

TERMWORK IN THE SUBJECT

PROJECT - I (<SUBJECT CODE >)

WITHIN THE PRESCRIBED TIME LIMIT AND PRESCRIBED BOUNDARY.

DATE OF SUBMISSION:

INSTITUTE GUIDE

HEAD OF DEPTT.

All < Size – 14>

ANNEXURE-IV

SUGGESTED LIST OF ACTIVITIES.

- Preparing and maintaining logbook as per Annexure-V.
- Finalization of assembly and detail drawings (This must be production drawings with suitable scale along with dimensions, tolerances, surface roughness symbols, heat treatment/ other treatments required, material , quantity per assembly for components drawings ,etc.
- Preparing master schedule and work allocation matrix in group.
- Preparation of bill of material.
- Collecting data and specifications of available resources-mainly material and machineries/equipment/facilities and tools.
- Make or Buy decision.
- Identifying and locating required resources like material, machineries/equipments/facilities and tools.
- Estimation
- Preparation of list of references.
- Preparation of project report.
- Presentation.

ANNEXURE-V

FORMAT FOR LOG BOOK

[illegible]