

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN MECHANICAL ENGINEERING

Semester – V

Subject Code : 2351909

Subject Name : Project - I

Laboratory Experiences:

Experience Type	Experience Number	Description of Laboratory Experience	Hrs.
Preparatory Activity	01	<ol style="list-style-type: none">1. Appreciate the objectives of learning this subject.<ol style="list-style-type: none">a. To study industrial environment , manufacturing service / transformation processes and systems.b. To develop engineering and innovative thinking patterns.c. To identify problem/s-problem area/s and/or to identify area/s for improvement of select organization.d. To suggest probable solution/s for identified problem/s-area/s and /or to suggest probable strategies/solutions for identified area/s of improvement.2. Student will prepare report on applied fundamentals required for selected organization.	04
STUDY & PRESENTATION	02	Case study and power point presentation: search, study and present to batch an inspirational case which focuses on successful innovation.	04
	03	Attitude-Do's and Don'ts, appreciate need and practice of these in context of industrial environment and culture.	02
	04	<p>Understand basic theories, their span & importance for study of organizational environment /situation / problems /etc. in context of achieving subject objectives. Basic theories includes following.</p> <p>(It is expected that student uses these theories to develop their engineering and innovative thinking pattern, i.e. student uses these theories as their thought drivers to identify/define problems.)</p> <ol style="list-style-type: none">1. Productivity, Innovation, Cost/waste reduction, Safety, Humanity, Ecology/Environment and Quality. (PICSHEQ).	12

		<ol style="list-style-type: none"> 2. Cause and effect diagram (Fish bone diagram). 3. Critical Path Method /Pre-Evaluation Review Technique (CPM / PERT). 4. 5-S Strategies. 5. 7-S Framework. 6. SWOT analysis. 7. Value Analysis. 8. Check sheets. 9. Flow diagram. 10. Other/s included by concerned teacher. <p>After understanding basic theories, student will study, analyse and prepare reports for given separate related cases/problems/tutorials/etc.(separate case / problem / tutorial /etc.-as suitable for each basic theory) covering all basic theories.</p>	
	05	<p>Questioning & reasoning techniques / strategies/approaches and problem solving cycle.</p> <p>After understanding this, student will study, analyse and prepare list of probable questions leading to probable problem solutions for given related case/problem/etc.</p> <p>The objective of this experience is to develop engineering and innovative thinking patterns and developing the attitude of enquiry . Students can use thought drivers.</p>	04
SHODH YATRA	06	<p>Visit :</p> <p>Visit one organisation. (Organization means : Industry / Research Organization / Govt. Organization / socio-technical / technology transfer / application or action research based issues and according to the need of time for solving real life problems.)</p> <ol style="list-style-type: none"> 1. Student will prepare report including following. <ol style="list-style-type: none"> a. Brief details of organisation visited. b. Type, location, products / processes / systems / services, rough layout, human resource, etc. of organisation. c. Details, description and specifications of machineries / processes / systems / devices / set up / etc. observed. d. literature research related to the corresponding organization in context of objectives of this subject. e. Study in context of basic theories using thought drivers. (Refer experience number 03). f. Questions / reasons / problems(real life) identified by students. Use of questioning & reasoning techniques is suggested. 	18

		<p>g. literature research related to the corresponding probable problems / innovations .</p> <p>h. Improvement areas suggested by students. Use of problem solving cycle is suggested.</p> <p>2. Student will also prepare logbook for visit duly certified by Organizational personnel and Institute's Teacher/s. Suggested format is given at Annexure-I.</p> <p>3. It is required that concerned teacher also visit / follow-up the organization/students.</p>	
	07	<p>Prepare and present IDP (Industry Defined Problem) from Shodh Yatra.</p> <p>Student will prepare report and present power point presentation justifying IDP. Student will also submit IDP in defined format.</p> <p>The format for IDP is given at Annexure-II. This can be further modified by the institute.</p>	12
TOTAL			56

Notes:

1. This term work (Project – I, 2351909) has to be preserved and has also to be submitted in semester VI along with subject Project-II.
2. Prepare the term work with A4 size paper,30mm left margin,20mm top, bottom and right margins, Arial font of size 14 for titles and size 12 for detail content, single spacing, prepared in MS Word, printed on both side of paper.
3. Term work report of student of regular mode should exclude distance learning manual, photocopies, pre-printed content, copy of previous work carried out, etc. Focus should be on developing the term work as an original effort of students.
4. Term work (hard copy) should also include experience logbook as per experience number 5(2)-Annexure –I.
5. Semester 5th, teaching scheme is 0-0-4, with 4 credits worth of 150 marks(Out of 150 marks, 50 marks are to be given for Problem Definition. The college, through internal evaluation, will assess the Industry Defined problems, submitted by students . The remaining 100 marks are for the practical exam, to be conducted by the University.)
6. Term work report content should also include following for applicable experience.
 - a. Experience description / data and objectives.
 - b. Skill/s which is / are expected to be developed in student after completion of experience.
 - c. Special / additional task assigned by teacher/s , if any.
7. Each institute will send all the problem definitions to GTU.

8. Students are required to strictly follow the rules and regulations (including safety) issued by institute and organisations. Organizational visit/s are also at the own risk of students.
9. Number of students per group can be decided by the institute / concerned teacher.
10. Suggested guidelines are :
 - a. Facilitation: Students may contact UDISHA Club Coordinator / Teacher / Department / Principal or Chairman / TPO of their Sankul for arranging “Shodh-Yatra” to the organization.
 - b. Any student can go to any organization in or outside his/her Sankul. There exist 25 GTU Sankuls across the state at present. Student can also choose an organization not covered / mentioned in GTU innovation council or Sankuls.
 - c. Students can also take interdisciplinary projects.
 - d. The problem summery may be a concise description of the organization related technical issues which can state the problem, which the student has found out while visiting the organization.
 - e. The problem statement has to be well defined in 3-5 pages with detailed facts and figures as and when possible. The description can have figures / inputs from floor persons from organization / parameters related to specific domain of technology.
 - f. The students while interacting with organization persons have to note down the expected out comes (in 1-2 page) from that particular organization due to the proposed innovation either in product or processes. This will gauge the organizational needs and students progress while working on the final year project.
 - g. The students are advised to do some literature research related to the corresponding problem / innovation both before and after visiting the organization / MSME during summer vacation. They have to suggest some suggestions about the issues based on literature research of corresponding problems / projects in feasible cases.
 - h. For any query please mail to gtu_innovation_council@gtu.edu.in.

ANNEXURE – I

SUGGESTED FORMAT FOR LOG BOOK

NAME OF STUDENT			
ENROLLMENT NUMBER OF STUDENT			
CONTACT NUMBER :			
EMAIL ID			
RESIDENTIAL ADDRESS			
NAME AND ADDRESS OF ORGANISATION , INCLUDING NAME AND CONTACT DETAILS OF CONTACT PERSON			
ACTIVITIES			
DATE	ACTIVITIES CARRIED OUT	INITIAL OF ORGANISATION REPRESENTATIVE	INITIAL OF CONCERN TEACHER

ANNEXURE – II

FORMAT FOR IDP

INDUSTRY DEFINED PROBLEM / PROJECT (IDP) DESCRIPTION FORM

STUDENT PARTICULARS

NAME			
ENROLLMENT NUMBER			
MOBILE NO.	1.		2.
EMAIL			
NAME OF INSTITUTE			
ADDRESS WITH CONTACT DETAILS OF FATHER / GUARDIAN	PRESENT:		
	PERMENENT:		
BRANCH	DIPLOMA IN MECHANICAL ENGINEERING.		
SEMESTER	5 TH SEMESTER	YEAR	
NAME AND ENROLMENT NUMBERS OF OTHER TEAM MEMBERS, IF ANY	NAME	ENROLLMENT NUMBER	

ORGANISATION PARTICULARS

ORGANISATION	
NAME	
ADDRESS	
NAME , CONTACT DETAILS AND EMAIL ID OF CONTACT PERSON.	NAME:
	CONTACT NUMBER:
	EMAIL ID :

INDUSTRY DEFINED PROBLEM / PROJECT DESCRIPTION FORM

TITLE OF PROBLEM

TITLE:

DISCIPLINARY / INTER-DISCIPLINARY	
	DISCIPLINE DIPLOMA IN MECHANICAL ENGINEERING

PROBLEM SUMMARY

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DETAILED DESCRIPTION OF PROBLEM

EXPECTED OUTCOME OF INDUSTRY DEFINED PROBLEM (IDP)

A large, empty rectangular box with a thin black border, occupying most of the page below the header. It is intended for the user to write the expected outcome of an industry defined problem (IDP).

OTHER DESCRIPTION (IF ANY)

A large, empty rectangular box with a thin black border, occupying most of the page below the section header. It is intended for providing an 'OTHER DESCRIPTION (IF ANY)'. The box is currently blank.

FEEDBACK AND SUGGESTIONS (Optional)

**SUGGESTIONS FOR IMPROVING INDUSTRY DEFINED PROBLEM /
PROJECT (IDP) SCOUTING**

A large, empty rectangular box with a thin black border, intended for users to provide feedback and suggestions. The box is currently blank.