

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN MECHANICAL ENGINEERING

SEMESTER: V

Subject Name: **Project-I**

Laboratory Experiences:

Experience Type	Experience Number	Description of Laboratory Experience	Hours
Minor Project (Includes Home and Self Assignments Also)	1	The Minor Project includes the independent work carried out by the student individually in any one of the following areas: 1. Feasibility Report:(Practice for preparing feasibility report based on data/assumption) Prepare a feasibility report to start a small scale Industry for a simple product. The report should be in line with the requirements of proposal from District Industries centre/GSFC/ GIIC etc. 2. Industry based Investigation : The report includes the Investigations carried out in the suggested areas at industry place, such as (any one) : (a) Tool life/ critical speed investigations. (b) Heat losses in I.C. Engines using different laggings. (c) Fault finding in Machine Tools, Equipments, etc. (d) CNC maintenance (e) Incentive system and job satisfaction (f) Performance based investigation to define relations of various parameters affecting efficiency in Pump, air compressor, turbine, LPG run engine, CNG run engine, Hydraulic JCB, etc.(Any one such equipment or device) 3. Industry based Live Case Studies : • Case study report done in areas like (any one) • Advance manufacturing processes. • Process planning of complex job in Industry. • Real robotic applications. • Measurement with sensors. Manufacturing system of pharmaceutical (Liquid, Powder, capsules, Tablets,etc)	14

		- Any one Textile manufacturing process, Method to process and mechanisms /machines used for it. - Any one Textile processing process, method to process and mechanisms/ machines used for it. - Printing process, method to process and mechanisms/machines used for it. - Air conditioning system of any vehicle 4. Field/Market based survey : Survey report in areas(any one) like: - Job opportunities of Mechanical - Engineers in particular region. - Customer requirements/satisfaction. - demand forecasting of any one - engineering product. Following points must be noted. 1. Minor project should include: - Title - Objectives of minor project - Important definitions - Brief description of selected topic - Data and data collection methods(as applicable) - Synthesis of data collected - Analysis - Report preparation of not less then 30 pages - Power point presentation for minimum 10 minutes.	
Selection of Major Project and Seminar	2	1. The major project should be:- - Innovative in nature - Feasible using the infrastructure of the Institute. - To give practice for drawing/drafting. - Incorporating major manufacturing processes if possible. - Non repetitive in nature - To develop the generic as well as Technology related skills. - Having measurable and analytical end results. 2. The typical examples of the Major project could be - Tooling Equipment –Attachments - Working model of any mechanism/machine - Test Benches - Energy conservation Units - Non Conventional Energy equipment - Laboratory demonstration Units	14

		• Measuring and Inspection set ups. • Sensor based mechanisms • Servo/stepper motor/sensor based devices • Control devices/mechanisms • Robotic applications • Agriculture/pharmaceutical/textile/printing based production mechanisms / machines • Working model of bottle/pouch filling machine 3. Use internet search, print mediums, expert field consultation, visits to industry/exhibition, etc. 4. Major project, selected individually or in group and approved by batch faculty, has to be undertaken for execution in subject Project-II. Preparation of report includes following. • Literature survey (Internet, print, visits, etc) • Details of various feasible projects considered. • Selection criteria and finalization of minimum two projects. • Assembly Drawing/Sketch of projects finalized • Parts/material lists • Work distribution amongst group students, scheduling and actual occurrence of activities. 5. Finalized projects must be presented to whole batch in the form of seminar using power point presentation.	
--	--	--	--

Notes:

1. Prepare the report 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, print on both side of paper.
2. Term work report of student of regular mode should exclude Distance Learning manual, photocopies, pre-printed content, etc. Focus should be on developing the term work as original efforts of students.
3. Term work (hard copy) should also include experience logbook duly certified by workshop instructors (if applicable), Industry/Market/Field personnel (if applicable) and subject teachers.
4. Term work has to be defended (along with term work) by Practical / Oral examination to be conducted by external and internal examiners.