

9. To solve industry problems
10. To develop ability during field project work
11. To develop cost consideration
12. To design the components on broad lines
13. To prepare a drawings and plans for works
14. To assess the financial implication and feasibility of the scheme
15. To prepare the technical reports

3. COURSE OUTCOMES

The theory should be taught and practical should be carried out in such a manner that students are able to acquire different learning outcomes in cognitive, psychomotor and affective domain to demonstrate following course outcomes.

The students will be able to

- Know the questions to which he is finding answers through experimental work.
- Perform the practical work with appropriate accuracy.
- Reduce the experimental readings to the form of answers required.
- Understand clearly what the reader will want to know.
- Give brief but clear answers.
- Convince the reader that the answers are valid.
- Present a reasoned discussion of the significance of the answers he offers.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	ESE	PA	ESE	PA	100
0	0	6	6	---	---	40	60	

Legends: L-Lecture; T – Tutorial/Teacher Guided Theory Practice; P - Practical; C – Credit, ESE - End Semester Examination; PA - Progressive Assessment

4. COURSE DETAILS

Each Project batch must not exceed 8 students.

During the semesters, Students will have to write two types of reports.

1. Course-work reports : i.e. reports for communication with your tutor or guide , Technical reports to communicate with a specific individual who might be a ‘senior’ person in the formats specified by Gujarat Technological University.
2. A summary of work carried out , the readings, calculations, results and answers in numerical or graphical form, and a discussion of the results, answers and conclusions.

Effort should be made to identify actual field problems to be given as project work to the students. Project selected should not be too complex which is beyond the

comprehension level of the students. The placement of the students for such a practical cum project work should match with the competency profile and interest of students. Students may be assessed both by industry and polytechnic faculty.

The suggested performance criteria is given below:

- a) Punctuality and regularity (Log book - mandatory and produced during IA verification)
- b) Initiative in learning/working at site
- c) Level/proficiency of practical skills acquired
- d) Sense of responsibility
- e) Self-expression/Communication skills
- f) Interpersonal skills.
- g) Report writing skills
- h) Viva voce

Some of suggested projects are given below: These are only guidelines, teacher may take any project related to Civil Engineering depending upon the availability of projects. Preference should be given to practical oriented projects. According to the local needs. The following major projects are suggested:

1. Construction of a small concrete road consisting of following activities
 - Survey and preparation of site plan
 - Preparation of drawings i.e. L-Section and X-Section
 - Estimating of earth work
 - Material estimating and costing with specifications
 - Testing of Aggregates
 - Design of Concrete Mix
 - Preparation of sub grade with stone ballast
 - Laying of concrete
 - Testing of slump, casting of cubes and testing
 - Technical report writing
2. Water Supply /Drainage system for a village / Layout
 - Surveying
 - Design of water requirements and water distribution system
 - Preparation of drawing of overhead tank
 - Material estimating and costing
 - Specifications
 - Technical report writing
3. Construction of shopping complex/School Building/Hostel Building/PHC/Residential Complex/Industrial Building/Bridges/Foundations/Flyovers/Under Passes
Preparation of detailed drawing – Plan, Elevation, section, layout, structural drawing, working drawing Preparation of Detailed and Abstract Estimate, Quantity of Materials
4. Rainwater harvesting and Recharging
 - Assessment of catchment's area
 - Intensity of rainfall
 - Monitoring during rainy season
 - Quality and Quantity analysis

- Collection of water
 - Recharge pit design
 - Supply of water
5. Water Supply and Sanitary connections for a Multi storied building
 - Preparation of detailed drawing – Plan, Elevation, section, layout, working drawing
 - Preparation of Detailed and Abstract Estimate, Quantity of Materials
 6. Report on Concrete Mix Design with/without Admixtures.
 7. Green Buildings
 8. Solar Farming
 9. Critical Study of existing water supply system
 10. Critical Study of existing Sewerage system
 11. Solid waste management
 12. Bio-medical waste disposal.
 13. Flood water management – case study
 14. Changes in Rainfall pattern and its impact
 15. Traffic Study
 16. Noise Study
 17. Air pollution Study.
 18. Valuation and Rent fixation
 19. Water shed management
 20. Restoration of Lakes.
 21. Repair estimate of existing Buildings
- The project report should consist of following items.
1. Introduction
 2. Literature survey
 3. Study Area
 4. Methodology/Design/Tests
 5. Result and Discussion
 6. Conclusion and scope for future study
 7. References.

- One self appraisal form should be attached at the end by the student in his favour regarding the claim of his work relevance , utilities and materialization as well as the gain in terms of cost – benefits , so that teacher can have ease of evaluation.
- The Report should be submitted well before the Exam.

Guideline for the Project– II for Diploma Engineering

1. Project reports should be typed neatly in New Times Roman letters on both sides of the paper with 1.5 line spacing on a A4 size paper (210 x 297 mm). The margins should be: Left - 1.5", Right - 1", Top and Bottom - 0.75".
2. The total number of reports (Soft bound) to be prepared are
 - One copy to the department
 - One copy to the concerned guide(s)
 - One copy to the candidate.
3. Before taking the final printout, the approval of the concerned guide(s) is mandatory and suggested corrections, if any, must be incorporated.
4. Every copy of the report must contain
 - Inner title page (White)
 - Outer title page with a plastic cover
 - Certificate in the format enclosed both from the college and the organization where the project is carried out.
 - An abstract (synopsis) not exceeding 100 words, indicating salient features of the work.
5. The organization of the report should be as follows

<ol style="list-style-type: none"> 1. Inner title page 2. Abstract or Synopsis 3. Acknowledgments 4. Table of Contents 5. List of table & figures (optional) 	Usually numbered in roman
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- Chapters (to be numbered in Arabic) containing Introduction-, which usually specifies the scope of work and its importance and relation to previous work and the present developments, Main body of the report divided appropriately into chapters, sections and subsections.
- The chapters, sections and subsections may be numbered in the decimal form for e.g. Chapter 2, sections as 2.1, 2.2 etc., and subsections as 2.2.3, 2.5.1 etc.
- The **chapter must be left or right justified (font size 16)**. Followed by the **title of chapter centered (font size 18)**, **section/subsection numbers along with their headings must be left justified with section number and its heading in font size 16** and **subsection and its heading in font size 14**. The **body or the text of the report should have font size 12**.