Project Work
EG 3205 CE

Year: III
Semester: II

Total: 10 Hrs. /week
Lecture: Hr./week
Tutorial: Hr./week
Practical: 10 Hrs./week
Lab: Hr./week

Course Description:
This course is designed to make students aware of using theoretical and practical application in integrated manner to their knowledge gained during whole course related to civil engineering. Topics will normally contain measurement, design, drawing, cost estimate of components. Reading assignments and lecture on report design and oral presentations techniques will be in beginning of session. Preparation of the report and an oral seminar will occur at the end of the session.

Course Objectives:
After completion of this course students will be able to:

1. Prepare design, drawing and cost estimate of residential/small office building projects;
2. Prepare design, drawing and cost estimate of small rural water supply projects and sanitary works and
3. Prepare drawings and cost estimate of small roads and irrigation projects.

The overall assignment will be as follows:

A. Building:	5.0 Hrs./week
B. Sanitary and Water supply:	1.5 Hrs./week
C. Highway:	1.5 Hrs./week
D. Irrigation:	2.0 Hrs./week

Each part of the subjects will be evaluated as a continuous process.

Course Contents:
Unit 1: Building: **[75 Hrs.]**

1.1. Measure a plot of land for building layout.
1.2. Collect materials and labour rate for rate analysis.
1.3. Carryout architectural design and drawing of a 3 or 4 rooms and 2 to 4 storey residential/office building (site plan, floor plans, elevations, sections, flooring, roofing, staircase, finishes, fire place details).
1.4. Design/interpret structural components (foundation, wall, column, beams, ties, floors, and roof trusses) including seismic details drawings.
1.5. Prepare design and drawing of internal plumbing details (bathroom, hot and cold-water supply system, waste water and rain water systems).
1.6. Rain water (rain water harvesting, ground water recharge) and ground water treatment details for domestic use.
1.7. Study drawing of electrical system (power, light layout) and telephone network system.
1.8. Rate analysis and detailed cost estimate.
1.9. Prepare drawings both manually and using CADD software.

Unit 2: Sanitary and Water Supply: **[22 Hrs.]**

2.1. Prepare/observe external drainage system, sewer pipe layout, septic tank, soak pit design and drawings.
2.2. Prepare design and drawings of a rural water supply scheme (gravity flow).
2.3. Prepare bill of quantities and cost estimate.

Unit 3: Highway: **[23 Hrs.]**

3.1. Study of contour map.
3.2. Draw layout of road alignment, profile, cross-section with the help of given data/topographic map.
3.3. Design horizontal and vertical curve.
3.4. Provide typical retraining structures, drains and culverts.
3.5. Prepare bill of quantities and cost estimate.

Unit 4: Irrigation: **[30 Hrs.]**

4.1. Draw layout, profile and cross-section of small hill irrigation project with the help of given data/topographic map.
4.2. Draw typical head works structure (weir, trash-rack), aqueduct, fall, Siphon, lined canal sections etc.
4.3. Prepare bill of quantities and cost estimate.

Evaluation Scheme:

S. No.	Subjects/Topics	Marks distribution %	Internal %	Final %
1	Building	50	30	20
2	Sanitary and Water Supply	15	9	6
3	Highway	15	9	6
4	Irrigation	20	8	12
Total		**100**	**60**	**40**

References:

1. Course notes provided by the teachers/department.
2. Sample drawings of different municipality office, Nepal Government Projects.
3. Building bye-laws.
4. Building Construction Hand Book by Roy Chudley and Roger Greeno.
5. Nepal National Building Codes.
6. Village water systems- A technical journal (Nepal and Bhutan)
7. Estimating and Costing by B. N. Dutta.
8. Text books of related courses.
9. Government norms of rate analysis.