



Course Syllabus
Gyanmanjari Diploma Engineering College
Semester-I

Subject: Basic Civil Engineering – DETCV10201

Type of course: Diploma civil engineering

Prerequisite: Engineering science

Rationale: Now a day's Industrial activities/ task to be performed by allied programs such as Automobile, Marine, Fabrication are complex in nature and involves integration of activities of core programs which are Mechanical, Electrical and Civil. Thus, they are expected to look after many activities at work place, which may be interdisciplinary, for example he/ she has to interpret and execute the task as per the drawing, select suitable material, adopt/ suggest appropriate construction activity which requires the knowledge of civil engineering. Therefore he/she is supposed to be exposed to basics of civil engineering. This course mainly encompasses the major and general areas of civil engineering considering environmental aspects; knowledge of which is required by them.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
CI	T	P		C	Theory Marks		Practical Marks		
			ESE		MSE	V	P	ALA	
04	0	2	5	60	30	10	20	30	150

Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.

Continuous Assessment:

(For each activity maximum-minimum range is 5 to 10 marks)

Sr. No	Active Learning Activities	Marks
1.	Assignment Student must write the Question answer which is given by faculty.	10
2.	Test of Theory Student will give the test of the specific unit decided by faculty.	10



3.	Field Survey report Student will visit the site and the prepare the survey report.	05
4.	Presentation Prepare the presentation on any topic of subject topic.	05
Total		30

Course Content:

Module	Course Content	Hrs	% Weightage
1	INTRODUCTION TO CIVIL ENGINEERING Introduction, Branch of civil engineering, Various civil engineering structures, Scope of civil engineering, Role of civil engineering, Impact of infrastructure development on theeconomy of a country, Unit of measurement	04	8%
2	BUILDING PLANNING AND DRAWING Introduction to building planning Components of a building, Principal of planning, Orientation of building, Building bye laws, Different types of area, Basic requirements for building planning and drawing, Differential plan, Element, abbreviations and symbols of buildingdrawing, Zoning, low cost housing and slump, FSI	10	20%
3	BUILDING MATERIALS Introduction, Property of building materials, Selection of appropriate material, Classification of engineering materials, Different types of civil engineering materials (Cement, sand, Aggregate, mortar, concrete, bricks, stone, steel Timber, soil and plastics.) BUILDING CONSTRUCTION Introduction, Classification of building base on occupancy and structure, Types of loads acting on building, Types of foundations, Masonry walls, Bonds in bricks masonry, Differential interior part of building (Doors, window, staircase, roof, and flooring)	15	28%
4	SURVEYING Definition of surveying, Purpose of surveying, Uses of Surveying, Plan and map, Primary division of surveying, Fundamental principles of Surveying, Classification of Surveying, Different scale of Surveying, Example of scale LINEAR AND ANGULAR MEASUREMENTS Introduction, Method, Chain surveying, Instrument use in chain surveying, Errors in chaining, Example of chain surveying,	18	32%



	<p>Traversing, Types and principal of Compass, surveying, Types of meridians and bearing for Surveying, For bearing and back bearing, Magnetic declination, Dip of magnetic needle, Examples</p> <p>Levelling Introduction to Levelling, Basic definition, Types of level, Levelling staff, Terms used in levelling, Temporary Adjustments of level, Methods of levelling, Computation of R.L., Correction for curvature of earth and refraction, Errors in leveling and its elimination, Contours</p> <p>MODERN TOOLS Introduction to Theodolite, Electronic distance measurement instrument, Total station, Global positioning system, Remote sensing, Geographic information system</p>		
5	<p>ADVANCEMENTS IN CIVIL ENGINEERING Smart City and it's features, Solid waste management system, Mass transportation system, Bus rapid transit system (BRTS), Metro rail, Rain water harvesting, Watershed management, Green building, Energy efficient building, Development of river fronts., Heritage structures and its conservation, Features of earthquake resistant structures</p>	7	12%

Suggested Specification table with Marks (Theory):60

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weight age	25%	25%	10%	-	-	-

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course the students should be able to:	
CO1	To gain the basic knowledge of civil engineering
CO2	Understand component of building and building terminology Understand differential building layout plan



CO3	Understand importance of various construction equipments To aware about use of advance smart materials in construction Importance of soil in civil engineering and know about building foundation Understand the earthquake phenomenon and its importance in building construction.
CO4	Understand traditional and modern method of surveying
CO5	Understand latest trends in civil engineering

List of Practical:

Sr. No	Descriptions	Unit No	Hr.
1.	Unit conversation exercise	01	2
2.	Chart preparation of various materials. collection of rate and sample (field visit)	03	4
3.	Component of building (field visit)	04	2
4.	Planning of a residential building (plan, elevation, and section of simple room)	02	6
5.	Group discussion of various civil engineering materials and their uses	03	4
6.	Linear and angular measurement (chain and compass in field)	06	2
7.	Video showing working of construction equipments	03	2
8.	Presentation on BRTS/Mass transportation system	08	04
9.	Assignment based upon estimation (simple, 1 room only)	02	02
10.	Seminar on green building and smart city	09	04
	Total		32hr.

Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses,



Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

Reference Books:

1. Surveying and levelling N.N. Basak
2. Civil engineering drawing S.C. Rangwala
3. Building construction dr. B. C Punmia
4. Building planning, designing, and scheduling
5. Basic civil engineering R. P. Rethaliya
6. Town planning S.C. Rangwala
7. Basic civil engineering Dr. R.B. Khasiya

