

Name of Faculty	:	Faculty of Engineering & Technology
Name of Program	:	Diploma Engineering (DE)
Course Code	:	2DCL02
Course Title	:	Basics of Civil Engineering
Type of Course	:	Basic Engineering (BE)
Year of Introduction	:	2023-24

Prerequisite	:	-
Course Objective	:	To Provide exposure to the students with hands on experience on various basic Civil Engineering practices.
Course Outcomes	:	At the end of this course, students will be able to:
	CO1	To understand basic concepts of Civil Engineering, perform field survey work using chain, tape and compass survey/dumpy level & different methods of measurements
	CO2	To Identify and characterize building materials and their manufacturing process.
	CO3	To Identify the factors to be considered in planning and construction of buildings
	CO4	To Understand the construction practices and techniques
	CO5	Follow traffic control aids, green and eco-friendly building technology

Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	SEE	CIA	SEE	CIA	
3	0	2	4	70	30	30	20	150

Legends: L-Lecture; T-Tutorial/Teacher Guided Theory Practice; P – Practical, C – Credit, SEE – Semester End Examination, CIA – Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)

Course Content

Unit No.	Topics	Teaching Hours	Weightage	Mapping with CO
1	Introduction and Scope of Civil Engineering: Branches & Function of Civil Engineering, Impact of Infrastructural Development on the Economy of a Country.	01	5%	CO1
2	Surveying: Introduction, Basic Definitions (Surveying, levelling, Plans, Maps, Scales), Introduction to divisions of surveying, Classification of surveying, Fundamental principles of surveying, Measurement in Surveying, Phases of Surveying	02	5%	CO1
3	Linear measurements: Instruments used in chaining, Ranging: a). Direct - i. By Eye, ii. By Line Ranger b). Indirect, chaining: a). Chaining on Plane Ground b). Chaining on Sloping Ground - i. Direct (Stepping Method), ii. Indirect, Error in Chaining & tape corrections, Symbols used in Surveying	08	20%	CO1
4	Angular Measurements Introduction to Angular Measurement, Instruments used for angular measurement: a.) Compass, types of Compass b.) Setting and operation of compass c.) Methods of finding included angles from bearings. d.) Introduction to dumpy level and contour.	08	20%	CO1
5	Building Services and Building Materials Introduction to Building Bye-Laws b.) Principles of Planning and Building Services c.) Selection of Construction Materials d.) Field tests for different materials.	04	15%	CO2
6	Construction Materials: Requirement, types, uses, properties and importance of Civil Engineering materials like, Bricks, Cement, Timber, Sand, Concrete, steel, Types of Masonary Bonds and Types of Foundations.	04	15%	CO2
7	Elements of Building Construction: Planning: General Requirement of Building, Elementary principles and basic requirements of a building Planning, Importance of Planning, Layout of residential & industrial buildings, Introduction	06	8%	CO3 & CO4

	to Plan, Elevation & Section of Residential Building.			
8	Transportation Engineering: Role of Transportation in National development, Transportation Ways Introduction to Railway, Airways , Roadways and waterways	05	8%	CO5
9	Green Building: Components of green building, Rain water Harvesting, Concept of green building	04	4%	CO5

Suggested Distribution of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
Weightage	25	30	30	5	5	5

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

Suggested List of Experiments/Tutorials

Sr. No.	Name of Experiment/Tutorial	Teaching Hours
1	Introduction to instruments	2
2	Chain survey	2
3	Compass survey (prismatic & survey compass)	4
4	Levelling	4
5	Market survey	2
6	Layout of Residential building , Layout of Foundation Plan for machines, Layout of electrical wiring plan in construction building.	4
7	Draw a neat sketches of wall section and Plumbing fixtures	4
8	Civil Construction Material test	2
9	Draw a neat sketches of traffic signs.	2
10	Construction Site Visit Report	2

Major Equipment/ Instruments and Software Required

Sr. No.	Name of Major Equipment/ Instruments and Software
1	Chain
2	Compass: Prismatic and Surveyor's
3	Levelling Staff
4	Ranging Rod
5	Measuring Tape
6	Electronic distance measurement device
7	Dumpy Level
8	Theodolite

Suggested Learning Websites

Sr. No.	Name of Website
1	http://www.nptel.iitm.ac.in/courses.php?branch=Civil
2	http://www.nptel.iitm.ac.in/courses/Webcourse-contents/IIT

Reference Books :

Sr. No.	Name of Reference Books
1	Civil Engg. Drawing by S. C. Rangwala Publication Charotar Pub. House Anand
2	Surveying Vol. I & II by Dr. B. C. Punamia Publication Laxmi Publication Delhi
3	Title: Surveying Vol. I and II, Author: S. K. Duggal, Publisher: Tata Macgraw hill Publication New Delhi
4	Title: Building Construction, Author: Dr. B. C. Punamia, Publisher: Laxmi Pub. Delhi
5	Title: Engineering Material, Author: Dr. S.C. Rangwala, Publisher: Charotar Pub. House
6	Title: Highway Engineering, Author: Khanna S. K. and Justo C. E.G., Publisher: Nemchand and Brothers