

Branch Name:	Computer Engineering / Information Technology / Artificial Intelligence and Data Science / Information and Communication Technology / Artificial Intelligence and Machine Learning / Electronics and Communication Engineering
Program Code:	ET103 / ET105 / ET108 / ET107 / ET114 / ET116
Course Title:	Elements of Civil and Mechanical Engineering Practical
Course Code:	2ET1000106P
Pre-requisite Course:	Basic knowledge of mathematics and physics

Course Objectives:

1. The students will learn fundamental basics of Civil and Mechanical Engineering concepts.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	-	-	-	-	10	25	10	25	50

List of Practical:

Sr. No.	Detail of Practicals	Contact Hours
1	Chain survey and Compass survey	6
2	Total station	4
3	Green building and energy efficient building	4
4	To understand construction and working of various types of boiler.	4
5	To understand construction and working of different boiler mountings and accessories.	4
6	To determine brake thermal efficiency of an I. C. Engine	4

Reference Books:

1. Elements of Civil Engineering Author: Dr. R.K. Jain and Dr. P.P. Lodha. Publisher: McGraw Hill Education, India Pvt. Ltd.
2. Surveying Vol. I Author: Dr. B. C. Punmia, Ashokkumar Jain, Arunkumar. Publisher: Laxmi Publication Delhi.
3. Building Construction Author: Dr. B. C. Punmia, Ashokkumar Jain, Arunkumar Jain. Publisher: Laxmi Pub. Delhi.
4. Building Information Modelling: Global & Indian Perspective Author: Dr. Adv. Harshul Savla, Dr. Chandrahauns Chavan, Ar. Pallavi Patil. Publisher: Notion Press, India.
5. Introduction to Smart Cities Author: Anil Kumar. Publisher: Pearson India.
6. Basic Mechanical Engineering by Pravin Kumar, Pearson
7. Elements of Mechanical Engineering by: P. S Desai and S.B.soni

8. Elements of Mechanical Engineering by Sadhu Singh S. Chand Publication
9. Elements of Mechanical Engineering by S.M.Bhatt

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Overview of Civil Engineering field.	L-1 and L-2
CLO2	Idea about surveying and different types of instruments.	L-3
CLO3	Basic idea about building construction and green building,	L4
CLO4	Get acquainted with BIM and smart cities.	L2
CLO5	To understand the fundamentals of mechanical systems.	L2
CLO6	To understand and appreciate significance of mechanical engineering in different fields of engineering.	L2

L1- Remember, L2- Understand, L3- Apply, L4- Analyze, L5- Evaluate, L6- Create
Mapping of CLOs with POs & PSOs

	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
Course Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO 2	PSO 3
CLO1	M			M	M				M			M	M		
CLO2	M	M	H		M			M	M		M	M	M		M
CLO3	M	M	M		M			M	M		M	M	M		M
CLO4	M	M	H		M			M	M		M	M	M		M
CLO5	M	M	M		M			M	M		M	M	M		
CLO6	M				M	M	M						M		

H: High, M: Medium, L: Low