

ST. ANNE'S COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai)

ANGUCHETTPALAYAM, PANRUTI - 607 106.



ATTENDANCE AND ASSESSMENT RECORD

Name of the Staff

..... K. SARAVANAN / Sr. GANAJENCY
SALETEMARY

Department of the Staff

..... MECHANICAL ENGINEERING

Semester / Subject

..... IInd / BE3255 BASIC CIVIL AND
MECHANICAL ENGINEERING

Period

..... FEB' 2025 - MAY' 2025

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255 BASIC CIVIL AND MECHANICAL ENGINEERING L T P C 3 0 3

COURSE OBJECTIVES

Provide the students an illustration of the significance of the Civil and Mechanical Engineering profession in satisfying the societal needs.

Help students acquire knowledge in the basics of surveying and the materials used for construction. Provide an insight to the essentials of components of a building and the infrastructure facilities. Explain the component of power plant units and detailed explanation to IC engines their working principles.

Explain the Refrigeration & Air-conditioning system.

PART A: OVERVIEW OF CIVIL ENGINEERING

5 Engineering contributions to the welfare of Society - Specialized sub disciplines in Civil Engineering - Structural, Construction, Geotechnical, Environmental, Transportation and Water Resources Engineering - National building code - terminologists: Plinth area, Carpet area, Floor area, Dup area, Floor space index - Types of buildings: Residential buildings, Industrial buildings.

4 **PART B: OVERVIEW OF MECHANICAL ENGINEERING**

4 Review of Mechanical Engineering - Mechanical Engineering Contributions to the welfare of Society - Specialized sub disciplines in Mechanical Engineering - Manufacturing, Automation, Mobile and Energy Engineering - Interdisciplinary concepts in Mechanical Engineering.

9 **SURVEYING AND CIVIL ENGINEERING MATERIALS**

9 Surveying: Objects - Classification - Principles - Measurements of Distances and angles - Levelling determination of areas - Contours.

9 Building Materials: Bricks - Stones - Sand - Cement - Concrete - Steel - Timber - Modern materials, Thermal and Acoustic Insulating Materials, Decorative Panels, Water Proofing Materials, Modern uses of Gypsum, Pre-fabricated Building component (brief discussion only)

9 **BUILDING COMPONENTS AND INFRASTRUCTURE**

9 Planning plans - Setting out of a Building - Foundations: Types of foundations - Bearing capacity and element - Brick masonry - Stone Masonry - Beams - Columns - Lintels - Roofing - Flooring - plastering.

9 Water Supply Network - Rain Water Harvesting - Solid Waste Management - Introduction to Highways and Railways - Introduction to Green Buildings.

9 **INTERNAL COMBUSTION ENGINES AND POWER PLANTS**

9 Classification of Power/Plants- Working principle of steam, Gas, Diesel, Hydro -electric and Nuclear power plants- Internal combustion engines as automobile power plant - Working principle of Petrol Diesel Engines - Four stroke and two stroke cycles - Comparison of four stroke and two stroke engines Working principle of Boilers-Turbines, Reciprocating Pumps (single acting and double acting) and Centrifugal pumps, Concept of hybrid engines, Industrial safety practices and protective devices

9 **REFRIGERATION AND AIR CONDITIONING SYSTEM**

9 Refrigeration and Air Conditioning: Principle of vapour compression and absorptor technology-Lay-out of typical domestic refrigerator-Windrow and Split type room Air conditioner properties of air - water-mixture, concepts of psychometric and its process.

9 **TOTAL: 45 PERIODS**

TEXT BOOKS:

G. Shanmugam, M. Palanichamy, Basic Civil and Mechanical Engineering, McGraw Hill Education, First edition, 2018

REFERENCES:

Palanikumar, K. Basic Mechanical Engineering, ARS Publications, 2018.

Ramamurtham S., "Basic Civil Engineering", Dhampai Rai Publishing Co.(P) Ltd. 2013.

Seetharaman S., "Basic Civil Engineering", Anuradha Agencies 2005

Shanmuga Kumar SRI "Basic Mechanical Engineering", Hi-tech Publications, Mayyiladuthurai

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Name of the Staff : K. SARAVANAN / Sr. GRANTS TENDY

SALEEMAH

Department of the Staff : MECHANICAL ENGINEERING

Department of the Student : B.E., ELECTRICAL AND ELECTRONICS ENGINEERING

Semester : IV

Subject Code & Name : BE3255 & BASIC CIVIL AND MECHANICAL ENGINEERING

Period : From FEB' 2025 to MAY' 2025

To be Signed at the end of the each Assessment

Assessment Report	<u>I</u>	<u>II</u>	-
Assessment Date	<u>09.04.2025</u>	<u>15.05.2025</u>	-
Report Due on	<u>11.04.2025</u>	<u>16.05.2025</u>	-
Signature - HOD of Students with Date	<u>K. SARAVANAN</u>	<u>K. SARAVANAN</u>	-

To be Signed at the end of the Semester

Staff in - charge	HOD of Staff	HOD of Students	Principal
<u>K. SARAVANAN</u>	<u>K. SARAVANAN</u>	<u>K. SARAVANAN</u>	<u>[Signature]</u>

ATTENDANCE

Assessment

Reg. No.	Name	21 27	Attendance
49212410			15/4 28/4
5001	AGASRIYA	19 - 27	3
5002	ARUL SELVAN	10 11	
5003	CHARIS DENO	18 26	
5004	ELAVARASAN	12 28	
5005	GIREI G	07 21	
5006	GOWTHAM	19 26	
5007	HARI POOTA	17 27	
5008	JOE PRINCE	17 26	
5009	KALAIYARAN	10 21	
5010	KARTHIK P	18 26	
5011	LAVANYA M	18 27	
5012	MOHAMMED ISI	14 22	
5013	PRAVEEN N	19 27	
5014	PRİYADHARAN	19 27	
5015	SHANTHOSH K	09 17	

	Internal Component				Assessment							
	Report -1 (R2021)		Report -2 (R2021)		CIA-1	CIA-2						
	Assignment	Case study	Seminar	Mini Project	Total (40)	Assignment	Case study	Seminar	Mini Project	Total (40)		
1	20	20			40			20	20	40	100	100
2	20	20			40			20	20	40	84	90
3	20	20			40			20	20	40	92	90
4	20	20			40			20	20	40	84	90
5	20	20			40			20	20	40	84	96
6	20	20			40			20	20	40	92	90
7	20	20			40			20	20	40	98	100
8	20	20			40			20	20	40	98	98
9	20	20			40			20	20	40	92	98
10	20	20			40			20	20	40	88	90
11	20	20			40			20	20	40	98	100
12	20	20			40			20	20	40	84	96
13	20	20			40			20	20	40	100	100
14	20	20			40			20	20	40	100	100
15	20	20			40			20	20	40	84	92

No. of Absentees
Initial

RECORD OF

Class Planned		Topic Name	BT
Date	Period		
27.2.25	1	<p>UNIT-I PART-A OVERVIEW OF CIVIL ENGINEERING</p> <p>Civil Engineering contribution to the welfare of society</p>	K2
28.2.25	4	<p>Specialized sub disciplines in civil engineering.</p>	K2
28.2.25	6	<p>Structural, construction, geotechnical, Environmental, transportation and water resources engineering.</p>	K2
10.3.25	3	<p>National building code - terminology: plant area, carpet area, floor area, Buildup area, Floor space Index</p>	K2
13.3.25	1	<p>Types of buildings: Residential buildings, Industrial buildings.</p>	K2
14.3.25	4	<p>UNIT-I PART B: MECHANICAL OVERVIEW OF MECHANICAL ENGINEERING</p> <p>Overview of Mechanical Engineering</p>	K2
17.3.25	3	<p>Mechanical Engineering contributions to the welfare of society</p>	K2

BT- Bloom's Taxonomy, TA-Teaching Aids

CLASS WORK

Book Referred	Class Conducted		Reason for Deviation	TA	Staff Sign
	Date	Period			
Tx1	27.2.25	1		BB	✓
Tx1	28.2.25	4		BB	✓
Tx1	28.2.25	6		BB	✓
Tx1	10.3.25	3		BB	✓
Tx1	13.3.25	1		BB	✓
Tx1	14.3.25	4		BB	✓
Tx1	17.3.25	3		BB	✓

RECORD OF

CLASS WORK

Class Planned		Topic Name	BT
Date	Period		
17.3.25	7	Specialized sub disciplines in Mechanical Engineering - Manufacturing Automation, Automobile and Energy Engineering.	K2
20.3.25	1	Interdisciplinary concepts in Mechanical Engineering.	K2
21.8.25	4	UNIT II: SURVEYING AND CIVIL ENGINEERING MATERIALS Surveying: objects - classifications - principles	K2
22.3.25	2	Measurements of distance and angles - leveling	K2
24.3.25	3	Determination of areas - contour	K2
27.3.25	1	Civil Engineering Materials: Bricks - Stones - Sand - Cement - concrete - steel - Timber	K2
27.3.25	2	Modern Materials, Skymal and Acoustic Insulating Materials	K2
28.3.25	4	Decorative Panels	K2
04.04.25	4	Water proofing Materials	K2
07.04.25	3	Modern uses of Gypsum	K2

Book Referred	Class Conducted		Reason for Deviation	TA	Staff Sign
	Date	Period			
Tx1	17.3.25	7	-	BB	✓
Tx1	20.3.25	1	-	BB	✓
Tx1	21.3.25	4	-	BB	✓
Tx1	22.3.25	2	-	BB	✓
Tx1	24.3.25	3	-	BB	✓
Tx1	27.3.25	1	-	BB	✓
Tx1	27.3.25	2	-	BB	✓
Tx1	28.3.25	4	-	BB	✓
Tx1	04.04.25	4	-	BB	✓
Tx1	07.04.25	3	-	BB	✓

RECORD OF

CLASS WORK

Class Planned		Topic Name	BT
Date	Period		
11.4.25	4	Pre-fabricated building components Brief discussion only	K ₂
		UNIT III: BUILDING COMPONENTS AND INFRASTRUCTURE	
17.4.25	1	Building plans - setting out of a building	K ₂
21.4.25	3	Foundations: Types of foundations - Bearing capacity and settlement	K ₂
24.4.25	1	Stems, masonry.	K ₂
25.4.25	4	Beams - columns - lintels - Roofing - Flooring - plastering.	K ₂
26.4.25	1	Types of bridges and dams	K ₂
26.4.25	2	Water supply network - Rain water harvesting - solid waste management	K ₂
26.4.25	3	Introduction to Highways and Railways	K ₂
26.4.25	4	Introduction to Green Building	K ₂
26.4.25	5	UNIT: IV INTERIAT-COMBUSTION ENGINES AND POWER PLANTS	K ₂
26.4.25	6	Classification of power plants - working principle of steam	K ₂

F- Bloom's Taxonomy, TA-Teaching Aids

Book Referred	Class Conducted		Reason for Deviation	TA	Staff Sign
	Date	Period			
TX1	11.4.25	4	-	BB	✓
TX1	17.4.25	1	-	BB	✓
TX1	21.4.25	3	-	BB	✓
TX1	24.4.25	1	-	BB	✓
TX1	25.4.25	4	-	BB	✓
TX1	26.4.25	1	-	BB	✓
TX1	26.4.25	2	-	BB	✓
TX1	26.4.25	3	-	BB	✓
TX1	26.4.25	4	-	BB	✓
TX1	26.4.25	5	-	BB	✓
TX1	26.4.25	6	-	BB	✓

Precedence of class work

RECORD OF

CLASS WORK

Class Planned		Topic Name	BT
Date	Period		
28.5.25	3	Gas, diesel, hydro- electric and nuclear power plants	K ₂
02.5.25	4	Internal combustion engines as automobile power plants	K ₂
04.5.25	1	Working principle of petrol and diesel engines	K ₂
04.5.25	2	Four stroke and two stroke cycles	K ₂
04.5.25	3	Comparison of four stroke and two stroke engines	K ₂
05.5.25	3	Working principles of Roots-turbines, Reciprocating pumps (single acting and double acting) and centrifugal pumps.	K ₂
08.5.25	1	Concept of hybrid engines	K ₂
09.5.25	4	Industrial safety practices and protective devices	K ₂
		UNIT-V REFRIGERATION AND AIR CONDITIONING SYSTEM	
		Terminology of Refrigeration and	K ₂
12.5.25	3		

Book Referred	Class Conducted		Reason for Deviation	TA	Staff Sign
	Date	Period			
Tx1	28.5.25	3	-	BB	✓
Tx1	02.5.25	4	-	BB	✓
Tx1	04.5.25	1	-	BB	✓
Tx1	04.5.25	2	-	BB	✓
Tx1	04.5.25	3	-	BB	✓
Tx1	05.5.25	3	-	BB	✓
Tx1	08.5.25	1	-	BB	✓
Tx1	09.5.25	4	-	BB	✓
Tx1	12.5.25	3	-	BB	✓

BT- Bloom's Taxonomy, TA- Teaching Aids, Conditioning

RECORD OF

Class Planned		Topic Name	BT
Date	Period		
15.5.25	4	Principle of vapour compression and Absorption system	K2
15.5.25	5	Layout of typical domestic refrigerator.	K2
15.5.25	6	Layout of typical domestic refrigerator.	K2
15.5.25	7	Window and split type room Air conditioners,	K2
19.5.25	4	properties of air,	K2
19.5.25	5	water, moisture,	K2
19.5.25	6	Concepts of psychrometric and	K2
19.5.25	7	- Its process	K2

CLASS WORK

Book Referred	Class Conducted		Reason for Deviation	TA	Staff Sign
	Date	Period			
Tx1	15.5.25	4	-	BB	✓
Tx1	15.5.25	5	-	BB	✓
Tx1	15.5.25	6	-	BB	✓
Tx1	15.5.25	7	-	BB	✓
Tx1	19.5.25	4	-	BB	✓
Tx1	19.5.25	5	-	BB	✓
Tx1	19.5.25	6	-	BB	✓
Tx1	19.5.25	7	-	BB	✓

Time Table

Period	1	2	3	4	5	6	7
Monday			BCME				
Tuesday							
Wednesday	BCME						
Thursday							
Friday				BCME			

Unit Completion Details

No.	Unit Description	Start Date	Finish Date	No. of Hours
	PART A: OVERVIEW OF CIVIL ENGINEERING PART: B: OVERVIEW OF ENGINEERING	27.2.25	20.3.25	09
	SURVEYING AND CIVIL ENGINEERING MATERIALS	21.3.25	11.4.25	09
	BUILDING COMPONENTS AND INFRASTRUCTURES	17.4.25	26.4.25	09
	INTERIOR COMBUSTION ENGINES AND POWER PLANTS	26.4.25	09.5.25	09
	REFRIGERATION AND AIR CONDITIONING SYSTEMS	12.5.25	19.5.25	09

 **K. Srinivas**
 HOD of Students

 **K. Srinivas**
 Principal



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Course Outcomes:

CO No	Course Outcome	Knowledge Level
CO1	Understanding profession of Civil and Mechanical engineering.	K2
CO2	Summarise the planning of building, infrastructure and working of Machines.	K2
CO3	Apply the knowledge gained in respective discipline	K2
CO4	Illustrate the ideas of Civil and Mechanical Engineering applications.	K2
CO5	Appraise the material, Structures, machines and energy.	K2

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Createl]
CO - PO Mapping

Program Outcome	Course Outcomes				
	CO 1	CO 2	CO 3	CO 4	CO 5
PO 1	2	2	2	2	2
PO 2	-	-	-	-	-
PO 3	-	-	-	-	-
PO 4	1	-	-	-	-
PO 5	-	-	-	-	-
PO 6	-	-	-	-	-
PO 7	1	1	1	1	1
PO 8	2	2	2	2	2
PO 9	1	1	2	1	1
PO 10	2	2	2	2	2
PO 11	-	-	-	-	-
PO 12	1	2	2	2	2
PSO 1	-	-	-	-	-
PSO 2	-	-	-	-	-
PSO 3	-	-	-	-	-

Regulation 2021: 1 - Low, 2 - Medium, 3 - High

Teaching Aids

Teaching Aids	1 - Low	2 - Medium	3 - High
BB - Black Board	OHP - Over Head Projector	PPT - Power Point	L1 - Lecture 1
T1 - Tutorial 1	A1 - Assignment 1	Tx1 - Text Book 1	Rx1 - Reference Book 1
M - Model and Demo	V - Video Lecture	A - Animation	