

SESSION 2021-25

FACULTY: Mr. FARUN KUMAR NARNAJURE
NAME: Ms. NAMRATA KHEDGE
SUBJECT: C121004
ENGINEERING MATERIALS

SESSION: 2021-25
B.TECH YEAR II
SEM: A

COURSE OUTCOME

- CO1: Analyze cement properties through standardized tests.
CO2: Evaluate aggregate characteristics and behavior.
CO3: Assess concrete workability and strength parameters.
CO4: Examine various construction materials properties.
CO5: Apply concrete mix design principles and methods.

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	3	0	0	3	0	0	3	3	3	0	3	3	3	0	0
CO2	3	3	2	0	3	0	0	3	3	3	0	3	2	3	0	0
CO3	3	3	3	0	3	0	0	3	3	3	0	3	3	3	0	0
CO4	3	3	0	0	3	0	0	3	3	3	0	3	0	3	0	0
CO5	3	3	2	0	0	0	0	3	3	3	0	3	3	3	0	0
TARGET	3.00	3.00	2.30	-	3.00	-	-	3.00	3.00	3.00	-	3.00	2.80	3.00	-	-

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	2.90	2.90	0.00	0.00	0	0	0.00	2.9	2.9	2.90	0.00	2.90	2.9	2.90	0.00	0.00
CO2	2.90	2.90	1.90	0.00	0	0	0.00	2.9	2.9	2.90	0.00	2.90	1.9	2.90	0.00	0.00
CO3	3.00	2.90	2.90	0.00	1.9	0	0.00	2.9	3.00	3.00	0.00	2.90	2.9	2.90	0.00	0.00
CO4	2.90	2.90	0.00	0.00	1.9	0	0.00	2.9	2.90	2.90	0.00	2.90	0.0	2.90	0.00	0.00
CO5	2.90	2.90	1.90	0.00	1.9	0	0.00	2.9	2.90	2.90	0.00	2.90	2.9	2.90	0.00	0.00
ATTAIN	2.9	2.9	1.3	-	1.1	0.0	-	2.9	2.9	2.9	0.0	2.9	2.1	2.9	-	-

FACULTY NAME : Dr. S.K. AHIRWAR
 SUBJECT CODE : CE 21007
 SUBJECT NOMN : BUILDING PLANNING & ARCHITECTURE

SESSION : 2022-23
 B.TECH YEAR : II nd YEAR
 SEM : 3rd

COURSE OUTCOME

CO1 :	Identify building components and apply regulations in site planning
CO2 :	Utilize environmental design principles in architectural planning
CO3 :	Implement functional planning and integrate basic building services.
CO4 :	Describe architectural history and the architect's professional role.
CO5 :	Create architectural compositions and produce technical drawings.

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	2	0	0	0	0	0	3	0	0	0	3	1	2	0	0
CO2	2	3	0	2	0	0	0	3	0	0	0	3	1	2	1	1
CO3	3	2	0	2	0	0	0	3	0	0	0	3	1	3	0	0
CO4	2	1	0	2	0	0	0	3	0	0	0	3	1	0	0	0
CO5	2	2	0	3	0	0	0	3	0	0	0	3	1	0	0	0
TARGET	2.4	2	0	2.25	0	0	0	3	0	0	0	3	1	2.333	1	1

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	2.92	1.95	0.00	0.00	0.00	0.00	0.00	2.92	0.00	0.00	0.00	2.92	0.97	1.95	0.00	0.00
CO2	1.95	2.92	0.00	1.95	0.00	0.00	0.00	2.92	0.00	0.00	0.00	2.92	0.97	1.95	0.97	0.97
CO3	2.93	1.95	0.00	1.95	0.00	0.00	0.00	2.93	0.00	0.00	0.00	2.93	0.98	2.93	0.00	0.00
CO4	1.95	0.97	0.00	1.95	0.00	0.00	0.00	2.92	0.00	0.00	0.00	2.92	0.97	0.00	0.00	0.00
CO5	1.93	1.93	0.00	2.90	0.00	0.00	0.00	2.90	0.00	0.00	0.00	2.90	0.97	0.00	0.00	0.00
ATTAINED	2.34	1.95	0.00	2.19	0.00	0.00	0.00	2.92	0.00	0.00	0.00	2.92	0.97	2.27	0.97	0.97

FACULTY NAME : Dr. S.K. AHIRWAR
 SUBJECT CODE : CE 21007
 BUILDING PLANNING & ARCHITECTURE
 SUBJECT NOMN : LAB
 SESSION : 2022-23
 B. TECH YEAR II nd YEAR
 SEM : 3rd

COURSE OUTCOME

CO1 :	Interpret and apply architectural drawing conventions, including sign conventions,
CO2 :	Create accurate architectural drawings for various residential structures, including doors, windows, staircases, and different house types
CO3 :	Utilize AutoCAD software to produce professional-quality plans, elevations, and sections

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	3	3	0	0	0	0	2	2	0	0	3	3	2	1	2
CO2	3	3	3	0	0	0	0	2	3	0	0	3	3	3	1	2
CO3	3	3	3	0	0	0	0	2	3	0	0	3	3	3	1	2
TARGET	3	3	3	0	0	0	0	2	2.667	0	0	3	3	2.667	1	2

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	2.90	2.90	2.90	0	0	0	0	1.93	1.93	0	0	2.90	2.90	1.93	0.97	1.93
CO2	2.90	2.90	2.90	0.00	0.00	0.00	0.00	1.93	2.90	0.00	0.00	2.90	2.90	2.90	0.97	1.93
CO3	2.90	2.90	2.90	0	0	0	0	1.93	2.90	0	0	2.90	2.90	2.90	0.97	1.93
ATTAINED	2.90	2.90	2.90	0.00	0.00	0.00	0.00	1.93	2.58	0.00	0.00	2.90	2.90	2.58	0.97	1.93

21-25

B. Tech II Year CE21504 Transportation Engineering 2023

PO Attainment

CO	CO	2	1
CO1	Attainment	2.5	1.7
CO2		1.5	0.7
CO3		1.8	0.7
CO4		0.9	0.4
CO5		1.0	0.8

PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	Avg CO
PO1	3	3	3	11	8	11	11	11	11	8	11	11	11	11	2.97
PO2	3	3	3	11	8	11	11	11	11	8	11	11	11	11	2.97
PO3	3	3	3	11	8	11	11	11	11	8	11	11	11	11	2.97
PO4	3	3	3	11	8	11	11	11	11	8	11	11	11	11	2.97
PO5	3	3	3	11	8	11	11	11	11	8	11	11	11	11	2.97
PO6	3	3	3	11	8	11	11	11	11	8	11	11	11	11	2.97
PO7	3	3	3	11	8	11	11	11	11	8	11	11	11	11	2.97
PO8	3	3	3	11	8	11	11	11	11	8	11	11	11	11	2.97
PO9	3	3	3	11	8	11	11	11	11	8	11	11	11	11	2.97
PO10	3	3	3	11	8	11	11	11	11	8	11	11	11	11	2.97
PO11	3	3	3	11	8	11	11	11	11	8	11	11	11	11	2.97
PO12	3	3	3	11	8	11	11	11	11	8	11	11	11	11	2.97
PO13	3	3	3	11	8	11	11	11	11	8	11	11	11	11	2.97
PO14	3	3	3	11	8	11	11	11	11	8	11	11	11	11	2.97
Average PO/PSO Attainment	3.0	3.0	3.0	-	-	-	-	-	-	-	-	-	-	-	2.7

PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	Avg CO
PO1	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
PO2	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
PO3	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
PO4	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
PO5	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
PO6	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
PO7	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
PO8	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
PO9	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
PO10	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
PO11	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
PO12	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
PO13	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
PO14	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
Average PO Attainment	2.1	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	1.9
Targeted	3.0	3.0	3.0	-	-	-	-	-	-	-	-	-	-	-	2.7
Gap	0.9	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8

4

FACULTY NAME : Dr. S.K. AHIRWAR
 SUBJECT CODE : CE 21508
 SUBJECT NOMN : ENGINEERING GEOLOGY

SESSION : 2022-23
 B.TECH YEAR : II nd YEAR
 SEM : 4th

COURSE OUTCOME

C01 :	Comprehend fundamental geological concepts and their relevance to civil engineering.
C02 :	Analyze rock properties and structural geology for engineering applications.
C03 :	Evaluate geological hazards, particularly landslides and earthquakes
C04 :	Apply geological investigation techniques for various civil engineering projects.
C05 :	Utilize remote sensing, GPS, and GIS technologies in civil engineering and resource mapping.

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
C01	3	2	0	0	0	2	0	0	0	3	0	3	2	2	1	1
C02	2	3	0	0	0	2	0	0	0	3	0	3	2	3	1	1
C03	3	2	0	0	2	2	0	0	0	3	0	3	2	2	2	2
C04	2	1	0	0	2	2	0	0	0	3	0	3	3	2	2	2
C05	2	2	0	3	2	2	0	0	0	3	0	3	3	2	2	2
TARGET	2.4	2	0	3	0	0	0	0	0	0	0	3	2.4	2.2	1.6	1.6

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
C01	2.87	1.91	0.00	0.00	0.00	1.91	0.00	0.00	0.00	2.87	0.00	2.87	1.91	1.91	0.96	0.96
C02	1.92	2.88	0.00	0.00	0.00	1.92	0.00	0.00	0.00	2.88	0.00	2.88	1.92	2.88	0.96	0.96
C03	2.84	1.89	0.00	0.00	1.89	1.89	0.00	0.00	0.00	2.84	0.00	2.84	1.89	1.89	1.89	1.89
C04	1.92	0.96	0.00	0.00	1.92	1.92	0.00	0.00	0.00	2.88	0.00	2.88	2.88	1.92	1.92	1.92
C05	1.90	1.90	0.00	2.85	1.90	1.90	0.00	0.00	0.00	2.85	0.00	2.85	2.85	1.90	1.90	1.90
ATTAINED	2.29	1.91	0.00	2.85	1.90	1.91	0.00	0.00	0.00	2.86	0.00	2.86	2.29	2.10	1.53	1.53

FACULTY NAME : Dr. S.K. AHIRWAR
 SUBJECT CODE : CE 21508
 SUBJECT NOMN : ENGINEERING GEOLOGY LAB
 SESSION : 2022-2023
 B.TECH YEAR : II nd YEAR
 SEM : 4TH

COURSE OUTCOME

CO1 :	Analyze geological structures including folds, faults, and unconformities
CO2 :	Interpret geological features relevant to civil engineering projects.
CO3 :	Develop skills in geological map reading and cross-section drawing

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	2	0	0	0	0	2	0	0	0	0	2	0	2	2	2
CO2	2	3	0	2	0	0	2	0	2	0	0	2	2	2	2	2
CO3	3	2	0	2	0	0	0	0	2	0	0	2	3	2	1	2
TARGET	2.667	2.333	0	2	0	0	2	0	2	0	0	2	2.5	2	1.667	2

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	2.87	1.91	0.00	0.00	0.00	0.00	1.91	0.00	0.00	0.00	0.00	1.91	0.00	1.91	1.91	1.91
CO2	1.92	2.88	0.00	1.92	0.00	0.00	1.92	0.00	1.92	0.00	0.00	1.92	1.92	1.92	1.92	1.92
CO3	2.86	1.90	0.00	1.90	0.00	0.00	0.00	0.00	1.90	0.00	0.00	1.90	2.86	1.90	0.95	1.90
ATTAINED	2.55	2.23	0.00	1.91	0.00	0.00	1.91	0.00	1.91	0.00	0.00	1.91	2.39	1.91	1.59	1.91

FACULTY NAME:	DR. R. K. KHARE, MR. MAHESH CHANDRA
SUBJECT CODE:	CE 21554
SUBJECT NAME:	STRUCTURAL MECHANICS

SESSION:	2021-2025
B. TECH YEAR:	II
SEM:	IV

CO	Statement
1	Determine the deflection of determinate structures using energy methods
2	Analyze axially loaded and eccentric columns and calculate buckling loads.
3	Analyze curved flexural members, springs, shells and pressure vessels.
4	Compute stresses in beams subjected to unsymmetrical bending.
5	Analyze and interpret response of single degree of freedom systems subjected to harmonic loading.

CD	PO#1	PO#2	PO#3	PO#4	PO#5	PO#6	PO#7	PO#8	PO#9	PO#10	PO#11	PO#12	PSO1	PSO2	PSO3	PSO4
CO1	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0
CO2	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0
CO3	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0
CO4	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0
CO5	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0
Average PO/PSO Attainment	3.0	3.0	3.0	-	-	-	-	-	-	-	-	3.0	3.0	3.0	-	-

CD	PO#1	PO#2	PO#3	PO#4	PO#5	PO#6	PO#7	PO#8	PO#9	PO#10	PO#11	PO#12	PSO1	PSO2	PSO3	PSO4
CO1	2.9	2.9	2.9	0	0	0	0	0	0	0	0	2.9	2.9	2.9	0	0
CO2	2.9	2.9	2.9	0	0	0	0	0	0	0	0	2.9	2.9	2.9	0	0
CO3	2.5	2.5	2.5	0	0	0	0	0	0	0	0	2.5	2.5	2.5	0	0
CO4	2.5	2.5	2.5	0	0	0	0	0	0	0	0	2.5	2.5	2.5	0	0
CO5	2.1	2.1	2.1	0	0	0	0	0	0	0	0	2.1	2.1	2.1	0	0
Average PO/PSO Attainment	2.6	2.6	2.6	-	-	-	-	-	-	-	-	2.6	2.6	2.6	-	-

FACULTY NAME:	
SUBJECT CODE:	CE 21554 / CE 21804
SUBJECT NAME:	STRUCTURAL MECHANICS LAB

SESSION:	2021-2023
B. TECH YEAR:	II
SEM:	IV

CO	Statement
1	Develop a thorough understanding of the behavior of various structural elements (beams, trusses, and columns) under different loading conditions.
2	Apply theoretical principles such as strain energy methods, Euler's theory, and Castiglione's theorem to analyze and predict structural responses.
3	Enhance analytical and computational skills by utilizing experimental results through analytical methods and developing computer programs for structural analysis.
4	Develop proficiency in conducting experiments related to deflection, bending, shear force, and moment of inertia and verify results with theoretical calculations.
5	Gain hands-on experience in using experimental and computational tools to analyze structural elements, enhancing the ability to apply these techniques in real-world engineering problems.

PO Attainment	CO	PO#1	PO#2	PO#3	PO#4	PO#5	PO#6	PO#7	PO#8	PO#9	PO#10	PO#11	PO#12	PSO1	PSO2	PSO3	PSO4
	CO1	3.0	3.0	3.0	-	-	-	-	-	3.0	-	-	3.0	3.0	3.0	-	-
	CO2	3.0	3.0	3.0	-	-	-	-	-	3.0	-	-	3.0	3.0	3.0	-	-
	CO3	3.0	3.0	3.0	-	-	-	-	-	3.0	-	-	3.0	3.0	3.0	-	-
	CO4	3.0	3.0	3.0	-	-	-	-	-	3.0	-	-	3.0	3.0	3.0	-	-
	CO5	3.0	5.0	3.0	-	-	-	-	-	3.0	-	-	3.0	3.0	3.0	-	-
Average PO/PSO Attainment		3.0	3.0	3.0	-	-	-	-	-	3.0	-	-	3.0	3.0	3.0	-	-

PO Attainment	CO	PO#1	PO#2	PO#3	PO#4	PO#5	PO#6	PO#7	PO#8	PO#9	PO#10	PO#11	PO#12	PSO1	PSO2	PSO3	PSO4
	CO1	2.9	2.9	3.0	-	-	-	-	-	2.9	-	-	2.9	2.9	2.9	-	-
	CO2	2.9	2.9	2.9	-	-	-	-	-	2.9	-	-	2.9	2.9	2.9	-	-
	CO3	2.8	2.8	2.8	-	-	-	-	-	2.8	-	-	2.8	2.8	2.8	-	-
	CO4	2.9	2.9	2.9	-	-	-	-	-	2.9	-	-	2.9	2.9	2.9	-	-
	CO5	2.9	2.9	2.9	-	-	-	-	-	2.9	-	-	2.9	2.9	2.9	-	-
Average PO/PSO Attainment		2.9	2.9	2.9	-	-	-	-	-	2.9	-	-	2.9	2.9	2.9	-	-

FACULTY NAME :	Poornu Thapa / Sushinda Poornu	SESSION :	JAN/JUNE 2023
SUBJECT CODE :	CE21502	B.TECH YEAR :	II YEAR
SUBJECT NOMN :	Construction Technology - I	SEM :	IV

COURSE OUTCOME

CO1 :	Describe the various available conventional and new construction materials and techniques.
CO2 :	Explain the suitability of materials required for various structural elements.
CO3 :	Describe the suitability different construction techniques
CO4 :	Apply the suitability of locally available material in building constructions.
CO5 :	Explain the application of globally available equipment's in construction technology.

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	0	0	0	0	2	2	0	0	0	0	2	3	2	0	0
CO2	3	0	0	0	0	2	2	0	0	0	0	2	3	0	0	0
CO3	3	0	0	0	0	2	2	0	0	0	0	2	3	0	0	0
CO4	3	0	0	0	0	2	2	0	0	0	0	2	2	2	0	0
CO5	3	0	0	0	2	2	2	0	0	0	0	2	2	2	0	0
TARGET	3	0	0	0	2	2	2	0	0	0	0	2	2.4	2	0	0

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3.0	0	0	0	0	2.0	2.0	0	0	0	0	2.0	2.96	1.97	0	0
CO2	2.9	0	0	0	0	2.0	2.0	0	0	0	0	2.0	2.95	0	0	0
CO3	2.9	0	0	0	0	2.0	2.0	0	0	0	0	2.0	1.97	1.97	0	0
CO4	2.6	0	0	0	0	1.7	1.7	0	0	0	0	1.7	1.71	1.71	0	0
CO5	2.1	0	0	0	1.4	1.4	1.4	0	0	0	0	1.4	1.42	1.42	0	0
ATTAIN	2.7	-	-	-	1.4	1.8	1.8	-	-	-	-	1.8	2.2	1.8	-	-

FACULTY NAME :	<i>Alvinado Pama / Prasad Thepe</i>	SESSION :	JAN/JUNE 2023
SUBJECT CODE :	CE21801	B.TECH YEAR :	II YEAR
SUBJECT NOMN :	CONSTRUCTION TECHNOLOGY-I LABORATORY	SEM :	IV

COURSE OUTCOME

CO1 :	Analyze and apply fundamental concepts in building construction, including foundations, masonry techniques, and structural elements
CO2 :	Evaluate and compare different types of construction materials and methods used in flooring, roofing, and staircase design.
CO3 :	Develop practical skills in interpreting and creating technical drawings related to various building components and systems.

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	3	0	0	0	0	0	2	0	0	0	3	3	3	0	0
CO2	3	3	0	0	0	0	0	0	0	0	0	3	2	2	0	0
CO3	3	3	0	0	0	0	0	2	0	0	0	3	3	2	0	0
TARGET	3	3	0	0	0	0	0	2	0	0	0	3	2.7	2.3	0	0

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3.0	3.0	0	0	0	0	0	2.0	0	0	0	3.0	2.98	2.98	0	0
CO2	3.0	3.0	0	0	0	0	0	0	0	0	0	3.0	1.99	1.99	0	0
CO3	3.0	3.0	0	0	0	0	0	2.0	0	0	0	3.0	2.98	1.99	0	0
ATTAIN	3.0	3.0	-	-	-	-	-	2.0	-	-	-	3.0	2.6	2.3	-	-

FACULTY NAME : MR. TARUN KUMAR NARNURE, MS. NAVARATA KHEDE
 SUBJECT CODE : CE41674 (CE41684)
 SUBJECT NAME : ADVANCE TRANSPORTATION ENGINEERING

SESSION : 2023-24
 B.TECH YEAR : III YEAR
 SEM : 5th

COURSE OUTCOME

CO1 :	Evaluate the economic aspects of highway projects, including cost components and
CO2 :	Develop and apply transportation demand models to predict and analyze travel behavior and demand
CO3 :	Analyze traffic and transportation problems in urban areas, and classify various
CO4 :	Analyze various urban public transportation systems, including BRTS, bus lanes, and rail systems, in the context of their advantages and limitations
CO5 :	Select the different construction equipment for pavement construction, considering factors

CO-PO TARGET MATRIX

CO	PO#1	PO#2	PO#3	PO#4	PO#5	PO#6	PO#7	PO#8	PO#9	PO#10	PO#11	PO#12	PSO1	PSO2	PSO3	PSO4
CO1	3	3	2	1	0	1	0	0	0	0	1	1	3.00	3.00	2.00	3.00
CO2	3	3	1	2	3	2	0	0	0	0	0	0	3.00	3.00	3.00	3.00
CO3	1	2	3	1	0	2	2	0	0	0	1	0	3.00	3.00	3.00	3.00
CO4	1	1	3	1	0	2	2	2	0	0	3	1	3.00	3.00	3.00	3.00
CO5	3	1	1	1	0	1	0	0	0	0	0	0	3.00	3.00	2.00	2.00
TARGET	2.2	2.0	2.0	1.2	0.6	1.6	0.8	0.4	-	-	1.0	0.4	3.0	3.0	2.6	2.8

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	2.74	2.74	1.82	0.91	0	0.91	0	0	0	0	0.91	0.91	1.56	2.74	2.74	1.82
CO2	2.94	2.94	0.98	1.96	2.94	1.96	0	0	0	0	0	0	2.29	2.94	2.94	2.94
CO3	0.90	1.79	2.69	0.90	0	1.79	1.79	0	0	0	0.90	0	1.54	2.69	2.69	2.69
CO4	0.98	0.98	2.93	0.98	0	1.95	1.95	1.95	0	0	2.93	0.98	1.74	2.93	2.93	2.93
CO5	2.30	0.77	0.77	0.77	0	0.77	0	0	0	0	0	0	1.07	2.30	2.30	1.54
ATTAIN	2.0	1.8	1.8	1.1	2.9	1.5	1.9	2.0	-	-	1.6	0.9	1.6	2.7	2.7	2.4
TARGET	2.2	2.0	2.0	1.2	0.6	1.6	0.8	0.4	-	-	1.0	0.4	3.0	3.0	2.6	2.8

FACULTY NAME : MR. TANUJ KUMAR NATHANIEL MS. NAMRATA KHEDDE
 SUBJECT CODE : CE41574 JCE41574
 SUBJECT NAME : ADVANCE TRANSPORTATION ENGINEERING

SESSION :
 BATCH YEAR :
 SEM :
 2023-24
 4th YEAR
 4th

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COURSE OUTCOME

CO1 : To select the economic aspects of highway projects, including cost components and

CO2 : To develop and apply microeconomic and models to predict and analyze traffic behavior and demand

CO3 : Analyze traffic and transportation problems in urban areas and develop various

CO4 : Analyze various urban problems in transportation systems, including traffic flow, bus lanes, and rail systems, in the context of their advantages and limitations

CO5 : Select the different construction equipment for pavement construction, considering factors

CO	CO PO TARGET MATRIX									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	2	1	0	1	0	0	0	1
CO2	3	3	1	2	3	2	0	0	0	0
CO3	1	2	3	1	0	2	0	0	0	1
CO4	1	1	3	1	0	2	0	0	0	3
CO5	3	1	1	1	0	1	0	0	0	3
TARGET	2.2	2.0	2.0	1.2	0.6	1.6	0.8	0.4	-	1.0

CO	CO PO ATTAIN MATRIX									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	0.80	2.40	1.60	0.80	0.40	1.60	0.80	0.40	0.40	0.80
CO2	2.40	2.40	0.80	1.60	2.40	1.60	0.40	0.40	0.40	0.40
CO3	0.80	1.60	2.40	0.80	0.40	1.60	0.40	0.40	0.40	0.40
CO4	0.80	0.80	2.40	0.80	0.40	1.60	0.40	0.40	0.40	0.40
CO5	0.80	0.80	0.80	0.80	0.40	0.40	0.40	0.40	0.40	0.40
ATTAIN	0.8	1.5	1.5	0.9	0.4	1.4	0.6	0.3	-	0.7
TARGET	1.0	1.0	1.0	0.5	0.3	1.0	0.5	0.3	-	0.5

FACULTY NAME : MR. TARUN KUMAR NARNURE, MS. NAMRATA KHEDE
 SUBJECT CODE : CE 31201
 SUBJECT NAME : ADVANCE HIGHWAY AND AIRPORT ENGINEERING

SESSION : 2023-24
 B. TECH YEAR : III YEAR
 SEM : 5th

COURSE OUTCOME

CO1 :	Identify and evaluate the properties of highway materials relevant to pavement performance and construction. Describe the various available conventional and new.
CO2 :	Solve design problems related to flexible and rigid pavements using standard methods and guidelines. Explain the suitability of materials required for various.
CO3 :	Analyse key factors influencing pavement design and compare different design methodologies. Describe the suitability of different construction techniques.
CO4 :	Interpret aircraft characteristics and integrate them into airport planning, highway construction procedures, and maintenance practices. Apply the suitability of locally.
CO5 :	Develop airport layout plans and perform structural design of airport pavements based on technical criteria. Explain the application of globally available equipments in.

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	3	2	3	0	0	0	0	0	0	0	0	3	3	1	2
CO2	3	3	2	3	0	0	0	0	0	0	0	0	3	3	1	1
CO3	2	2	3	3	0	0	0	0	0	0	0	0	2	3	2	2
CO4	2	2	3	2	0	2	0	0	0	0	0	0	2	3	1	2
CO5	2	3	3	3	0	2	0	0	0	0	0	0	3	3	1	1
TARGET	2.4	2.6	2.6	2.4	-	0.8	-	-	-	-	-	-	2.6	3.0	1.2	1.6

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	2.00	2.00	1.33	1.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.67	1.33
CO2	2.36	2.36	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.36	2.36	0.79	0.79
CO3	1.35	1.35	2.03	2.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35	2.03	1.35	1.35
CO4	1.57	1.57	2.36	1.57	0.00	1.57	0.00	0.00	0.00	0.00	0.00	0.00	1.57	2.36	0.79	1.57
CO5	1.31	1.96	1.96	1.96	0.00	1.31	0.00	0.00	0.00	0.00	0.00	0.00	1.96	1.96	0.65	0.65
ATTAIN	1.7	1.8	1.9	1.7	-	0.6	-	-	-	-	-	-	1.8	2.1	0.8	1.1
TARGET	2.4	2.6	2.6	2.4	-	0.8	-	-	-	-	-	-	2.6	3.0	1.2	1.6

FACULTY NAME : MR. TARUN KUMAR NARNURE, MS. NAMRATA KHEDE
 SUBJECT CODE : CE 31201
 SUBJECT NAME : ADVANCE HIGHWAY AND AIRPORT ENGINEERING

COURSE OUTCOME

- CO1 : Identify and evaluate the properties of highway materials relevant to pavement performance and construction. Describe the various available conventional and new
 CO2 : Solve design problems related to flexible and rigid pavements using standard methods and guidelines. Explain the suitability of materials required for various
 CO3 : Analyze key factors influencing pavement design and compare different design methodologies. Describe the suitability of materials required for various
 CO4 : Interpret aircraft characteristics and integrate them into airport planning, highway construction procedures, and maintenance practices. Apply the suitability of locally
 CO5 : Develop airport layout plans and perform structural design of airport pavements based on technical criteria. Explain the application of globally available equipments in

SESSION : 2023-24
 B. TECH YEAR : III YEAR
 SEM : 5th

CO-PO TARGET MATRIX																
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	3	2	2	0	0	0	0	0	0	0	0	3	3	1	2
CO2	3	3	2	2	0	0	0	0	0	0	0	0	3	3	1	2
CO3	2	2	3	3	0	0	0	0	0	0	0	0	3	3	1	1
CO4	2	2	3	2	0	0	0	0	0	0	0	0	2	3	2	2
CO5	2	3	3	3	0	2	0	0	0	0	0	0	2	3	1	2
TARGET	2.4	2.6	2.6	2.4	-	0.8	-	-	-	-	-	-	2.6	3.0	1.2	1.6

CO-PO ATTAIN MATRIX																
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	2.00	2.00	1.33	1.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.67	1.33
CO2	2.36	2.36	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.36	2.36	0.79	0.79
CO3	1.35	1.35	2.03	2.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35	2.03	1.35	1.35
CO4	1.37	1.57	2.36	1.57	0.00	1.57	0.00	0.00	0.00	0.00	0.00	0.00	1.57	2.36	0.79	1.57
CO5	1.31	1.96	1.96	1.96	0.00	1.31	0.00	0.00	0.00	0.00	0.00	0.00	1.96	1.96	0.65	0.65
ATTAIN	1.7	1.8	1.9	1.7	-	0.6	-	-	-	-	-	-	1.8	2.1	0.8	1.1
TARGET	2.4	2.6	2.6	2.4	-	0.8	-	-	-	-	-	-	2.6	3.0	1.2	1.6

INSTITUTION : M. JARIN KUTAR VARNAMERI, MK
NAME : NAVARAJA NEDDI
SUBJECT : CIVIL
SUBJECT : ADVANCE HIGHWAY AND AIRPORT
ENGINEERING

SESSION : 2021-24
B.TECH YEAR III
SEM : B

COURSE OUTCOME

CO1 :	Assess the evaluation of physical properties of aggregates.
CO2 :	Analyze the mechanical properties and durability of aggregates.
CO3 :	Study the rheological properties and behavior of bituminous materials. Study the rheological properties and behavior of bituminous materials.
CO4 :	Develop expertise in designing bituminous concrete mixes and road drainage systems.
CO5 :	Evaluate pavement performance and design rehabilitation strategies.

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	0	0	0	0	0	0	2	2	0	2	3	3	1	2	2
CO2	3	0	0	0	0	0	0	2	2	0	2	3	3	1	1	1
CO3	2	0	0	0	0	2	2	2	0	0	3	2	3	1	1	1
CO4	2	0	0	0	0	2	2	2	0	0	3	2	3	2	2	2
CO5	2	0	0	0	0	2	2	2	0	0	3	2	3	2	2	2
TARGET	2.30	0.00	0.00	0.00	0.00	1.2	1.16	0.80	2.00	0.00	2.00	2.30	3.00	1.40	1.60	1.60
CO-PO ATTAIN MATRIX																
CO1	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	2.00	0.00	0.00	0	0	0	0	4.0	1.0	0.00	1.00	2.00	2.0	1.00	1.00	1.00
CO2	2.00	0.00	0.00	0	0	0	0.00	4.0	2.0	0.00	1.00	2.00	2.0	1.00	1.00	1.00
CO3	1.00	0.00	0.00	0	0	1.0	1.00	2.0	0.00	0.00	2.00	1.00	2.0	1.00	1.00	1.00
CO4	1.00	0.00	0.00	0	0	1.0	1.00	2.0	0.00	0.00	2.00	1.00	2.0	1.00	1.00	1.00
CO5	1.00	0.00	0.00	0	0	1.0	1.00	2.0	0.00	0.00	2.00	1.00	2.0	1.00	1.00	1.00
Average	2.3	-	-	-	-	1.1	1.4	0.8	1.0	-	2.5	2.3	2.9	1.4	1.5	1.5

FACULTYDR. FARUK ALI NAH NARAYAN, MSc
NARAYANA MHI 201**NAME :**

NARAYANA MHI 201

SESSION : 2021-25

SUBJECT :

CE31201

CODE :

ADVANCE HIGHWAY AND AIRPORT

B.TECH YEAR : III

SEM : B

COURSE OUTCOME

CO1 :	Identify and evaluate the properties of highway materials relevant to pavement performance and construction.
CO2 :	Solve design problems related to flexible and rigid pavements using standard methods and guidelines.
CO3 :	Analyze key factors influencing pavement design and compare different design methodologies.
CO4 :	Interpret aircraft characteristics and integrate them into airport planning, highway construction procedures, and maintenance practices.
CO5 :	Develop airport layout plans and perform structural design of airport pavements based on technical criteria.

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	3	2	2	0	0	0	0	0	0	0	0	3	3	1	2
CO2	3	3	2	2	0	0	0	0	0	0	0	0	3	3	1	1
CO3	2	2	3	3	0	0	0	0	0	0	0	0	2	3	2	2
CO4	2	2	3	2	0	2	0	0	0	0	0	0	2	3	1	2
CO5	2	3	3	3	0	2	0	0	0	0	0	0	3	3	1	1
TARGET	2.4	2.6	2.6	2.4	-	0.8	-	-	-	-	-	-	2.6	3.0	1.2	1.6

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	2.3	2.3	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	2.3	0.8	1.6
CO2	2.3	2.3	1.5	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	2.3	0.8	0.8
CO3	1.6	1.6	2.3	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	2.3	1.6	1.6
CO4	1.6	1.6	2.4	1.3	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1.6	2.4	0.8	1.6
CO5	1.5	2.3	2.3	2.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	2.3	2.3	0.8	0.8
ATTAIN	1.9	2.0	2.0	1.8	-	0.6	-	-	-	-	-	-	2.0	2.3	0.9	1.2

FACULTY NAME:	DR. H.K. MAHAPATRA, MR. M.K. LAGHATE
SUBJECT CODE:	CE 31007
SUBJECT NAME:	STRUCTURAL ANALYSIS I

SESSION:	2021-2025
B.TECH YEAR:	III
SEM:	V

CO	Statement
1	Compute deflections using different methods to analyze indeterminate structures with various loads and supports. Differentiate between determinate/indeterminate and stability/instability.
2	Analyze the two degree indeterminate problems using the concept of strain energy.
3	Analyze fixed and continuous beams with varying cross-sections and support settlements.
4	Illustrate the influence lines and rolling loads for beams, trusses, and bridges.
5	Analyze arches, cables and suspension bridges with influence lines.

CO	PO#1	PO#2	PO#3	PO#4	PO#5	PO#6	PO#7	PO#8	PO#9	PO#10	PO#11	PO#12	PSO1	PSO2	PSO3	PSO4
PO Attainment	3.0	3.0	2.0	0.0	0.0	3.0	4.0	0.0	0.0	0.0	0.0	2.0	3.0	3.0	2.0	0.0
CO1	3.0	3.0	2.0	0.0	0.0	3.0	4.0	0.0	0.0	0.0	0.0	2.0	3.0	3.0	2.0	0.0
CO2	3.0	3.0	2.0	0.0	0.0	3.0	4.0	0.0	0.0	0.0	0.0	2.0	3.0	3.0	2.0	0.0
CO3	3.0	3.0	2.0	0.0	0.0	3.0	4.0	0.0	0.0	0.0	0.0	2.0	3.0	3.0	2.0	0.0
CO4	3.0	3.0	2.0	0.0	0.0	3.0	4.0	0.0	0.0	0.0	0.0	2.0	3.0	3.0	2.0	0.0
CO5	3.0	3.0	2.0	0.0	0.0	3.0	4.0	0.0	0.0	0.0	0.0	2.0	3.0	3.0	2.0	0.0
Average PO/PSO Attainment	3.0	3.0	2.0	-	-	3.0	-	-	-	-	-	1.8	3.0	3.0	1.6	-

CO	PO#1	PO#2	PO#3	PO#4	PO#5	PO#6	PO#7	PO#8	PO#9	PO#10	PO#11	PO#12	PSO1	PSO2	PSO3	PSO4
PO Attainment	2.7	2.7	1.8	0	0	2.7	4	0	0	0	0	1.8	2.7	2.7	1.8	0
CO1	2.7	2.7	1.8	0	0	2.7	4	0	0	0	0	1.8	2.7	2.7	1.8	0
CO2	2.7	2.7	1.8	0	0	2.7	4	0	0	0	0	1.8	2.7	2.7	1.8	0
CO3	2.7	2.7	1.8	0	0	2.7	4	0	0	0	0	1.8	2.7	2.7	1.8	0
CO4	2.7	2.7	1.8	0	0	2.7	4	0	0	0	0	1.8	2.7	2.7	1.8	0
CO5	2.7	2.7	1.8	0	0	2.7	4	0	0	0	0	1.8	2.7	2.7	1.8	0
Average PO/PSO Attainment	2.6	2.6	1.8	-	-	2.6	-	-	-	-	-	1.6	2.6	2.6	1.4	-

FACULTY	Prof. Divyendra Bohari, Prof. Soumya Sahu
SUBJECT CODE	CE31703
SUBJECT NAME	WATER AND WASTEWATER TREATMENT TECHNOLOGIES

SESSION	2023-24
B.TECH YEAR	III
SEM	VI

COURSE OUTCOME

CO1 :	Explain impact of raw water quality on health and its mitigation, design of sedimentation tank, its types and factors affecting settling.
CO2 :	Analyze coagulants, factors affecting coagulation, jar test, design of Clariflocculator, Filtration unit, its types and multimedia filters.
CO3 :	Apply methods of disinfection, usage of free chlorine and combined chlorine, mechanism of chlorination with their advantage and disadvantage.
CO4 :	Design preliminary, primary and secondary treatment units of conventional sewage treatment plant.
CO5 :	Design biological treatment units viz. Activated sludge plant, SBR and methods of sludge treatment and disposal.

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	2	3	1	0	2	2	1	1	0	0	1	2	3	1	3
CO2	3	2	3	1	0	0	1	0	0	0	0	0	3	3	1	2
CO3	3	1	3	1	0	0	2	0	0	0	0	0	2	3	1	2
CO4	3	2	2	1	0	1	2	0	0	0	0	1	1	3	3	2
CO5	3	1	2	1	0	0	1	0	0	0	0	0	3	3	2	2
TARGET	3	16	26	1	0	15	16	1	1	0	0	1	22	3	16	22

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	2.5	1.7	2.5	0.8	0	1.7	1.7	0.8	0.5	0	0	0.8	1.7	2.5	0.8	2.5
CO2	1.9	1.3	1.9	0.6	0	0	0.6	0	0	0	0	0	1.9	1.9	0.6	1.3
CO3	2.5	0.8	2.5	0.8	0	0	1.7	0	0	0	0	0	1.7	2.5	0.8	1.7
CO4	1.5	1.0	1.0	0.5	0	0.5	1.0	0	0	0	0	0.5	0.5	1.5	1.5	1.0
CO5	1.3	0.4	0.9	0.4	0	0	0.4	0	0	0	0	0	1.3	1.3	0.9	0.9
ATTAIN	1.9	1.0	1.8	0.6	-	1.1	1.1	0.6	0.6	-	-	0.7	1.6	1.9	0.9	1.5

FACULTY	Prof. Shweta Gajjar, Prof. Soumya Salveera
SUBJECT CODE	CE31703 Lab
SUBJECT NAME	WATER AND WASTEWATER TREATMENT TECHNOLOGIES Lab

SESSION	2023-24
B.TECH YEAR	III
SEM	VI

COURSE OUTCOME

CO1:	Apply analytical techniques to measure specific contaminants and quality parameters in water and wastewater samples, including arsenic, fluoride, and nitrogen
CO2:	Conduct jar tests to determine optimal coagulation dosages and analyze sludge characteristics for water and wastewater treatment applications.
CO3:	Evaluate solid waste properties and utilize Indian and international standards for water quality assessment and management.

CO-PO TARGET MATRIX												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3.0	2.0	0.0	1.0	1.0	1.0	2.0	0.0	2.0	2.0	0.0	1.0
CO2	3.0	3.0	1.0	2.0	0.0	0.0	2.0	2.0	0.0	1.0	3.0	3.0
CO3	3.0	1.0	0.0	0.0	0.0	2.0	2.0	1.0	2.0	2.0	0.0	2.0
TARGET	3.0	2.0	1.0	1.5	1.0	1.5	2.0	1.5	2.0	1.7	3.0	2.0

CO-PO ATTAIN MATRIX												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3.0	2.0	0	1.0	1.0	1.0	1.9	0	1.9	1.9	0	1.0
CO2	3.0	3.0	1.0	2.0	0	0	2.0	2.0	0	1.0	3.0	3.0
CO3	3.0	1.0	0	0	0	2.0	2.0	1.0	2.0	2.0	0	2.0
ATTAIN	3.0	2.0	1.0	1.5	1.0	1.5	2.0	1.5	2.0	1.6	3.0	2.0

FACULTY NAME : Ms. Shrutti Bajpai, Mr. Devendra Dohare
 SUBJECT CODE : CEE3
 SUBJECT NOMN : ENVIRONMENTAL ENGINEERING

SESSION : 2023-24
 B.TECH YEAR : III
 SEM : VI

COURSE OUTCOME

- CO1 : Determine types of sources, intake works and common impurities in water, population forecasting methods and examination of physicochemical and bacteriological quality of water.
 CO2 : Describe pipes used in water supply scheme-types of joints, valves, fittings etc. including corrosion in pipes.
 CO3 : Analyze water distribution network and aspects of leak detection.
 CO4 : Determine and analyze quality of wastewater/sewage and significance of various parameter related to same.
 CO5 : Classify types of sewerage system and analyze hydraulic design of sewers.

CO-PO TARGET MATRIX													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1
CO1	3	3	2	0	0	2	1	0	0	0	0	0	3
CO2	3	3	1	0	0	0	0	0	0	0	0	0	3
CO3	3	2	1	0	2	0	1	0	0	0	0	0	2
CO4	3	2	0	0	0	2	0	0	0	0	0	0	3
CO5	3	2	1	0	0	0	0	0	0	0	0	0	3
TARGET	3	2.4	1.25	0	2	2	1	0	0	0	0	0	3

CO-PO ATTAIN MATRIX													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1
CO1	1.9	1.9	1.3	0.0	0.0	1.3	0.6	0.0	0.0	0.0	0.0	0.0	1.3
CO2	1.9	1.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
CO3	2.1	1.4	0.7	0.0	1.4	0.0	0.7	0.0	0.0	0.0	0.0	0.0	1.4
CO4	2.3	1.5	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	1.5
CO5	0.9	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
ATTAIN	1.8	1.5	0.6	0.0	1.4	1.4	0.7	0.0	0.0	0.0	0.0	0.0	1.2

FACULTY NAME :	1) Prof. Dr. S.B. AJMERA	2) Ms. IQRA MANSURI	SESSION :	2021-25
SUBJECT CODE :	CE-41006		B.TECH YEAR :	IV YEAR
SUBJECT NOUN :	DESIGN OF HYDRAULIC STRUCTURES		SEM :	VII
COURSE OUTCOME				
CO1 :	Apply digital tools to design water channels using Kennedy's and Lacey's theories.			
CO2 :	Analyze and design gravity dams and earthen dams using spread sheet software.			
CO3 :	Develop skills in designing hydraulic structures including vertical drop weirs and barrages.			
CO4 :	Calculate reservoir capacity and flood hydrographs using various methods.			
CO5 :	Generate and manipulate unit hydrographs using different techniques including Snyder's method and S-curve technique.			

CO-PO TARGET MATRIX																
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	0	3	0	2	0	0	3	0	0	0	3	3	3	2	2
CO2	3	2	3	0	3	0	0	3	0	0	0	3	3	3	3	3
CO3	3	3	3	3	2	0	0	3	0	0	0	3	2	3	3	3
CO4	3	3	0	3	2	0	0	0	0	0	0	3	3	3	3	3
CO5	3	2	0	0	0	0	0	0	0	0	0	3	3	3	3	3
TARGET	3	2.5	3	3	2.25	-	-	3	-	-	-	3	2.8	3	2.8	2.8

CO-PO ATTAIN MATRIX																
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	2.9	0	2.9	0	1.9	0	0	2.9	0	0	0	2.9	2.9	2.9	1.9	1.9
CO2	2.9	1.9	2.9	0	2.9	0	0	2.9	0	0	0	2.9	2.9	2.9	2.9	2.9
CO3	2.8	2.8	2.8	2.8	1.9	0	0	2.8	0	0	0	2.8	1.9	2.8	2.8	2.8
CO4	2.9	2.9	0	2.9	1.9	0	0	0	0	0	0	2.9	2.9	2.9	2.9	2.9
CO5	2.9	1.9	0	0	0	0	0	0	0	0	0	2.9	2.9	2.9	2.9	2.9
ATTAIN	2.9	2.4	2.9	2.9	2.2	-	-	2.9	-	-	-	2.9	2.7	2.9	2.7	2.7

FACULTY NAME :	1) Prof. Dr. S.B. AJMERIA	2) Ms. IQRA MANSURI	SESSION :	2021-25
SUBJECT CODE :	CE-41006		B.TECH YEAR :	IV YEAR
SUBJECT NOMIN :	DESIGN OF HYDRAULIC STRUCTURES		SEM :	VII
COURSE OUTCOME				
CO1 :	Design and analyze gravity dams, including force determination, stability assessment, and profile design.			
CO2 :	Evaluate and design earthen dams, focusing on foundation suitability, material selection, and seepage control.			
CO3 :	Apply theories to analyze hydraulic structures on pervious foundations.			
CO4 :	Apply theories to analyze hydraulic structures on pervious foundations.			
CO5 :	Design canal regulation structures, including falls, cross-drainage works, and regulators.			

CO-PO TARGET MATRIX												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	0	0	0	0	0	0	0	0	3
CO2	3	2	2	3	0	0	0	3	0	0	0	3
CO3	3	2	3	3	0	0	0	3	0	0	0	3
CO4	3	3	3	3	0	0	0	3	0	0	0	3
CO5	3	0	2	0	0	0	0	3	0	0	0	3
TARGET	3	2.5	2.4	3	0	0	0	3	0	0	0	3

CO-PO ATTAIN MATRIX												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2.3	2.3	1.5	0	0	0	0	0	0	0	0	2.3
CO2	1.1	0.8	0.8	1.1	0	0	0	1.1	0	0	0	1.1
CO3	1.9	1.3	1.9	1.9	0	0	0	1.9	0	0	0	1.9
CO4	1.5	1.5	1.5	1.5	0	0	0	1.5	0	0	0	1.5
CO5	1.5	0	1.0	0	0	0	0	1.5	0	0	0	1.5
ATTAIN	1.7	1.5	1.3	1.5	-	-	-	1.5	-	-	-	1.7

FACULTY NAME :		SESSION :	2021-25
SUBJECT CODE :	CE-41498	B.TECH YEAR :	IV YEAR
SUBJECT NOMEN :	MINDR PROJECT	SEM :	VII

COURSE OUTCOME

CO1 :	Establish motivation for any topic of interest and define objectives of the project work.
CO2 :	Organize a detailed literature survey and build a document with respect to technical publications
CO3 :	Demonstrate skill of selecting alternative out of all the available choices with reference to functional, aesthetic, social, economic, or environmental consideration.
CO4 :	Apply various tools and techniques needed for project development
CO5 :	Demonstrate effective presentation and soft skills.
CO6 :	Prepare a well-organized report employing elements of technical writing and critical thinking.

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1
CO2	2	1	1	2	1	1	1	1	2	1	1	1	1	1	3	1
CO3	2	2	2	2	2	3	3	1	2	1	1	2	2	2	1	3
CO4	2	2	2	1	3	2	2	1	2	1	3	1	2	2	2	2
CO5	1	1	2	1	3	2	1	2	2	3	2	3	2	2	1	1
CO6	2	1	1	1	3	2	1	1	2	2	2	3	1	2	1	1
TARGET	1.8	1.3	1.5	1.3	2.2	1.8	1.5	1.2	2.0	1.5	1.7	1.8	1.5	1.7	1.5	1.5

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
CO2	1.9	1.0	1.0	1.9	1.0	1.0	1.0	1.0	1.9	1.0	1.0	1.0	1.0	1.0	2.9	1.0
CO3	1.9	1.9	1.9	1.9	1.9	2.9	2.9	1.0	1.9	1.0	1.0	1.9	1.9	1.9	1.0	2.9
CO4	2.0	2.0	2.0	1.0	2.9	2.0	2.0	1.0	2.0	1.0	2.9	1.0	2.0	2.0	2.0	2.0
CO5	1.0	1.0	2.0	1.0	2.9	2.0	1.0	2.0	2.0	2.9	2.0	2.9	2.0	2.0	1.0	1.0
CO6	2.0	1.0	1.0	1.0	2.9	2.0	1.0	1.0	2.0	2.0	2.0	2.9	1.0	2.0	1.0	1.0
ATTAIN	1.8	1.3	1.5	1.3	2.1	1.8	1.5	1.1	1.9	1.5	1.6	1.8	1.5	1.6	1.5	1.5

FACULTY	VEN. SHRI TRIBHUPAL M. NAVARKA	SESSION :	2021-25
NAME :	KHUR	B.TECH YEAR IV	
SUBJECT	CE	SEM : B	
CODE :	41882		
SUBJECT CODE	Industrial Training/Internship		

COURSE OUTCOME

CO1 :	Explain about the project visited/studied during the internship
CO2 :	Describe use of advanced tools and techniques encountered in project undertaken during industrial training and visit.
CO3 :	Write the evidences about the interaction with industrial personnel
CO4 :	Exhibit awareness about general workplace behaviour and build interpersonal and team skills.
CO5 :	Prepare professional work reports and presentations.

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	1	1	1	2	1	1	1	1	1	1	3	2	1	1	1	1
CO2	2	2	2	2	3	2	1	1	1	1	3	2	1	2	2	1
CO3	1	1	1	2	1	2	2	3	3	3	3	2	1	2	1	1
CO4	1	1	2	1	1	1	1	3	3	2	3	3	1	1	1	3
CO5	3	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1
TARGET	1.6	1.4	1.6	1.8	1.6	1.6	1.4	2.0	2.0	1.8	2.8	2.2	1.0	1.4	1.2	1.4
CO-PO ATTAIN MATRIX																
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	0.00	0.00	0.00	0.90	0	0	0.60	0.0	0.0	0.00	1.40	0.90	0.0	0.00	0.00	0.00
CO2	0.90	0.90	0.90	0.90	1.4	0.9	0.60	0.0	0.0	0.00	1.40	0.90	0.0	0.90	0.90	0.00
CO3	0.00	0.00	0.00	0.90	0	0.9	0.90	1.3	1.30	1.30	1.30	0.90	0	0.90	0.00	0.00
CO4	1.00	1.00	1.50	1.00	1	1	1.00	2.2	2.20	1.50	2.20	2.20	1.0	1.00	1.00	2.20
CO5	3.00	2.00	2.00	2.00	2	2	2.00	2.0	2.00	2.00	2.00	2.00	1	1.00	1.00	0.00
ATTAIN	1.0	0.8	0.9	1.1	0.9	1.0	0.8	1.1	1.1	1.0	1.7	1.4	0.4	0.8	0.6	0.4

FACULTY	MR. EAJUN KUMAR NARNAJUREL	SESSION :	2021-25
NAME :	MS. NAMRATA KHEDDE	B.TECH YEAR IV	
SUBJECT	CE	SEM : B	
CODE :	41674		
SUBJECT :	ADVANCE TRANSPORTATION		
	ENGINEERING		

COURSE OUTCOME

CO1 :	Evaluate the economic aspects of highway projects, including cost components and parameters.
CO2 :	Develop and apply transportation demand models to predict and analyze travel behavior and demand.
CO3 :	Analyze traffic and transportation problems in urban areas, and classify various transportation modes and their characteristics.
CO4 :	Analyze various urban public transportation systems, including BRTS, bus lanes, and rail systems, in the context of their advantages and limitations.
CO5 :	Select the different construction equipment for pavement construction, considering factors like selection, cost, and output.

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	3	2	1	0	1	0	0	0	0	1	1	3	3	2	3
CO2	3	3	1	2	3	2	0	0	0	0	0	0	3	3	3	3
CO3	1	2	3	1	0	2	2	0	0	0	1	0	3	3	3	3
CO4	1	1	3	1	0	2	2	2	0	0	3	1	3	3	3	3
CO5	3	1	1	1	0	1	0	0	0	0	0	0	3	3	2	2
TARGET	2.2	2.0	2.0	1.2	3.0	1.6	2.0	2.0	0.0	0.0	1.7	1.0	3.0	3.0	2.6	2.8

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	2.4	2.4	1.6	0.8	0.0	0.8	0.0	0.0	0.0	0.0	0.8	0.8	2.4	2.4	1.6	2.4
CO2	2.4	2.4	0.8	1.5	2.4	1.6	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.4	2.4	2.4
CO3	0.7	1.5	2.2	0.7	0.0	1.5	1.5	0.0	0.0	0.0	0.7	0.0	2.2	2.2	2.2	2.2
CO4	0.8	0.8	2.4	0.7	0.0	1.6	1.6	1.6	0.0	0.0	2.4	0.8	2.4	2.4	2.4	2.4
CO5	2.4	0.8	0.8	0.8	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.4	1.6	1.6
ATTAIN	1.7	1.6	1.6	0.9	0.5	1.3	0.6	0.3	-	-	0.8	0.3	2.4	2.4	2.0	2.2

Batch 20-25

B.Tech. II Year CE41775 FINITE ELEMENT METHOD

PO Attainment

CO	Attainment	1	2
CO1	2.68	1.79	0.89
CO2	2.91	1.94	0.97
CO3	2.47	1.54	0.82
CO4	2.10	1.40	0.70
CO5	2.27	1.51	0.76

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	Avg PO	PSO1	PSO2	PSO3	PSO4	Avg PSO
PO Attainment	3	3	3	3	3	3	3	3	3	3	3	3	2.60	3	2	3	2	2.50
CO1	3	3	3	3	3	3	3	3	3	3	3	3	2.80	3	3	3	3	2.75
CO2	3	3	3	3	3	3	3	3	3	3	3	3	2.80	3	3	3	3	2.75
CO3	3	3	3	3	3	3	3	3	3	3	3	3	2.80	3	3	3	3	2.75
CO4	3	3	3	3	3	3	3	3	3	3	3	3	2.80	3	3	3	3	2.75
CO5	3	3	3	3	3	3	3	3	3	3	3	3	2.80	3	3	3	3	2.75
Average PO/PSO Attainment	3.0	3.0	2.8	3.0	1.8	-	-	-	-	-	-	-	2.7	3.0	2.8	3.0	2.0	2.7

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	Avg PO	PSO1	PSO2	PSO3	PSO4	Avg PSO
PO Attainment	1.68	2.68	1.79	2.48	0.89	0	0	0	0	0	0	0	2.14	2.68	1.79	2.68	1.79	2.23
CO1	1.68	2.68	1.79	2.48	0.89	0	0	0	0	0	0	0	2.14	2.68	1.79	2.68	1.79	2.23
CO2	2.91	2.91	2.91	2.91	1.94	0	0	0	0	0	0	0	2.72	2.91	2.91	2.91	1.94	2.67
CO3	2.47	2.47	2.47	2.47	1.64	0	0	0	0	0	0	0	2.38	2.47	2.47	2.47	1.64	2.26
CO4	2.10	2.10	2.10	2.10	1.40	0	0	0	0	0	0	0	1.96	2.10	2.10	2.10	1.40	1.92
CO5	2.27	2.27	2.27	2.27	1.51	0	0	0	0	0	0	0	2.11	2.27	2.27	2.27	1.51	2.08
Average PO/PSO Attainment	2.5	2.5	2.3	2.5	1.5	-	-	-	-	-	-	-	2.2	2.5	2.3	2.5	1.7	2.2
Target PO/PSO	3.0	3.0	2.8	3.0	1.8	-	-	-	-	-	-	-	2.7	3.0	2.8	3.0	2.0	2.7
GAP PO/PSO	0.5	0.5	0.5	0.5	0.3	-	-	-	-	-	-	-	0.5	0.5	0.5	0.5	0.3	0.5

FACULTY NAME :		Ms. Shruti Bujpai, Ms. Namrata Khede										SESSION : 2024-25			
SUBJECT CODE :		CE-41882										B.TECH YEAR : 4 YEAR			
SUBJECT NAME :		(Industrial Training/Internship)										SEM : 8 SEM.			
COURSE OUTCOME															
CO1 :	Explain about the project														
CO2 :	Describe use of advanced tools and														
CO3 :	Write the evidences about the														
CO4 :	Present successfully the details of														
CO5 :	Prepare professional work reports														
CO- PO TARGET MATRIX															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	PO#1	PO#2	PO#3	PO#4	PO#5	PO#6	PO#7	PO#8	PO#9	PO#10	PO#11	PO#12	PSO1	PSO2	PSO3
CO2	1	1	1	2	1	1	1	1	1	1	3	2	1	1	1
CO3	2	2	2	2	3	2	1	1	1	1	3	2	1	2	2
CO4	1	1	1	2	1	2	2	3	3	3	3	2	1	2	1
CO5	1	1	2	1	1	1	1	3	3	2	3	3	1	1	1
average	3	2	2	2	2	2	2	2	2	2	2	2	1	1	1
TARGET	1.6	1.4	1.6	1.8	1.6	1.6	1.4	2.0	2.0	1.8	2.8	2.2	1.0	1.4	1.2
CO- PO ATTAIN MATRIX															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.9	0.0	0.0	0.0
CO2	0.9	0.9	0.9	0.9	1.4	0.9	0.0	0.0	0.0	0.0	1.4	0.9	0.0	0.9	0.9
CO3	0.0	0.0	0.0	0.9	0.0	0.9	0.9	1.3	1.3	1.3	1.3	0.9	0.0	0.9	0.0
CO4	1.0	1.0	1.5	1.0	1.0	1.0	1.0	2.2	2.2	1.5	2.2	2.2	1.0	1.0	1.0
CO5	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0
ATTAIN	1.6	1.3	1.5	1.1	1.5	1.2	1.3	1.8	1.8	1.6	1.7	1.4	1.0	1.0	1.0

FACULTY NAME : MR. TARUN KUMAR MARNIURE, MS. NAINRATA KHEDE
 SUBJECT CODE : CE 31301
 SUBJECT NAME : ADVANCE HIGHWAY AND AIRPORT ENGINEERING

SESSION : 2024-25
 B. TECH YEAR : IV YEAR
 SEM : 8th

COURSE OUTCOME

CO1 :	Identify and evaluate the properties of highway materials (asphalt) for pavement performance and construction. Describe the various available conventional and new.
CO2 :	Solve design problems related to flexible and rigid pavements using standard methods and guidelines. Explain the suitability of materials required for various structural
CO3 :	Analyze key factors influencing pavement design and compare different design methodologies. Describe the suitability of materials and construction techniques.
CO4 :	Interpret aircraft characteristics and integrate them into airport planning. Analyze construction procedures and maintenance practices. Apply the suitability of locally
CO5 :	Develop airport layout plans and perform structural design of airport pavements based on technical criteria. Explain the application of globally available equipments in

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	3	2	2	0	0	0	0	0	0	0	0	3	3	1	2
CO2	3	3	2	2	0	0	0	0	0	0	0	0	1	3	1	1
CO3	2	2	3	3	0	0	0	0	0	0	0	0	2	3	2	2
CO4	2	2	3	2	0	2	0	0	0	0	0	0	2	3	1	2
CO5	2	3	3	3	0	2	0	0	0	0	0	0	1	3	1	1
TARGET	2.4	2.6	2.6	2.4	-	0.8	-	-	-	-	-	-	2.6	3.0	1.2	1.6

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	0.00	2.00	1.33	1.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.67	1.33
CO2	0.00	2.36	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.36	2.36	0.79	0.79
CO3	1.35	1.35	2.03	2.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35	2.03	1.33	1.33
CO4	1.57	1.57	2.36	1.57	0.00	1.57	0.00	0.00	0.00	0.00	0.00	0.00	1.57	2.36	0.79	1.57
CO5	1.31	1.96	1.96	1.96	0.00	1.31	0.00	0.00	0.00	0.00	0.00	0.00	1.96	1.96	0.65	0.65
ATTAIN	0.8	1.8	1.9	1.7	-	0.6	-	-	-	-	-	-	1.8	2.1	0.8	1.1
TARGET	1.0	1.0	1.0	1.0	0.0	0.5	0.0	-	-	-	-	0.0	1.0	2.0	0.5	1.0

FACULTY NAME : Prof. Deependra Dadasar Ms. Seemya Salhotra Ms. Sarika Khadkekar
 SUBJECT CODE : CE 41315
 SUBJECT NAME : Industrial Wastewater Management

SESSION : 2024-25
 DTCH YEAR : IV YEAR
 SEM : III

COURSE OUTCOME

CO1 : Determine the characteristics, sources and limits related to industrial wastewater treatment and have a better understanding of the effects and disposal of industrial waste on sewers.

CO2 : Perform auditing with case examples and discuss waste minimization, recycling and guidelines for environmental management system.

CO3 : Test various characteristics of industrial wastewater via different instruments, software's and their applications.

CO4 : Characterize different types of industrial waste and determine the appropriate treatment methods for them.

CO5 : Explain various aspects of customer effluent treatment plan, deterioration and disposal.

		CO-PO TARGET MATRIX													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14
CO1	3	0	0	0	0	0	0	0	0	0	0	0	2	3	3
CO2	3	0	0	0	0	2	2	2	0	0	3	2	2	3	3
CO3	3	0	0	2	2	0	0	0	0	0	0	0	2	3	3
CO4	3	0	0	2	0	0	0	0	0	0	0	0	2	3	3
CO5	3	0	0	2	2	0	0	0	0	0	0	0	2	3	3
TARGET	15	0	0	0	2	1	2	2	0	0	1	1	2	15	15

		CO-PO ATTAIN MATRIX													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14
CO1	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	2.83	1.87
CO2	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
CO3	2.20	0.00	0.00	1.47	1.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07	2.20	2.20
CO4	2.20	0.00	0.00	1.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07	2.20	2.20
CO5	2.50	0.00	0.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07	2.50	2.50
ATTAIN	2.5	-	-	0.9	0.4	0.4	0.4	0.4	-	-	0.6	0.4	1.7	2.5	2.5

FACULTY NAME : Ms. Sarika Khudekar
 SUBJECT CODE : CE41997
 SUBJECT NAME : MAJOR PROJECT

SESSION : 2024-25
 B.TECH YEAR : IVth YEAR
 SEM : 8th

COURSE OUTCOME

CO1 :	Establish motivation for any topic of interest and define objectives of project work
CO2 :	Organize a detailed literature survey and build a document with respect to technical publications
CO3 :	Demonstrate skill of selecting a alternative out of all the available choices with reference to functional, aesthetic, social, economic, or environmental
CO4 :	Apply various tools and techniques needed for project development.
CO5 :	Demonstrate skill to innovate the developed project and convert it in form of product for industrial / societal need
CO6 :	Demonstrate skill to present project related activities effectively to peers and members
CO7 :	Prepare a well-organized report employing elements of technical writing and critical thinking

CO-PO TARGET MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1
CO2	2	1	1	2	1	1	1	1	2	1	1	1	1	1	3	1
CO3	2	2	2	2	2	3	3	1	2	1	1	2	2	2	1	3
CO4	2	2	2	1	3	2	2	1	2	1	3	1	2	2	2	2
CO5	1	2	2	2	1	3	2	1	2	2	3	3	2	2	2	2
CO6	1	1	2	1	3	2	1	2	2	3	2	3	2	2	1	1
CO7	2	1	1	1	3	2	1	1	2	2	2	3	1	2	1	1
TARGET	1.71	1.43	1.57	1.43	2.00	2.00	1.57	1.14	2.00	1.57	1.86	2.00	1.57	1.71	1.57	1.57

CO-PO ATTAIN MATRIX

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	1.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9
CO2	1.8	0.9	0.9	1.8	0.9	0.9	0.9	0.9	1.8	0.9	0.9	0.9	0.9	0.9	2.7	0.9
CO3	1.8	1.8	1.8	1.8	1.8	2.7	2.7	0.9	1.8	0.9	0.9	1.8	1.8	1.8	0.9	2.7
CO4	1.8	1.8	1.8	0.9	2.7	1.8	1.8	0.9	1.8	0.9	2.7	0.9	1.8	1.8	1.8	1.8
CO5	0.9	1.8	1.8	1.8	0.9	2.7	1.8	0.9	1.8	1.8	2.7	2.7	1.8	1.8	1.8	1.8
CO6	0.9	0.9	1.8	0.9	2.7	1.8	0.9	1.8	1.8	2.7	1.8	2.7	1.8	1.8	0.9	0.9
CO7	1.8	0.9	0.9	0.9	2.7	1.8	0.9	0.9	1.8	1.8	1.8	2.7	0.9	1.8	0.9	0.9
ATTAIN	1.54	1.29	1.41	1.29	1.80	1.80	1.41	1.03	1.80	1.41	1.67	1.80	1.41	1.54	1.41	1.41

FACULTY NAME : MR. FARUK KURBAN MAFIHEE, P.S. MAFIHEE, A. NHEDE
 SUBJECT CODE : CE4604 (CE4684)
 SUBJECT NAME : ADVANCE TRANSPORTATION ENGINEERING

SESSION : 2024-25
 B.TECH YEAR : IV YEAR
 SEM : III

COURSE OUTCOME

CO1 : Evaluate the economic aspects of highway projects, including cost components, and

CO2 : Develop and apply transportation demand models to predict and analyze travel behavior and demand.

CO3 : Analyze traffic and transportation problems in urban areas, and classify various

CO4 : Analyze various urban public transportation systems, including BRTN, bus lanes, and rail systems, in the context of their advantages and limitations

CO5 : Select the appropriate construction equipment for planned construction, considering factors

CO-PO TARGET MATRIX

CO	PO#1	PO#2	PO#3	PO#4	PO#5	PO#6	PO#7	PO#8	PO#9	PO#10	PO#11	PO#12	PSO1	PSO2	PSO3	PSO4
CO1	3	3	1	1	0	1	0	0	0	0	1	1	3.00	3.00	2.00	3.00
CO2	3	3	1	2	3	2	0	0	0	0	0	0	3.00	3.00	3.00	3.00
CO3	1	2	3	1	0	2	2	0	0	0	1	0	3.00	3.00	3.00	3.00
CO4	1	1	3	1	0	2	2	2	0	0	3	1	3.00	3.00	3.00	3.00
CO5	3	1	1	1	0	1	0	0	0	0	0	0	3.00	3.00	3.00	3.00
TARGET	2.2	2.0	2.0	1.2	0.6	1.6	0.8	0.4	-	-	1.0	0.4	3.0	3.0	2.6	2.8

CO-PO ATTAIN MATRIX

CO1	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	2.40	2.40	1.00	0.80	0.00	0.80	0.00	0.00	0.00	0.00	0.80	0.80	2.40	2.40	1.60	2.40
CO2	2.40	2.40	0.80	1.80	2.40	1.60	0.00	0.00	0.00	0.00	0.00	0.00	2.40	2.40	2.40	2.40
CO3	0.70	1.50	2.40	0.70	0.00	1.50	1.50	0.00	0.00	0.00	0.70	0.00	2.20	2.20	2.20	2.20
CO4	0.80	0.80	2.40	0.70	0.00	1.60	1.60	1.60	0.00	0.00	2.40	0.80	2.40	2.40	2.40	2.40
CO5	0.00	0.80	0.80	0.80	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	2.40	2.40	1.60	1.60
ATTAIN	1.3	1.6	1.6	0.9	0.5	1.3	0.6	0.3	-	-	0.8	0.3	2.4	2.4	2.0	2.2
TARGET	2.2	2.0	2.0	1.2	0.6	1.6	0.8	0.4	-	-	1.0	0.4	3.0	3.0	2.6	2.8

FACULTY NAME : Ms. Shruti Bajpai, Mr. Devendra Dohare
 SUBJECT CODE : CE41711
 SUBJECT NOMN : Municipal Solid Waste Management

SESSION : 2024-25
 B.TECH YEAR : IV
 SEM : VIII

COURSE OUTCOME

CO1 : Determine the sources, composition, characteristics and learning of all terms related to general solid waste management including explanation of hierarchical structure in solid waste management and requirement for integrated solution.

CO2 : Examine technical aspects of solid waste segregation, collection and transportation along with route optimization for a solid waste collection and transport system

CO3 : Analyze and design compost and Incineration facilities.

CO4 : Plan and design municipal sanitary landfills along with management of leachate and landfill gas.

CO5 : Identify appropriate technologies for recycle, recovery and reuse of municipal solid waste. Case studies and Solid waste legislation.

CO-PO TARGET MATRIX																
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	0	0	0	0	3	3	0	3	0	0	0	2	1	0	2
CO2	3	0	0	0	3	2	0	0	3	0	2	0	3	3	1	2
CO3	3	0	0	0	3	2	2	0	0	0	0	0	2	3	2	2
CO4	3	0	0	0	0	2	0	0	2	0	1	0	2	3	2	2
CO5	3	0	3	0	0	0	3	0	2	0	2	0	2	2	2	3
TARGET	3	0	3	0	3	2	3	0	3	0	2	0	2	2	1	2

CO-PO ATTAIN MATRIX																
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4
CO1	1.9	0.0	0.0	0.0	0.0	1.9	1.9	0.0	1.9	0.0	0.0	0.0	1.3	0.6	0.0	1.3
CO2	2.3	0.0	0.0	0.0	2.3	1.5	0.0	0.0	2.3	0.0	1.5	0.0	2.3	2.3	0.8	1.5
CO3	1.9	0.0	0.0	0.0	1.9	1.3	1.3	0.0	0.0	0.0	0.0	0.0	1.3	2.3	1.3	1.3
CO4	2.9	0.0	0.0	0.0	0.0	1.9	0.0	0.0	1.9	0.0	1.0	0.0	1.9	2.9	1.9	1.9
CO5	1.7	0.0	1.7	0.0	0.0	0.0	0.6	0.0	1.1	0.0	1.1	0.0	1.1	1.1	1.1	1.7
ATTAIN	2.1	-	1.7	-	2.1	1.7	1.3	-	1.8	-	0.7	-	1.6	1.9	1.3	1.6