ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. CIVIL ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
I TO VIII SEMESTERS CURRICULA & SYLLABI

SEMESTER I

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics – I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER II

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics – II	BS	4	4	0	0	4
3.	PH8201	Physics For Civil Engineering	BS	3	3	0	0	3
4.	BE8251	Basic Electrical and Electronics Engineering	ES	3	3	0	0	3
5.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
6.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	CE8211	Computer Aided Building Drawing	PC	4	0	0	4	2
			TOTAL	**30**	**20**	**2**	**8**	**25**

SEMESTER III

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
2.	CE8301	Strength of Materials I	PC	3	3	0	0	3
3.	CE8302	Fluid Mechanics	PC	3	3	0	0	3
4.	CE8351	Surveying	PC	3	3	0	0	3
5.	CE8391	Construction Materials	PC	3	3	0	0	3
6.	CE8392	Engineering Geology	ES	3	3	0	0	3
PRACTICALS								
7.	CE8311	Construction Materials Laboratory	PC	4	0	0	4	2
8.	CE8361	Surveying Laboratory	PC	4	0	0	4	2
9.	HS8381	Interpersonal Skills / Listening and Speaking	EEC	2	0	0	2	1
			TOTAL	**29**	**19**	**0**	**10**	**24**

SEMESTER IV

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8491	Numerical Methods	BS	4	4	0	0	4
2.	CE8401	Construction Techniques and Practices	PC	3	3	0	0	3
3.	CE8402	Strength of Materials II	PC	3	3	0	0	3
4.	CE8403	Applied Hydraulic Engineering	PC	3	3	0	0	3
5.	CE8404	Concrete Technology	PC	3	3	0	0	3
6.	CE8491	Soil Mechanics	PC	3	3	0	0	3
PRACTICALS								
7.	CE8481	Strength of Materials Laboratory	PC	4	0	0	4	2
8.	CE8461	Hydraulic Engineering Laboratory	PC	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
			TOTAL	**29**	**19**	**0**	**10**	**24**

SEMESTER V

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	CE8501	Design of Reinforced Cement Concrete Elements	PC	5	3	2	0	4
2.	CE8502	Structural Analysis I	PC	3	3	0	0	3
3.	EN8491	Water Supply Engineering	PC	3	3	0	0	3
4.	CE8591	Foundation Engineering	PC	3	3	0	0	3
5.		Professional Elective I	PE	3	3	0	0	3
6.		Open Elective I*	OE	3	3	0	0	3
PRACTICALS								
7.	CE8511	Soil Mechanics Laboratory	PC	4	0	0	4	2
8.	CE8512	Water and Waste Water Analysis Laboratory	PC	4	0	0	4	2
9.	CE8513	Survey Camp (2 weeks –During IV Semester)	EEC	0	0	0	0	2
			TOTAL	**28**	**18**	**2**	**8**	**25**

SEMESTER VI

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	CE8601	Design of Steel Structural Elements	PC	5	3	2	0	4
2.	CE8602	Structural Analysis II	PC	3	3	0	0	3
3.	CE8603	Irrigation Engineering	PC	3	3	0	0	3
4.	CE8604	Highway Engineering	PC	3	3	0	0	3
5.	EN8592	Wastewater Engineering	PC	3	3	0	0	3
6.		Professional Elective II	PE	3	3	0	0	3
PRACTICALS								
7.	CE8611	Highway Engineering Laboratory	PC	4	0	0	4	2
8.	CE8612	Irrigation and Environmental Engineering Drawing	PC	4	0	0	4	2
			TOTAL	**28**	**18**	**2**	**8**	**23**

SEMESTER VII

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	CE8701	Estimation, Costing and Valuation Engineering	PC	3	3	0	0	3
2.	CE8702	Railways, Airports, Docks and Harbour Engineering	PC	3	3	0	0	3
3.	CE8703	Structural Design and Drawing	PC	5	3	0	2	4
4.		Professional Elective III	PE	3	3	0	0	3
5.		Open Elective II*	OE	3	3	0	0	3
PRACTICALS								
6.	CE8711	Creative and Innovative Project (Activity Based - Subject Related)	EEC	4	0	0	4	2
7.	CE8712	Industrial Training (4 weeks During VI Semester – Summer)	EEC	0	0	0	0	2
			TOTAL	**21**	**15**	**0**	**6**	**20**

SEMESTER VIII

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.		Professional Elective IV	PE	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
PRACTICALS								
3.	CE8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**26**	**6**	**0**	**20**	**16**

TOTAL NO. OF CREDITS: 182

*Course from the curriculum of other UG Programmes.

HUMANITIES AND SOCIAL SCIENCES (HS)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3

BASIC SCIENCES (BS)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics – I	BS	4	4	0	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics – II	BS	4	4	0	0	4
6.	PH8201	Physics for Civil Engineering	BS	3	3	0	0	3
7.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
8.	MA8491	Numerical Methods	BS	4	4	0	0	4

ENGINEERING SCIENCES (ES)

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
4.	BE8251	Basic Electrical and Electronics Engineering	ES	3	3	0	0	3
5.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
6.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
7.	CE8392	Engineering Geology	ES	3	3	0	0	3

PROFESSIONAL CORE (PC)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CE8211	Computer Aided Building Drawing	PC	4	0	0	4	2
2.	CE8391	Construction Materials	PC	3	3	0	0	3
3.	CE8301	Strength of Materials I	PC	3	3	0	0	3
4.	CE8302	Fluid Mechanics	PC	3	3	0	0	3
5.	CE8351	Surveying	PC	3	3	0	0	3

6.	CE8481	Strength of Materials Laboratory	PC	4	0	0	4	2
7.	CE8361	Surveying Laboratory	PC	4	0	0	4	2
8.	CE8311	Construction Materials Laboratory	PC	4	0	0	4	2
9.	CE8401	Construction Techniques and Practices	PC	3	3	0	0	3
10.	CE8402	Strength of Materials II	PC	3	3	0	0	3
11.	CE8403	Applied Hydraulic Engineering	PC	3	3	0	0	3
12.	CE8404	Concrete Technology	PC	3	3	0	0	3
13.	CE8491	Soil Mechanics	PC	3	3	0	0	3
14.	CE8461	Hydraulic Engineering Laboratory	PC	4	0	0	4	2
15.	CE8501	Design of Reinforced Cement Concrete Elements	PC	5	3	2	0	4
16.	CE8502	Structural Analysis I	PC	3	3	0	0	3
17.	CE8511	Soil Mechanics Laboratory	PC	4	0	0	4	2
18.	CE8512	Water and Waste Water Analysis Laboratory	PC	4	0	0	4	2
19.	CE8591	Foundation Engineering	PC	3	3	0	0	3
20.	CE8601	Design of Steel Structural Elements	PC	5	3	2	0	4
21.	CE8602	Structural Analysis II	PC	3	3	0	0	3
22.	CE8603	Irrigation Engineering	PC	3	3	0	0	3
23.	CE8604	Highway Engineering	PC	3	3	0	0	3
24.	CE8611	Highway Engineering Laboratory	PC	4	0	0	4	2
25.	CE8612	Irrigation and Environmental Engineering Drawing	PC	4	0	0	4	2
26.	EN8592	Wastewater Engineering	PC	3	3	0	0	3
27.	EN8491	Water Supply Engineering	PC	3	3	0	0	3
28.	CE8701	Estimation, Costing and Valuation Engineering	PC	3	3	0	0	3
29.	CE8702	Railways, Airports, Docks and Harbour Engineering	PC	3	3	0	0	3
30.	CE8703	Structural Design and Drawing	PC	5	3	0	2	4

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills / Listening and Speaking	EEC	2	0	0	2	1
2.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
3.	CE8513	Survey Camp (2 weeks – During IV Semester)	EEC	0	0	0	0	2
4.	CE8711	Creative and Innovative Project (Activity Based - Subject Related)	EEC	4	0	0	4	2
5.	CE8712	Industrial Training (4 weeks During VI Semester – Summer)	EEC	0	0	0	0	2
6.	CE8811	Project Work	EEC	20	0	0	20	10

PROFESSIONAL ELECTIVE

SEMESTER V
ELECTIVE - I

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GI8012	Digital Cadastre	PE	3	3	0	0	3
2.	GI8013	Advanced Surveying	PE	3	3	0	0	3
3.	GI8014	Geographic Information System	PE	3	3	0	0	3
4.	GI8015	Geoinformatics Applications for Civil Engineers	PE	3	3	0	0	3
5.	GI8491	Total Station and GPS Surveying	PE	3	3	0	0	3
6.	GE8071	Disaster Management	PE	3	3	0	0	3
7.	GE8074	Human Rights	PE	3	3	0	0	3

SEMESTER VI
ELECTIVE - II

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CE8001	Ground Improvement Techniques	PE	3	3	0	0	3
2.	CE8002	Introduction to Soil Dynamics and Machine Foundations	PE	3	3	0	0	3
3.	CE8003	Rock Engineering	PE	3	3	0	0	3
4.	CE8004	Urban Planning and Development	PE	3	3	0	0	3
5.	CE8005	Air Pollution and Control Engineering	PE	3	3	0	0	3
6.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

SEMESTER VII
ELECTIVE – III

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CE8006	Pavement Engineering	PE	3	3	0	0	3
2.	CE8007	Traffic Engineering and Management	PE	3	3	0	0	3
3.	CE8008	Transport and Environment	PE	3	3	0	0	3
4.	CE8009	Industrial Structures	PE	3	3	0	0	3
5.	CE8010	Environmental and Social Impact Assessment	PE	3	3	0	0	3
6.	CE8011	Design of Prestressed Concrete Structures	PE	3	3	0	0	3
7.	CE8012	Construction Planning and Scheduling	PE	3	3	0	0	3
8.	EN8591	Municipal Solid Waste Management	PE	3	3	0	0	3
9.	GE8077	Total Quality Management	PE	3	3	0	0	3

SEMESTER VIII
ELECTIVE – IV

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CE8013	Coastal Engineering	PE	3	3	0	0	3
2.	CE8014	Participatory Water Resources Management	PE	3	3	0	0	3
3.	CE8015	Integrated Water Resources Management	PE	3	3	0	0	3
4.	CE8016	Groundwater Engineering	PE	3	3	0	0	3
5.	CE8017	Water Resources Systems Engineering	PE	3	3	0	0	3
6.	CE8018	Geo-Environmental Engineering	PE	3	3	0	0	3
7.	CE8091	Hydrology and Water Resources Engineering	PE	3	3	0	0	3
8.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3

SEMESTER VIII
ELECTIVE – V

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CE8019	Computer Aided Design of Structures	PE	3	3	0	0	3
2.	CE8020	Maintenance, Repair and Rehabilitation of Structures	PE	3	3	0	0	3
3.	CE8021	Structural Dynamics and Earthquake Engineering	PE	3	3	0	0	3
4.	CE8022	Prefabricated Structures	PE	3	3	0	0	3
5.	CE8023	Bridge Engineering	PE	3	3	0	0	3
6.	GE8073	Fundamentals of Nano Science	PE	3	3	0	0	3

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

Mount Zion College of Engineering & Technology

CIVIL ENGINEERING

COURSE MAPPING CHART

COURSE NAME: HS8151 COMMUNICATIVE ENGLISH **YEAR & SEMESTER: I & I**

B.E CIVIL	CO Statement At the end of the course, the students will	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	P10	P11	P12
HS8151 - COMMUNICATIVE ENGLISH	CO1: Communicate and share a broad range of information.[K3]	3	2	1	1	-	-	-	-	-	-	-	-
	CO2: Develop reading and speaking skills.[K3]	3	2	1	1	-	-	-	-	-	-	-	-
	CO3: Develop English language competency. [K3]	3	2	1	1	-	-	-	-	-	-	-	-
	CO4: Identify & rectify mistakes on reading and writing.[K3]	3	2	1	1	-	-	-	-	1	-	-	-
	CO5: Relate the usage of direct & indirect questions.[K2]	2	1	-	-	-	-	-	-	-	-	-	-
	CO6: Rephrase comprehensive passages & newspaper descriptions including dialogue and conversations.[K2]	2	1	-	-	-	-	-	-	-	-	1	-
	CO7: Understand the functions of essays and development of the vocabularies.[K2]	2	1	-	-	-	-	-	-	-	-	-	-
	CO8: Write personal letter, official letter, email and articles.[K2]	2	1	-	-	-	-	-	-	-	-	-	-
	CO9: Participate in the conversation in order to acquire oral & listening skills.[K4]	3	3	2	2	-	-	-	-	-	-	-	-
	Average	2.6	1.7	0.67	0.67					0.11		0.11	

NAME OF THE STAFF: S.AMMU

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech.
Pudukkottai - 622 507.

MOUNT ZION COLLEGE OF ENGINEERING AND TECHNOLOGY
REGULATION 2017
B.E CIVIL - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome(CO) Students will be able to	Knowledge Level
MA8151	ENGINEERING MATHEMATICS-I	CO1: Define limit of a fuction.	K1
		CO2: Apply the concept of derivative rules in maxima and minima.	K3
		CO3: Explain the concept of partial differential equation.	K2
		CO4: Explain the concept of maxima and minima of two functions.	K2
		CO5: Apply the concept of integration by parts.	K3
		CO6: Apply the concept of partial fraction methods.	K3
		CO7: Solve the double integrals.	K3
		CO8: Apply the concept of trible integrals.	K3
		CO9: Solve the differential equation with constant coefficients.	K3
		CO10: Solve the Euler's and Legender's type.	K3

CO-PO MAPPING

COs		Pos											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6							
C3O1.1	K1	1	-	-	-	1	-	-	-	-	-	-	-
C3O1.2	K3	3	2	1	1	1	-	-	-	-	-	-	-
C3O1.3	K2	2	1	-	-	-	-	-	-	-	-	-	-
C3O1.4	K2	2	1	-	-	-	-	-	-	-	-	-	-
C3O1.5	K3	3	2	1	1	1	-	-	-	-	-	-	-
C3O1.6	K3	3	2	1	1	1	-	-	-	-	-	-	-
C3O1.7	K3	3	2	1	1	1	-	-	-	-	-	-	-
C3O1.8	K3	3	2	1	1	1	-	-	-	-	-	-	-
C3O1.9	K3	3	2	1	1	1	-	-	-	-	-	-	-
C3O1.10	K3	3	2	1	1	1	-	-	-	-	-	-	-

NAME OF THE STAFF: S.MANIMEKALAI

VERIFIED BY HOD

Head of the Department
Civil Engineering
Mount Zion College of Engg. & Tech.
Pudukkottai - 622 507.

MOUNT ZION COLLEGE OF ENGINEERING AND TECHNOLOGY
B.E CIVIL - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to	Knowledge Level
PH8151	ENGINEERING PHYSICS	CO01: Interpret the fundamental knowledge of Physics and its applications in engineering and technology.	K2
		CO02: Apply the concept of depression/ elevation of the beam and get expertise through experimental evidence.	K3
		CO03: Analyze the properties of lasers for low and high energy application.	K3
		CO04: Apply the total internal reflection properties of light in the optical fiber to find out the physical parameters like variation in temperature, pressure and displacement using FOC.	K3
		CO05: Identify the mode of heat transfer in heat Exchangers.	K3
		CO06: Make use of the thermal properties of thermal insulating material in a wide range of applications.	K3
		CO07: Summarize the drawback of Classical Physics and overcome these drawbacks by quantum theory concept.	K2
		CO08: Make use of quantum theory concept to study the working of Scanning Tunneling Microscope technique and its Benefits.	K3
		CO09: Infer the basics of crystals and its structures.	K2
		CO10: Outline the different crystals growth techniques, and its advantages and disadvantages.	K2

CO-PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO1	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO2	K3	3	2	1	1	-	-	-	-	-	-	-	-
CO3	K3	3	2	1	1	-	-	-	-	-	-	-	-
CO4	K3	3	2	1	1	-	-	-	-	-	-	-	-
CO5	K3	3	2	1	1	-	-	-	-	-	-	-	-
CO6	K3	3	2	1	1	-	-	-	-	-	-	-	-
CO7	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO8	K3	3	2	1	1	-	-	-	-	-	-	-	-
CO9	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO10	K2	2	1	-	-	-	-	-	-	-	-	-	-

NAME OF THE STAFF:MR.J.SRINIVAS

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

MOUNT ZION COLLEGE OF ENGINEERING AND TECHNOLOGY
B.E CIVIL - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome(CO) Students will be able to	Knowledge Level
CY8151	ENGINEERINGCHEMISTRY I	CO.1: Boiler troubles-scale and sludges	K2
		CO.2: Desalination of brackish water	K3
		CO.3: Adsorption of solute from solutions	K2
		CO.4: Catalytic poison and catalytic promoters	K2
		CO.5:Significance of alloying	K1

CO-PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6							
CO.1	K2	2	1	-	-	2	-	-	-	-	-	-	-
CO.2	K3	3	2	1	1	3	-	-	-	-	-	-	-
CO.3	K2	2	1	-	-	2	-	-	-	-	-	-	-
CO.4	K2	2	1	-	-	2	-	-	-	-	-	-	-
CO.5	K1	1	-	-	-	1	-	-	-	-	-	-	-

Staff name: A. ARASAKUMAR

Signature of HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech.
Pudukkottai - 622 5[illegible]

MOUNT ZION COLLEGE OF ENGINEERING AND TECHNOLOGY
REGULATION 2017
B.E CIVIL - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome(CO) Students will be able to	Knowledge Level
GE8151	Problem Solving and Python Programming	CO1: Develop the flowchart symbols and pseudo code for various notations.	K3
		CO2: Develop an algorithm for towers of Hanoi in a given list of data.	K3
		CO3: Execute to exchange the values of the given variables using tuple assignment.	K3
		CO4: Demonstrate a program into a recursion function using newton's methodology.	K2
		CO5:Decompose a python program in to recursion function for a Fibonacci program	K2
		CO6: Apply the arithmetic operations to manipulate the mathematical representation for the given data using python function.	K3
		CO7: Differentiate the concept of List, Tuples and dictionaries to fetch the given data.	K4
		CO8: Illustrate a program using sorting techniques to perform I/O operations.	K3

CO-PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6	K3	K2	K3	K3	K2	K6	K6
CO1	K2	2	1	-	-	2	2	3	2	2	3	-	-
CO2	K2	2	1	-	-	-	2	3	2	2	3	-	-
CO3	K3	3	2	1	1	-	3	2	3	3	3	-	-
CO4	K2	2	1	-	-	-	2	3	2	2	3	-	-
CO5	K2	2	1	-	-	2	2	3	2	2	3	-	-
CO6	K3	3	2	1	1	-	3	2	3	3	3	-	-
CO7	K3	3	2	1	1	1	3	2	3	3	3	-	-
CO8	K3	3	2	1	1	1	3	2	3	3	3	-	-

NAME OF THE STAFF : RAGINI

VERIFIED BY HOD

Head of the [illegible]
Civil Engineering
Mount Zion College of Engg. & Tech.
Pudukkottai - 622 507.

Mount Zion College of Engineering & Technology

COURSE MAPPING CHART

COURSE NAME: GE 8152 ENGINEERING GRAPHICS **YEAR & SEMESTER:I & I**

B.E CIVIL	CO Statement: At the end of the course, the students will	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	P10	P11	P12
GE 8152 Engineering Graphics	**CO1:**Know freehand sketching of basic geometrical constructions**(K1)**	1	-	-	-	-	-	-	-	-	-	-	-
	CO2: Draw orthographic projections of lines and plane surfaces. **(K3)**	3	2	1	1	-	-	-	-	-	-	-	-
	CO3: Develop 3D solid computer models **(K3)**	3	2	1	1	-					1		
	CO4: Develop the visualize and to project isometric and perspective sections of simple solids. **(K3)**	3	2	1	1	-	-	-	-	-	-	-	-
	CO5: Apply the knowledge of development of surfaces in manufacturing and Rapid Prototyping Methods **(K3)**	3	2	1	1	-					1		
	CO6: Make use of the fundamentals and standards of Engineering graphics **(K3)**	3	2	1	1	3	-	-	-	-	-	-	-
	CO7: Draw isometric and perspective views of the simple solids. **(K3)**	3	2	1	1	3							
	CO8: Apply Orthographic projections of real time parts in the Engineering Field. **(K3)**	3	2	1	1	3	-	-	-	-	1	-	-
	CO9: Project the sectioned solids and true shape of the section.**(K4)**	3	3	2	2	3							

NAME OF THE STAFF:MR.GURU MOORTHY

VERIFIED BY HOD

Head of the Department
Civil Engineering
Mount Zion College of Engg. & Tech.
Pudukkottai - 622 507.

Mount Zion College of Engineering & Technology

CIVILENGINEERING

COURSE MAPPING CHART

COURSE NAME:HS8251 – TECHNICAL ENGLISH

YEAR & SEMESTER:I & II

B.E CIVIL	CO Statement At the end of the course, the students will able to	CO	PO1(k3)	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10 (k3)	P11	P12 (k5)
HS8251- TECHNICAL ENGLISH	Communicate and discuss a broad range of technical information with colleagues and clients related to the Engineering industry.(k3)	C209.1	2	-	-	-	-	-	-	-	-	2		1
	Demonstrate satisfactory presentation skill in technical presentation.(k3)	C209.2	2	-	-	-	-	-	-	-	-	2		1
	Explain and produce summaries that include correctly written introductory sentences and accurate paraphrases of the main ideas and key details, approximately one fourth in length of the original passages, without plagiarizing. (k2)	C209.3	1	-	-	-	-	-	-	-	-	1		-
	Identify the common types of support in arguments, their relevance or irrelevance, common argument flaws, opposing points of views, and refutations. (k1)	C209.4	-	-	-	-	-	-	-	-	-	-		-
	Understand what writing an assignment involves.(k2)	C209.5	1	-	-	-	-	-	-	-	-	1		-
	Identify strengths and weaknesses (k2)	C209.6	1	-	-	-	-	-	-	-	-	1		-
	Understand the functions of essays and reports (k2)	C209.7	1	-	-	-	-	-	-	-	-	1		-
	Demonstrate writing skills.(k2)	C209.8	1	-	-	-	-	-	-	-	-	1		-
	Execute the method of participation in the Group Discussion.(k5)	C209.9	2	-	-	-	-	-	-	-	-	2		2
	Judge how to acquire the oral skills and the body language used for effective Group Discussion. (k5)	C209.10	2	-	-	-	-	-	-	-	-	2		2
	Average	C209	1.3	-	-	-	-	-	-	-	-	1.3		0.6

NAME OF THE STAFF:S.AMMU

VERIFIED BY HOD

Head of the Department
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

MOUNT ZION COLLEGE OF ENGINEERING AND TECHNOLOGY
REGULATION 2017
B.E CIVIL - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome(CO) Students will be able to	Knowledge Level
MA8251	ENGINEERING MATHEMATICS-II	CO1: Define the Eigen values and Eigen vectors of the matrix.	K1
		CO2: Apply the concept of Cayley-Hamilton theorem in inverse and powers of the matrix.	K3
		CO3: Explain the concept of canonical form of the given quadratic form.	K2
		CO4: Explain the concept of solenoidal and irrotational vector.	K2
		CO5: Apply the concept of Gauss divergence, Stoke's and Green's theorem.	K3
		CO6: Apply the concept of Cauchy –Riemann equations	K3
		CO7: Solve the bilinear transformation problems.	K3
		CO8: Apply the concept of Cauchy's integral theorem and integral formula.	K3
		CO9: Solve the Laurent expansions and contours problems.	K3
		CO10: Define Laplace transform, unit step function and impulse functions.	K1

CO-PO MAPPING

COs		Pos											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6							
C3O1.1	K1	1	-	-	-	1	-	-	-	-	-	-	-
C3O1.2	K3	3	2	1	1	1	-	-	-	-	-	-	-
C3O1.3	K2	2	1	-	-	-	-	-	-	-	-	-	-
C3O1.4	K2	2	1	-	-	-	-	-	-	-	-	-	-
C3O1.5	K3	3	2	1	1	1	-	-	-	-	-	-	-
C3O1.6	K3	3	2	1	1	1	-	-	-	-	-	-	-
C3O1.7	K3	3	2	1	1	1	-	-	-	-	-	-	-
C3O1.8	K3	3	2	1	1	1	-	-	-	-	-	-	-
C3O1.9	K3	3	2	1	1	1	-	-	-	-	-	-	-
C3O1.10	K1	1	-	-	-	1	-	-	-	-	-	-	-

NAME OF THE STAFF: S.MANIMEKALAI

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

MOUNT ZION COLLEGE OF ENGINEERING AND TECHNOLOGY
B.E CIVIL - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to	Knowledge Level
PH8201	PHYSICS FOR CIVIL ENGINEERING	CO01: Interpret the fundamental knowledge of Physics and its applications in engineering and technology.	K2
		CO02: Apply the concept of fire to be caused in AC system	K3
		CO03: Analyze the properties of acoustics and its application.	K3
		CO04: Apply the impact of noise in multistoreyed building	K3
		CO05: Identify the mode of heat transfer in heat Exchangers.	K3
		CO06: Make use of the artificial lighting	K3
		CO07: Summarize the drawback of Classical Physics and overcome these drawbacks by quantum theory concept.	K2
		CO08: Make use of spectral quantities and its Benefits.	K3
		CO09: Infer the basics of fibre reinforced plastics	K2
		CO10: Outline the different alloys, and its advantages and disadvantages.	K2

CO-PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO1	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO2	K3	3	2	1	1	-	-	-	-	-	-	-	-
CO3	K3	3	2	1	1	-	-	-	-	-	-	-	-
CO4	K3	3	2	1	1	-	-	-	-	-	-	-	-
CO5	K3	3	2	1	1	-	-	-	-	-	-	-	-
CO6	K3	3	2	1	1	-	-	-	-	-	-	-	-
CO7	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO8	K3	3	2	1	1	-	-	-	-	-	-	-	-
CO9	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO10	K2	2	1	-	-	-	-	-	-	-	-	-	-

NAME OF THE STAFF:MR.J.SRINIVAS

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

MOUNT ZION COLLEGE OF ENGINEERING AND TECHNOLOGY
B.E CIVIL - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome(CO) Students will be able to	Knowledge Level
BE8251	Basic Electrical and Electronics Engineering	**CO1:** Describe electrical circuit and overview of control systems.	K2
		CO2: Differentiate between various of theorems and their applications.	K4
		CO3: Demonstrate the different types of RL, RC, RLC produced by their execution.	K3
		CO4: Describe the architecture and working of home wiring components and their applications.	K2
		CO5: Learn the DC machine components and their applications.	K2
		CO6: Design the Transformers	K3
		CO7: Relate the semiconductor and op-amp.	K3
		CO8: Demonstrate the basic structure of ADC and DAC	K3
		CO9: Design of concept in transducers	K3
		CO10: Design of CT and PT	K3

CO-PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6							
CO1	K2	2	2	1	1	-	-	-	-	-	-	-	-
CO2	K4	3	3	3	2	-	-	-	-	-	-	-	-
CO3	K3	3	3	2	1	1	-	-	-	-	-	-	-
CO4	K2	2	2	1	1	1	-	-	-	-	-	-	-
CO5	K2	2	2	1	1	1	-	-	-	-	-	-	-
CO6	K3	3	3	2	1	2	-	-	-	-	-	-	-
CO7	K3	3	3	2	1	2	-	-	-	-	-	-	-
CO8	K3	3	3	2	1	1	-	-	-	-	-	-	-
CO9	K3	3	3	2	1	-	-	-	-	-	-	-	-
CO10	K3	3	3	2	1	-	-	-	-	-	-	-	-

NAME OF THE STAFF: MR.C.T.VIJAY NAGARAJ

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

MOUNT ZION COLLEGE OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING
REGULATION 2017
B.E CIVIL- COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome(CO) Students will be able to	Knowledge Level
GE8291	Environmental Science and Engineering	CO.1: Ecological succession process	K2
		CO.2: Threats to biodiversity	K3
		CO.3: Solid waste management	K1
		CO.4: Role of individual in prevention of pollution	K3
		CO.5: Timber extraction and forest resources	K2
		CO.6: Bioconversion of pollutants	K1
		CO.7: Urban problems related to energy	K3
		CO.8: Resettlement and rehabilitation of people	K1
		CO.9: Environment pollution act	K1
		CO.10: Population explosion	K3
		CO.11: Women and Child welfare	K1

CO-PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6							
CO.1	K2	2	1	-	-	2	-	-	-	-	-	-	-
CO.2	K3	3	2	1	1	3	-	-	-	-	-	-	-
CO.3	K1	1	-	-	-	1	-	-	-	-	-	-	-
CO.4	K3	3	2	1	1	3	-	-	-	-	-	-	-
CO.5	K2	2	1	-	-	2	-	-	-	-	-	-	-
CO.6	K1	1	-	-	-	1	-	-	-	-	-	-	-
CO.7	K3	3	2	1	1	3	-	-	-	-	-	-	-
CO.8	K1	1	-	-	-	1	-	-	-	-	-	-	-
CO.9	K1	1	-	-	-	1	-	-	-	-	-	-	-
CO.10	K3	3	2	1	1	3	-	-	-	-	-	-	-
CO.11	K1	1	-	-	-	1	-	-	-	-	-	-	-

Staff name: A.ARASAKUMAR

Signature of HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech.
Pudukkottai - 622 507.

Mount Zion College of Engineering & Technology

CIVILENGINEERING

COURSE MAPPING CHART

COURSE NAME: ENGINEERING MECHANICS **YEAR & SEMESTER**: I & 2

BE.CIVIL ENGINEERING	CO Statement At the end of the course, the students will	CO	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	P10	P11	P12
GE 8292- ENGINEERING MECHANICS	Exemplify the vectorial and scalar representation of forces and moments **(K2)**	C114.1	2	1	-	-	2	-	-	-	-	-	-	-
	Utilize the laws of forces towards particles **(K3)**	C114.2	3	2	1	1	3	-	-	-	-	-	-	-
	Develop the equilibrium states of forces in space **(K3)**	C114.3	3	2	1	1	3	-	-	-	-	-	-	-
	Analyze the state of rigid body in equilibrium condition **(K4)**	C114.4	2	3	2	2	2	-	-	-	-	-	-	-
	Interpret the properties of solids in different areas **(K2)**	C114.5	2	1	-	-	2	-	-	-	-	-	-	-
	Measure the surfaces and their properties in various aspects **(K4)**	C114.6	2	3	2	2	2	-	-	-	-	-	-	-
	Compute the dynamic forces exerted in rigid body **(K4)**	C114.7	2	3	2	2	2	-	-	-	-	-	-	-
	Resolve the action of friction in rigid bodies **(K3)**	C114.8	3	2	1	1	3	-	-	-	-	-	-	-
	Identify the friction effects by laws of friction **(K3)**	C114.9	3	2	1	1	3	-	-	-	-	-	-	-
	Total	C114	2.4	2.1	1.1	1.1	2.4	-	-	-	-	-	-	-

NAME OF THE STAFF: RAMAMURTHI DS

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Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech.
Pudukkottai - 622 507.

MOUNT ZION COLLEGE OF ENGINEERING AND TECHNOLOGY
REGULATION 2017
B.E CIVIL - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome(CO) Students will be able to	Knowledge Level
MA8353	TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS	CO1:Describe the Partial Differential Equations.	K1
		CO2: Explain the differential equation using Fourier series in Engineering applications.	K2
		CO3: Classify the two dimensional heat flow equation and one dimensional wave equation.	K2
		CO4: Use the Fourier transforms solve the problems.	K3
		CO5: Solve the Partial Differential Equations by using Z- transforms..	K3

CO-PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
C201	K1	1	-	-	-	1	-	-	-	-	-	-	-
C202	K2	2	1	-	-	-	-	-	-	-	-	-	-
C203	K2	2	1	-	-	-	-	-	-	-	-	-	-
C204	K3	3	2	1	1	1	-	-	-	-	-	-	-
C205	K3	3	2	1	1	1	-	-	-	-	-	-	-

NAME OF THE STAFF: S.MANIMEKALAI

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of [illegible] & Tech
Pudukkottai - [illegible]

Mount Zion College of Engineering & Technology

CIVILENGINEERING

COURSE MAPPING CHART

COURSE NAME: CE8301 STRENGTH OF MATERIALS -1

YEAR & SEMESTER:II & III

B.E CIVIL	CO Statement At the end of the course, the students will	CO	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE8301 STRENGTH OF MATERIALS -1	**Interpreting** the fundamental concepts of Stress, Strain and deformation of solids. (K2)	C201.1	2	1	-	-	-	-	-	-	-	-	-	-
	Find the Shear force and bending moment in beams and understand concept of theory of simple bending. (K3)	C201.2	3	2	1	1	-	-	-	-	-	-	-	-
	Find the deflection of beams by different methods and selection of method for determining slope or deflection.(K3)	C201.3	3	2	1	1	-	-	-	-	-	-	-	1
	Use the basic equation of torsion in design of circular shafts and helical springs. (K3)	C201.4	3	2	1	-	-	-	-	-	-	-	-	-
	Analyze the pin jointed plane and space trusses. (K3)	C201.5	3	2	1	1	-	-	-	-	-	-	-	1
	Average		3	1.8	0.8	0.6	-	-	-	-	-	-	-	0.4

NAME OF THE STAFF: B.Alageshwari

VERIFIED BY HOD

Head of the Departme
Civil Engineering,
Mount Zion College of Engg. &
Pudukkottai - 622 507.

Mount Zion College of Engineering & Technology

CIVILENGINEERING

COURSE MAPPING CHART

COURSE NAME: CE8302 FLUID MECHANICS

YEAR & SEMESTER:II & III

CIVIL	CO Statement At the end of the course, the students will	CO	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE8302 FLUID MECHANICS	**Interpreting** the basic knowledge of fluids in static, kinematic and dynamic equilibrium.(K2)	C202.1	2	1	-	-	-	-	-	-	-	-	-	-
	Understand and solve the problems related to equation of motion. (K2)	C202.2	2	1	-	-	-	-	-	-	-	-	-	-
	Apply the knowledge about dimensional and model analysis. (K3)	C202.3	3	2	1	-	-	-	-	-	-	-	-	-
	Comparing the types of flow and losses of flow in pipes. (K2)	C202.4	2	1	-	-	-	-	-	-	-	-	-	-
	Understand and solve the boundary layer problems. (K2)	C202.5	2	1	-	-	-	-	-	-	-	-	-	-
	Average		2.2	1.2	0.2	-	-	-	-	-	-	-	-	-

NAME OF THE STAFF: G.Sofia

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507

Mount Zion College of Engineering & Technology

CIVILENGINEERING

COURSE MAPPING CHART

COURSE NAME: SURVEYING

YEAR & SEMESTER: II - 3

	On successful completion of this course, students should able to	CO	PO1 (k3)	PO2 (k4)	PO3 (k5)	PO4 (k5)	PO5 (k3,5,6)	PO6 (K3)	PO7	PO8	PO9	P10	P11	P12
CE8351- SURVEYING	Examine the surveying instruments for different site conditions (K4)	C204.1	3	3	2	2	1	3	-	-	-	1	1	1
	Detect the sources of error in surveying and rectify the error (K4)	C204.2	3	3	2	2	1	3	-	-	-	1	-	-
	Sketch the contour map and geodetic map (K3)	C204.3	3	2	1	1	-	3	-	-	-	1	-	-
	Operate the theodolite and measure the horizontal and vertical angles (K3)	C204.4	3	2	1	1	-	3	-	-	-	1	1	1
	Understand the concepts of astronomical and hydrographical surveying (K2)	C204.5	2	1	-	-	-	2	-	-	-	1	-	-
	Determine time, longitude, latitude and azimuth in astronomical surveying (K2)	C204.6	2	1	-	-	-	2	-	-	-	1	-	-
	Sketch the levelling conditions of the site (K3)	C204.7	3	2	1	1	-	3	-	-	-	1	-	-
	Understand the working principle of total station and GPS surveying (K2)	C204.8	2	1	-	-	-	2	-	-	-	1	-	-
	Operate the total station and GPS receiv rs (K3)	C204.9	3	2	1	1	-	3	-	-	-	1	1	1
		C204	3	2	1	1	-	3	-	-	-	1	-	-

NAME OF THE STAFF:BALAMURUGAN.S

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

Mount Zion College of Engineering & Technology

CIVIL ENGINEERING

COURSE MAPPING CHART

COURSE NAME: CONSTRUCTION MATERIALS

YEAR & SEMESTER: II & III SEMESTER

B.E CIVIL ENGG	CO Statement	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	P10	P11	P12
	At the end of the course, the students will												
CE 8391 CONSTRUCTION MATERIALS	analyze the quality of freshened hardened concrete (k3)	3	2	1	1	-	-	-	-	-	-	-	-
	analyze the proportion to make concrete blocks (k3)	3	2	1	1	-	-	-	-	-	-	-	-
	Understand the strength of modern materials .(k2)	2	1	0	0	-	-	-	-	-	-	-	-
	execute the tensile strength of concrete blocks (k3)	3	2	1	1	-	-	-	-	-	-	-	-
	understand the quality of aggregates and bricks (k2)	2	1	0	0	-	-	-	-	-	-	-	-
	AVERAGE	3	2	1	1	-	-	-	-	-	-	-	-

NAME OF THE STAFF: Mrs.N.RADHA

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

Mount Zion College of Engineering & Technology

COURSE MAPPING CHART

COURSE NAME: ENGINEERING GEOLOGY

YEAR & SEMESTER: II & 3

BE.CIVIL ENGINEERING	CO Statement At the end of the course, the students will	CO	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	P10	P11	P12
CE8392 ENGINEERING GEOLOGY	Understand the importance of geological knowledge such as earth, earthquake, volcanism and the action of various geological agencies. **(K2)**	C206.1	2	1	-	-	2	-	-	-	-	-	-	-
	Perceive the knowledge on seismic activities due to plate tectonics **(K2)**	C206.2	2	1	-	-	2	-	-	-	-	-	-	-
	Know the basic knowledge on properties of minerals. **(K2)**	C206.3	2	1	-	-	2	-	-	-	-	-	-	-
	Able to figure out the groups of minerals & its types. **(K2)**	C206.4	2	1	-	-	2	-	-	-	-	-	-	-
	Gain knowledge about types of rocks, their distribution and uses. **(K2)**	C206.5	2	1	-	-	2	-	-	-	-	-	-	-
	Learn the engineering properties of various types of rocks. **(K2)**	C206.6	2	1	-	-	2	-	-	-	-	-	-	-
	Understand the methods of study on geological structure. **(K2)**	C206.7	2	1	-	-	2	-	-	-	-	-	-	-
	Recognize the application of geological investigation in projects such as dams, tunnels, bridges, roads, airport and harbour. **(K2)**	C206.8	2	1	-	-	2	-	-	-	-	-	-	-
	To follow the hydro geological investigations and coastal protection structures. **(K2)**	C206.9	2	1	-	-	2	-	-	-	-	-	-	-
	Total	C206	2	1	-	-	2	-	-	-	-	-	-	-

NAME OF THE STAFF: Mrs.M.Priyanka

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

Mount Zion College of Engineering & Technology

COURSE MAPPING CHART

COURSE NAME: NUMERICAL METHODS

YEAR & SEMESTER: II & IV

B.E CIVIL	CO Statement	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	P10	P11	P12
	At the end of the course, the students will able tc												
MA8491-NUMERICAL METHODS	CO1: Define algebraic and Transcendental Equations. (K1)	1	1	-	-	-	-	-	-	-	-	-	-
	CO2: Solve the Gauss –Jacobi and Gauss-seidal method (K3)	3	2	1	1	-	-	-	-	-	-	-	-
	CO3: Compute Newton's forward and backward method (K3)	3	2	1	1	-	-	-	-	-	-	-	-
	CO4: Use Interpolating with a cubic spline (K3)	3	2	1	1	-	-	-	-	-	-	-	-
	CO5: Apply the formula for equal and unequal intervals (K4)	3	3	2	2	-	-	-	-	-	-	-	-
	CO6: Define the Laplace and Poisson Equations. (K1)	1	1	-	-	-	-	-	-	-	-	-	-
	CO7: Explain the possible solutions for two dimensional heat equation (K2)	2	1	-	-	-	-	-	-	-	-	-	-
	CO8: Solve the problems based on Runge-kutta method and Milne's & Adam's method(K3)	3	2	1	1	-	-	-	-	-	-	-	-
	CO9: Solve the problems based on one dimensional wave equation & heat equation (K3)	3	2	1	1	-	-	-	-	-	-	-	-
	Average	2.7	2	1.1	1.1	-	-	-	-	-	-	-	-

NAME OF THE STAFF: RAMESH V

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech.
Pudukkottai - 622 507.

COURSE MAPPING CHART

COURSE NAME: **CE8401- CONSTRUCTION TECHNIQUES AND PRACTICES** YEAR & SEMESTER: **II & IV**

Students will be able to	CO	PO1(K3	PO2(K4	PO3(K5	PO4(K5	PO5 (K3,5,6)	PO6	PO7	PO8	PO9	P10	P11	P12
Explain the various construction techniques involved in building construction.	C209.1(K2)	2	1	-	-	2	-	-	-	-	-	-	-
Classify the buildings based on their performance.	C209.2(K2)	2	1	-	-	2	-	-	-	-	-	-	-
Interpret the techniques involved in masonry, floor, and roof constructions.	C209.3(K2)	2	1	-	-	2	-	-	-	-	-	-	-
Execute the foundation marking on ground.	C209.4(K3)	3	2	1	1	3	-	-	-	-	-	-	-
Describe the various techniques involved in tunneling and piling processes.	C209.5(K2)	2	1	-	-	2	-	-	-	-	-	-	-
Discuss the various construction methods involved under water.	C209.6(K2)	2	1	-	-	2	-	-	-	-	-	-	-
Summarize the different construction methods for super structures.	C209.7(K2)	2	1	-	-	2	-	-	-	-	-	-	-
Select the equipment for various earthwork operations.	C209.8(K2)	2	1	-	-	2	-	-	-	-	-	-	-
Operate the concrete mixer machine to mixing the concrete.	C209.9(K3)	3	2	1	1	3	-	-	-	-	-	-	-
	C209	2.2	1.2	0.2	0.2	2.2							

NAME OF THE STAFF: S.M.Manikandan

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukk[illegible]

Mount Zion College of Engineering & Technology

CIVILENGINEERING

COURSE MAPPING CHART

COURSE NAME:STRENGTH OF MATERIALS-II

YEAR & SEMESTER:II &IV SEMESTER

B.E CIVIL	CO Statement	CO	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	P10	P11	P12
	At the end of the course, the students will													
CE8402 – STRENGTH OF MATERIALS-II	**Paraphrase** knowledge regarding strain energies involved in a material. (k2)	C212.1	2	1	-	-	2	-	-	-	-	-	-	-
	Usingenergy theorems in solving problems. (k3)	C212.2	3	2	1	1	1	-	-	-	-	2	-	-
	Classify indeterminate beams by theorem of three moments. (k2)	C212.3	2	1	-	-	2	-	-	-	-	-	-	-
	Executing theorems in solving indeterminate beams with shear force and bending moment. (k3)	C212.4	3	2	1	1	1	-	-	-	-	2	-	-
	Exemplify stresses and changes in thick and thin cylinders. (k2)	C212.5	2	1	-	-	2	-	-	-	-	-	-	-
	Summarise columns based on their end conditions. (k2)	C212.6	2	1	-	-	2	-	-	-	-	-	-	-
	Describe various stress and strain theories. (k2)	C212.7	2	1	-	-	2	-	-	-	-	-	-	-
	Usingfailure theorems in analyzinga material. (k3)	C212.8	3	2	1	1	1	-	-	-	-	2	-	-
	Explain about unsymmetrical bending of symmetrical and unsymmetrical sections. (k2)	C212.9	2	1	-	-	2	-	-	-	-	-	-	-
	TOTAL	C212	2.3	1.3	0.3	0.3	1.67	-	-	-	-	0.6	-	-

NAME OF THE STAFF:**SUJIN JOSE.S**

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

Mount Zion College of Engineering & Technology

COURSE MAPPING CHART

COURSE NAME:APPLIED HYDRAULIC ENGINEERING **YEAR & SEMESTER: II & IV SEMESTER**

BE CIIVL ENGG	CO Statement At the end of the course, the students will	CO	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	P10	P11	P12
CE 8403 APPLED HYDRAULIC ENGINEERING	know the terms of the open channel flow equations and explain the interactions among the terms(k2)	C401.1	2	1	–	–	2	2	–	–	–	–	2	2
	solve the open channel flow equations from the basic conservation equations.(k3)	C401.2	3	2	1	1	3	3	–	–	–	–	3	3
	Understand the flow profiles in channel transitions (k2)	C401.3	3	2	1	1	3	3	–	–	–	–	3	3
	solve problems in uniform, gradually and rapidly varied flows in steady state conditions(k3)	C401.4	2	1	–	–	2	2	–	–	–	–	2	2
	Explain the physical mechanisms of hydraulic jumps, surges(k3)	C401.5	3	2	1	1	3	3	–	–	–	–	3	3
	compute the flow of Ideal fluids in terms of mathematics and estimate quantities necessary in design applications(k3)	C401.6	3	2	1	1	3	3	–	–	–	–	3	3
	To know about the various Pumps, its working and applications.(k2)	C401.7	2	1	–	–	2	2	–	–	–	–	2	2
	Design suitable types of pumps for various applications(k3)	C401.8	3	2	1	1	3	3	–	–	–	–	3	3
	Acquire skills in roto-dynamic machineries that will help in their day-to-day-life(k3)	C401.9	3	3	3	3	3	3	–	–	–	–	3	3
	TOTAL		24	16	8	8	24	24	–	–	–	–	24	24
	AVERAGE		3	2	1	1	3	3	–	–	–	–	3	3

NAME OF THE STAFF:**REGINA MARY.I**

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

Mount Zion College of Engineering & Technology
CIVILENGINEERING
COURSE MAPPING CHART

PROGRAM NAME: CIVIL ENGINEERING

YEAR & SEMESTER: II &IV SEMESTER

BE CIIVL ENGG	CO Statement At the end of the course, the students will be able to	CO	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE8404 CONCRETE TECHNOLOGY	Acquire knowledge on the test properties of various Ingredients of concrete**(k2)**	C214.1	3	1	-	-	2	–	–	–	–	–	–	–
	Classify the various requirements of cement, aggregates and water for making concrete**(k2)**	C214.2	2	1	-	-	2	–	–	–	–	–	–	–
	Inferring suitable admixture for concrete with special properties**(k2)**	C214.3	2	1	-	-	2	–	–	–	–	–	–	–
	Compare the appropriate type concrete for specific application**(k2)**	C214.4	3	1	-	-	2	–	–	–	–	–	–	–
	Relate the tests for material properties & quality control of concrete**(k2)**	C214.5	3	1	-	-	2	–	–	–	–	–	–	–
	Explaining the durability properties of concrete**(k2)**	C214.6	2	1	-	-	2	–	–	–	–	–	–	–
	Summarizing the importance and application of special concretes.**(k2)**	C214.7	2	1	-	-	2	–	–	–	–	–	–	–
	Carrying out the design of concrete mix by IS method and ACI method**(k3)**	C214.8	3	2	-	-	3	–	–	–	–	–	–	–
	Exemplifying to assess the durability and other properties of concrete under various environments**(k2)**	C214.9	2	1	-	-	2	–	–	–	–	–	–	–
	AVERAGE	C214	2.2	1	-	-	1.9	–	–	–	–	–	–	–

NAME OF THE STAFF: **SOFIA.G**

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507

Mount Zion College of Engineering & Technology

CIVILENGINEERING

COURSE MAPPING CHART

COURSE NAME:SOIL MECHANICS

YEAR & SEMESTER:II& IV

	CO Statement		PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6(K3)	PO7	PO8	PO9(K3)	P10	P11(K4)	P12(K5)
	At the end of the course, tl e students will be able to													
B.E CIVIL	Summarize the basics of soi mechanics and soil properties(k2)	C215.1	2	1	0	0								
	Classify the soil and assess the engineering properties, based on index properties(k2)	C215.2	2	1	0	0								
CE 8491 SOIL MECHANICS	Carry out field investigations and to indentify soils in geotechnical engineering practice(k3)	C215.3	3	2	1	1								
	Understand the stress concepts in soils(k2)	C215.4	2	1	0	0								
	Carry out soil parameters such as permeability, compaction (k3)	C215.5	3	2	1	1								
	Understand the fundamental concepts of compaction, flow through soil, stress transformation, stress distribution, consolidation.(k2)	C215.6	2	1	0	0								
	Understand and identify the settlement in soils (k2)	C215.7	2	1	0	0								
	Carryout the shear strength of soil (k3)	C215.8	3	2	1	1								
	Compare both finite and infinite slopes (k2)	C215.9	2	1	0	0								
	AVERAGE	C215	2.3	1.33	0.33	0.33								

NAME OF THE STAFF: VIDYA KALAIVANI.R

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

Mount Zion College of Engineering & Technology

CIVILENGINEERING

COURSE MAPPING CHART

COURSE NAME:DESIGN OF REINFORCED CEMENT CONCR TE ELEMENTS

YEAR & SEMESTER:III & V SEMESTER

B.E CIVIL	CO Statement At the end of the course, the students will	CO	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	P10	P11	P12
CE8501 – DESIGN OF REINFORCED CEMENT ONCRETE ELEMENTS	**Apply** and **design** the various basic elements such as beams, slabs using working stress method and limit state method (k3)	C301.1	3	2	1	1	1	-	-	-	-	2	-	-
	Apply the behavior of the RC beams in shear and torsion (k3)	C301.2	3	2	1	1	1	-	-	-	-	2	-	-
	Apply the Design of different types of slabs and stair cases under different loading conditions (k3)	C301.3	3	2	1	1	1	-	-	-	-	2	-	-
	Apply the **design** of short rectangular and circular columns under different bending (k3)	C301.4	3	2	1	1	1	-	-	-	-	2	-	-
	Explain the different types of loadings on footings, column, beam, slab (k2)	C301.5	2	1	-	-	2	-	-	-	-	-	-	-
	TOTAL	C301	2.8	1.8	0.8	0.8	1.2	-	-	-	-	1.6	-	-

NAME OF THE STAFF:**SUJIN JOSE.S**

VERIFIED BY HOD

Head of the Department
Civil Engineering
Mount Zion College of Engg. & Tech.
Pudukkottai - 622 507.

Mount Zion College of Engineering & Technology

CIVILENGINEERING

COURSE MAPPING CHART

COURSE NAME:CE8502 STRUCTURAL ANALYSIS-I

YEAR & SEMESTER: III & V SEMESTER

	CO Statement	CO	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	P10	P11	P12
CE8502 – STRUCTURAL ANALYSIS I	At the end of the course, the students will													
	Attribute the continuous beam, plane frames & plane truss using strain energy method(K3)	C302.1	2	3	-	-	-	-	-	-	-	-	-	-
	Organize the structures by using slope deflection method by symmetric loading.(K3)	C302.2	1	2	2	-	-	-	-	-	-	-	-	-
	Analyze structures for continuous beam and rigid frame with and without sway by moment distribution method. (K3)	C302.3	1	2	2	-	-	-	-	-	-	-	-	-
	Integrate the pin jointed plane frames, continuous beam and rigid frame using flexibility method (K3)	C302.4	2	3	-	-	-	-	-	-	-	-	-	-
	Organize the pin jointed plane frames, continuous beam and rigid frame indeterminate structures using various stiffness methods(K3)	C302.5	2	3	-	-	-	-	-	-	-	-	-	-
TOTAL		C302	8	13	4	-	-	-	-	-	-	-	-	-

NAME OF THE STAFF:**STANLEY JOSE A**

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

DEPARTMENT OF CIVIL ENGINEERING

COURSE MAPPING CHART

COURSE NAME: **EN8491- WATER SUPPLLY ENGINEERING**

YEAR & SEMESTER: **III &V**

Students will be able to	CO	PO1(K3)	PO2(K4)	PO3(K5)	PO4(K5)	PO5 (K3,5,6)	PO6	PO7	PO8	PO9	P10	P11	P12
Calculate the future population by using population forecasting methods.	C209.1(K2)	2	1	-	-	2	-	-	-	-	-	-	-
Estimate the water demand for particular town.	C209.2(K2)	2	1	-	-	2	-	-	-	-	-	-	-
Design the various functional units in water treatment.	C209.3(K3)	3	2	1	1	3	-	-	-	-	-	-	-
Use the various advanced watertreatment methods in water purification.	C209.4(K3)	3	2	1	1	3	-	-	-	-	-	-	-
Demonstrate the various test carried out for laying of water pipe.	C209.5(K3)	3	2	1	1	3	-	-	-	-	-	-	-
	C209	2.6	1.6	0.6	0.6	2.6							

Name of the staff:S.M.Manikandan

Signature of HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

Mount Zion College of Engineering & Technology

CIVILENGINEERING

COURSE MAPPING CHART

COURSE NAME: FOUNDATION ENGINEERING

YEAR & SEMESTER: III & V SEMESTER

COURSE	CO Statement: At the end of the course, the students will	CO	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5(k5)	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE 8591 – FOUNDATION ENGINEERING	**Explain** various methods of Exploration and sampling (k2)	C304.1	2	1	0	-	-	-	-	-	-	-	-	-
	Summarize the methods of minimizing the Settlement (k2)	C304.2	2	1	0	-	-	-	-	-	-	-	-	-
	Carry out proportioning of foundations (k3)	C304.3	3	2	1	-	-	-	-	-	-	-	-	-
	Carry out the load carrying capacity and Settlement of Pile Group (k3)	C304.4	3	2	1	-	-	-	-	-	-	-	-	-
	Carry out Earth pressure problems using Cullman's method (k3)	C304.5	3	2	1	-	-	-	-	-	-	-	-	-
TOTAL		C304	2.6	1.6	0.6		-	-	-	-	-	-	-	-

NAME OF THE STAFF: **FAMITHA M.**

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507.

Mount Zion College of Engineering & Technology

CIVILENGINEERING

COURSE MAPPING CHART

COURSE NAME: GE8071 DISASTER MANAGEMENT

YEAR & SEMESTER:III & V

B.E CIVIL	CO Statement At the end of the course, the students will	CO	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	PO10	PO11	PO12
GE8071 DISASTER MANAGEMENT	**Classify** the disasters, causes and their impact on environment and society-(K2)	C306.1	2	1	-	-	-	-	-	-	-	-	-	-
	Exemplifying the preliminary understanding of approaches of Disaster Risk Reduction (DRR) (K2)	C306.2	2	1	-	-	-	-	-	-	-	-	1	-
	Comparing the effects of disaster and their development (K2)	C306.3	2	1	-	-	-	-	-	-	-	-	1	-
	Explain the hazard and vulnerability profile of India, Scenarious in the Indian context. (K2)	C306.4	2	1	-	-	-	-	-	-	-	-	1	-
	Carrying out the Disaster damage assessment and management.(K3)	C306.5	3	2	1	-	-	-	-	-	-	-	1	-
	Average		2.2	1.2	0.2	-	-	-	-	-	-	-	0.8	-

NAME OF THE STAFF: B.Alageshwari / G.Sofia

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tech.
Pudukkottai - 622

Mount Zion College of Engineering & Technology

CIVILENGINEERING

COURSE MAPPING CHART

COURSE NAME: ORO551- RENEWABLE ENERGY SOURCES

YEAR & SEMESTER: III& V

COURSE	CO Statement	CO	PO1(k3)	PO2(k4)	PO3(k5)	PO4(k5)	PO5 (k3,5,6)	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	At the end of the course, the students will													
ORO551- RENEWABLE ENERGY SOURCES	**Interpreting** the solar radiation and its environmental impacts to power.(K2)	C306.1	2	1	-	-	-	-	1	-	-	-	-	-
	Classify the various collectors used for storing solar energy. (K2)	C306.2	2	1	-	-	-	-	-	-	-	-	-	-
	Explaining the various applications in solar energy.(K2)	C306.3	2	1	-	-	-	-	1	-	-	-	-	-
	Summarizing the wind energy and biomass and its economic aspects.(K2)	C306.4	2	1	-	-	-	-	-	-	-	-	-	-
	Explaining geothermal energy with other energy sources. (K2)	C306.5	2	1	-	-	-	-	-	-	-	-	-	-
	Average		2	1	-	-	-	-	0.4	-	-	-	-	-

NAME OF THE STAFF: M.VIJAY PRAKASH/ ANITHA.A

VERIFIED BY HOD

Head of the Department,
Civil Engineering,
Mount Zion College of Engg. & Tec
Pudukkottai - 622 507.