



2.6 Student Performance and Learning Outcomes

2.6.1 Programme and course outcomes for all Programmes offered by the institution are stated and displayed on website and communicated to teachers and students

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Geo- tagged photos of PO's displayed at HOD room



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Geo- tagged photos of PO's displayed at HOD room





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Geo- tagged photos of PO's displayed at laboratories



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ACCREDITATI



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Geo- tagged photo of PO's displayed at Seminar Hall





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[Transportation Engineering Lab]

PROGRAM OUTCOMES

- Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- Design / development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- 6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- 11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a

[Department of Civil Engineering, V]CET, Vazhakulam]

Photo of PO's printed in Transportation Engineering Laboratory manual (S6 Civil Engineering Lab)

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COURSE DATA SHEET

DEGREE: B Tech		
SEMESTER: 7 CREDITS: 2		
COURSE TYPE: LABORATORY		
CONTACT HOURS: 3 Hrs/Week		
LAB COURSE NAME: NA		

SYLLABUS:

DETAILS	HOURS
List of Experiments :	
TEST ON SOIL	
1. Califormia Bearing Ratio method.	
TEST ON BITUMEN	
2. Softening point of Bitumen	
3. Ductility test on Bitumen	
4. Specific gravity of Bitumen	
6. Stripping value test	2 has/see als
7. Viscosity using Viscometer	5 mrs/week
TESTS ON ROAD AGGREGATES	
8. Aggregate crushing value test	
9. Impact value test	
10. Shape tests - Flakiness index and Elongation index	
11. Los angles abrasion test	
12.Specific gravity &Water Absorbtion.	





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TEXT/REFERENCE BOOKS:

T/R	BOOK TITLE/AUTHORS/PUBLICATION
1.	S. K.Khanna, C. E. G. Justo, Highway engineering, Nem Chand Publications.
2.	L .R. Khadiyali, Principles and Practices of Highway Engineering, Khanna Publishers.

Н

COURSE PRE-REQUISITES:

C.CODE	COURSE NAME	DESCRIPTION	SEM
CE010 504		To familiarize students with the basic soil	
/C304	Geotechnical Engineering –I	properties and the concept of optimum	
		moisture content	
CE010		To familiarize students with the	S5
508/C308	Geotechnical Engineering	determination of specific gravity, water	
	Laboratory	content and optimum moisture content of	
		soil	
CE		To familiarize students with various	S7
CE 010705/C405	Transportation Engineering-II	pavement materials and pavement design	
010/05/C405		methods	

COURSE OBJECTIVES:

1	To make the students aware of the properties of various materials used in road construction
2	To enable the students to perform tests on materials used for road construction

COURSE OUTCOMES:

The students will able to:

S NO.	DESCRIPTION				
C 408. 1	Determine the properties of various materials used in road construction.				
C 408. 2	408.2 Develop the understanding of various IRC specifications and BIS standards related to pavement materials and mixes.				
C 408. 3	408.3 Prepare testing reports related to materials used for highway engineering works.				
C 408. 4	C 408. 4 Exercise quality control in the construction of highways.				
C 408. 5	C 408.5 Work as members of multidisciplinary project or research teams.				
CO's printed in course data sheet of Transportation Engineering Lab (S6 Civil					
Engineering Lab)					







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VAZHAKULAM, MUVATTUPUZHA - 686 (TEL- 0485 2262211, 2262255, 2262977	670
TRANSPORTATION ENGINEERIN	.G. LABORATORY
OBSERVATION RECORD	
YEAR. 201 9	
Name ANEENA WILSON	
BranchCIVIL	
Semester	
Reg. No. VJC 16 CE 02 7 of 2016 - 202	2Batch
Certified that this is the Bonafide Record of wo	rk done
by ANEENA WILSON	Azi
Nor 3 SIG	6722
Staff Member-in-Charge AP, CED Her	ad of the Department
atta	141-2015/19
Internal Examiner	External Examiner Fine John, AR CED
Vazhakulam	
Date 4 5 20.19.	



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Program Specific Outcomes:

- I Ability to utilize civil engineering principles and software-tal are appropriate to solve technical problems; prepare dosign and construction documents; create structural systems; Produce drawings, reports and quantity estimates related to the civil Engineering domain
- 3. Ability to utilize mordern surveying methods too land measurrement and/or construction layout and to conduct standar dized field/laboratory tests related to civil Engineering.

Course Outcomes:

The students will be able to.

- 1. Determine the properties of various materials used in pavement construction and their suitability.
- 2. Understand specifications and standards -IRC and 15; related to pavement materials and mixes.
- 3. Conduct dests and prepare reports related to materials used for pavements.
- f. Understand quality control and enercise the same in the construction of highway ..
- 5. Work as members and leaders of multidisa plinary project or research teams.

CO's written in Transportation Engineering Record of Student (S6 Civil Engineering Lab)





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Geo-tagged photo of CO's of Civil Engineering Lab at Notice board in the class rooms.

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(BROOD				
COURS	TRANSPORTATION ENG	RING	DEGREE: B Tech	
COURS	CODE: CE332 / C316	LAB	SEMESTER: 6 CREDITS: 1	and the second se
COURSI	AREA/STREAM: TRANSPO	ORTATION AND SUBVEVI	COURSE TYPE: LABORATORY	
CORRES	PONDING LAB COURSE CO	DE (IF ANY)	LAB COURSE NAME: TRANSPORTATION	
COURSI	COORDINATOR NAME : M	S. Nisa Ann. Mathew	ENGINEERING LAB	
COURSI 1 To 1 2 To 0 COURSI S NO. Cale, 1	OUTCOMES: The students aware of nable the students to perfe- OUTCOMES: The students will able	f the properties of various orm tests on materials use to: DESCRD	materials used in road construction d for road construction TION	
C316.2	Determine the properties of	of various materials used in	pavement construction and their suitability.	and the second
C316. 3	Conduct tests and prepare	reports related to materials	related to pavement materials and mixes.	
C316.4	11-1			the second se
	Onderstand quality contro	and exercise the same in the	e construction of highways.	
C316. 5	Work as members and least	ders of multidisciplinary pro-	oject or research teams.	

Geo-tagged photo of CO's of Civil Engineering Lab at Notice Board in the class room

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Internal Question paper with correlation to COs

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MATHEMATICS

MATHEMATICS - Third Semester B. Tech

(For all branches except Computer Science and Information Technology)

COD	E	COURSE NAME	CATEGORY	L	Τ	P	CREDIT
100000	GR ¹⁹ 1	PARTIAL DIFFERENTIAL	BASIC SCIENCE	3	1	0	4
MAT2	201	EQUATIONS AND COMPLEX	COURSE				
		ANALISIS	VAL	the s	1		
Prea	mble: 1	This course introduces basic ideas	of partial differential	equat	ions	whi	ch are
wide	ly used in	the modelling and analysis of a wid	le range of physical ph	enom	ena :	and l	as got
appli	cation ac	ross all branches of engineering. To	understand the basic	theory	of fi	inch	ions of
a con	nplex var	iable, residue integration and confor	mal transformation				
Prer	equisite:	A basic course in partial differentiat	tion and complex num	bers.			
Com			second and second second 11.1				
Cour	se Outco	omes. After the completion of the co	ourse me student will (be able	2 10		
CO 1	Unders	tand the concept and the solution of	partial differential equ	ation.	5		
CO 2	Analys	e and solve one dimensional wave ea	quation and heat equat	ion.			
CO 3	Unders	tand complex functions, its continuit	ty differentiability with t	he use	of C	auch	γ-
	Rieman	n equations.					100
CO 4	Evaluat	te complex integrals using Cauchy's	integral theorem and (Cauch	y's u	itegi	ral
0.05	Iormula	a, understand the series expansion of	analytic function	ularit	t and	Am	alat
0.05	residue	theorem to compute several kinds of re	eal integrals	manny	ano	Ap	pry .
L	1			-		-	
10000000							
Mapp	ping of co	urse outcomes with program outcom	es				
PO's	-	Broad area					
1000	_	and the second se					
PO 1		Engineering Knowledge					
70.1	_	Drahlem Analyzis					
102		Pioolem Analysis					
PO 3	-	Design/Development of solutions					
PO 4		Conduct investigations of complex pro	oblems				
PO 5	5	Modern tool usage 201	4 //				
PO 6	<u>D</u>	The Engineer and Society	1				
DO 7 Environment and Sustainability							
107							
PO 8	8	Ethics					
DOU 0		Individual and learn work					

2019Scheme Mathematics – Third Semester B-Tech Syllabus front page