

20CE3552 – HIGHWAY ENGINEERING LAB

Offering Branches	CE		
Course Category:	Program Core	Credits:	1.5
Course Type:	Practical	Lecture-Tutorial-Practical:	0-0-3
Prerequisites:	19BS1101 – Engineering Mathematics – I 19CE3306 – Surveying	Continuous Evaluation:	15
		Semester End Evaluation:	35
		Total Marks:	50

Course Outcomes

Upon successful completion of the course, the student will be able to:

CO1	Demonstrate road aggregate suitability in pavement construction.	K3
CO2	Examine bituminous material suitability in pavement construction.	K3
CO3	Calculate the mix proportions of the Bituminous mixes and subgrade properties.	K3
CO4	Analyze the volume, speed studies, traffic surveys at mid block, intersection and parking study.	K4
CO5	Interpret the air pollution and noise pollution.	K3

Contribution of Course Outcomes towards achievement of Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1			3	3									3	3
CO2			3	3									3	3
CO3			3	3									3	3
CO4			3	3									3	3
Avg.			3	3									3	3

1- Low

2-Medium

3-High

Course Content

Experiment No.1	Aggregate Crushing value test	CO1
Experiment No.2	Aggregate Impact value test	
Experiment No.3	Specific Gravity and Water Absorption tests	
Experiment No.4	Deval's Attrition value test	
Experiment No.5	Los Angeles Abrasion value test	
Experiment No.6	Shape tests	CO2
Experiment No.7	Penetration Test	
Experiment No.8	Ductility Test	
Experiment No.9	Softening Point Test	
Experiment No.10	Flash and Fire point tests	
Experiment No.11	Viscosity test	CO3
Experiment No.12	Marshall method	
Experiment No.13	North Dakota cone test	
Experiment No.14	Swell test	CO4
Experiment No.15	Traffic volume study at mid blocks	
Experiment No.16	Studies at intersection	
Experiment No.17	Turning movement	
Experiment No.18	Spot speed studies	
Experiment No.19	Parking study	CO5
Experiment No.20	Air pollution measurement	
Experiment No.21	Noise Pollution measurement	

Learning Resources

Text Books & Reference Manuals	<ol style="list-style-type: none"> 1. TE Lab Manual, Dept. of Civil Engg., PVPSIT. 2. Highway Engineering, (9th edition) by Khanna, S.K. and Justo ,C.E.G., Nem Chand Bros, Roorkee, 2010. 3. Traffic Engineering and Transportation Planning, (7th edition) by Kadiyali, L.R., Khanna Publishers, New Delhi, 2010. 4. Specifications for Roads and Bridges - Manual for Maintenance of roads, Most Publications,1976.
Reference Books	<ol style="list-style-type: none"> 1. Fundamentals of Transportation Engineering, (3rd edition) by Papacostas, C.S., Prentice Hall of India Pvt.Ltd, New Delhi, 2009. 2. Principles of Highway Engineering by Kadiyali, L.R., Khanna Publishers, New Delhi, 2012. 3. Traffic Planning and Design by Saxena, Dhanpat Rai Publishers, New Delhi, 2010. 4. Transportation Engineering - An Introduction, (3rd edition) by Jotin Khisty. C, Prentice Hall, Englewood Cliffs, New Jersey, 2012.
e- Resources & other digital material	<p>http://nptel.ac.in/courses.php http://jntuk-coeerd.in/</p>