

## 19CE4802C – ROAD SAFETY AUDITING

Course Category:	Program Elective	Credits:	3
Course Type:	Theory	Lecture-Tutorial- Practical:	3-0-0
Prerequisites:	19BS1101- Engineering Mathematics - I 19CE3502 - Highway Engineering	Continuous Evaluation:	30
		Semester End Evaluation:	70
		Total Marks:	100

### Course Outcomes

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

<b>CO1</b>	<b>Comprehend</b> the road safety trends and factors	K2
<b>CO2</b>	<b>Analyze</b> the traffic statistics and crash data	K4
<b>CO3</b>	<b>Assess, analyze</b> and study the road safety and hazardous locations	K4
<b>CO4</b>	<b>Evaluate</b> the road safety elements and management system	K5
<b>CO5</b>	<b>Understand</b> the Engineering, Enforcement and Educational measures	K2

### Contribution of Course Outcomes towards achievement of Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
<b>CO1</b>						2	2					2	2	1
<b>CO2</b>						2	2					2	2	1
<b>CO3</b>						2	2					2	2	1
<b>CO4</b>						2	2					2	2	1
<b>CO5</b>						2	2					2	2	1
<b>Avg.</b>						2	2					2	2	1

1- Low

2-Medium

3-High

## Course Content

<b>UNIT-1</b>	<b>ROAD SAFETY TRENDS:</b> Road accidents, Trends, causes, Collision diagrams <b>ROAD SAFETY FACTORS:</b> Human factors, road factors, driver factors; Speed and its effect on road safety; Vehicle factors	CO1
<b>UNIT-2</b>	<b>STATISTICAL INTERPRETATION:</b> Before-after methods in crash analysis, Recording of crash data; Accident Investigation and Analysis <b>CRASH DATA ANALYSIS:</b> Black Spot Identification Methods and Investigations: Multiple linear and logistic methods	CO2
<b>UNIT-3</b>	<b>ROAD SAFETY AUDITS:</b> Key elements of a road safety audit, Road Safety Audits & Investigations <b>HAZARDOUS LOCATIONS:</b> Methods for identifying hazardous road locations, Relevant IRC practices	CO3
<b>UNIT-4</b>	<b>ROAD SAFETY MANAGEMENT SYSTEM:</b> Multi-casual dynamic systems approach to safety; Road safety improvement strategies <b>ELEMENTS OF A ROAD SAFETY:</b> Elements of a road safety plan, Safety data Needs	CO4
<b>UNIT-5</b>	<b>ENGINEERING &amp; ENFORCEMENT MEASURES:</b> Preventive and speed control measures <b>ENGINEERING MEASURES:</b> Education of road users and safety drives	CO5

## Learning Resources

<b>Text Books</b>	1. Fundamentals of Transportation Engineering, (3rd edition) by Papacostas, C.S.,
-------------------	---

	<p>Prentice Hall of India Pvt.Ltd, New Delhi, 2009.</p> <p>2. Principles of Highway Engineering by Kadiyali, L.R., Khanna Publishers, New Delhi, 2012.</p> <p>3. Traffic Planning and Design by Saxena, Dhanpat Rai Publishers, New Delhi, 2010</p>
<b>Reference Books</b>	<p>1. Road Traffic and Work Zone Safety Manual, National Highway Authority of India, 2012.</p> <p>2. Rune Elvik and TrulsVaa, The Handbook of Road Safety Measures, Elsevier, 2004</p>
<b>e-Resources &amp; other digital material</b>	<p>1. <a href="http://nptel.ac.in/courses.php">http://nptel.ac.in/courses.php</a></p> <p>2. <a href="http://jntuk-coerd.in/">http://jntuk-coerd.in/</a></p>