

# Gopal Krishna College of Engineering and Technology

## Goura Hari Vihar, PO: Raniput, Jeypore-764005

### Lesson Plan (2025-2026)

**Name of the Subject:** Transportation Engineering

**Name of the Faculty:** Er. Pabani Patra

**Semester:** 5<sup>th</sup>

**Semester From:** July to Dec

**Branch:** Civil Engineering

**No. of Weeks:** 10 Weeks

#### **Module 1 (Week 1-2)**

Week	Class Day	Chapter
1st	1st	Introduction to Transportation Engineering and Modes of Transportation
	2nd	Historical Development of Road Construction
	3rd	Highway Development and Planning in India
	4th	Classification of Roads and Road Patterns
2nd	1st	Highway Alignment and Requirements
	2nd	Factors Controlling Alignment
	3rd	Engineering Surveys for Highway Alignment
	4th	Revision and Numerical Problems

#### **Module 2 (Week 3-4)**

Week	Class Day	Chapter
3rd	1st	Geometric Design of Highways
	2nd	Cross-sectional Elements of Highways
	3rd	Sight Distances
	4th	Horizontal Curves and Super Elevation
4th	1st	Radius of Horizontal Curve and Extra Widening
	2nd	Transition Curves and Setback Distance
	3rd	Vertical Alignment and Gradients
	4th	Vertical Curves and Grade Compensation

#### **Module 3 (Week 5-7)**

Week	Class Day	Chapter
5th	1st	Introduction to Traffic Engineering
	2nd	Traffic Volume and Speed Studies
	3rd	OD Studies and Capacity Studies
	4th	Level of Service and Peak Hour Factor
6th	1st	Parking Study and Accident Analysis
	2nd	Statistical Analysis of Traffic Data
	3rd	Traffic Flow Parameters
	4th	Traffic Control Devices and Signal Design
7th	1st	Intersections and Channelization
	2nd	Highway Pavement Materials
	3rd	Aggregate Properties and Tests
	4th	Bitumen Types and Quality Tests

**Module 4 (Week 8-10)**

<b>Week</b>	<b>Class Day</b>	<b>Chapter</b>
8th	1st	CBR Test of Soil
	2nd	Marshall Method for Mix Design
	3rd	Flexible Pavement Design using IRC 37
	4th	Rigid Pavement Design using IRC 58
9th	1st	Stress Analysis and Design of Joints
	2nd	Economic Analysis in Transportation
	3rd	Depreciation and Time Value of Money
	4th	Life Cycle Costing and Return on Investment
10th	1st	Revision of Complete Syllabus
	2nd	Important Numerical Problems
	3rd	Previous Year Questions Discussion
	4th	Final Revision and Doubt Clearing

**Books**

1. S. K. Khanna, Highway Engineering
2. S.C. Saxena, Textbook of Highway and Traffic Engineering
3. P. Chakraborty & A. Das, Principles of Transportation Engineering
4. L. R. Kadiyali, Traffic Engineering and Transport Planning