

**BHUBANANDA ODISHA SCHOOL OF
ENGINEERING, CUTTACK
DEPARTMENT OF CIVIL ENGINEERING**



LESSON PLAN

SUBJECT: HIGHWAY ENGG. (TH 4)

FACULTY: SWARNAPRAVA DEVI

ACCADEMIC SESSION: 2022-23

SEMESTER: 4TH

SEC: B

Sd/-
H O D (Civil Engg.)

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Discipline: Civil Engineering	Semester: 4th	Name of the teaching faculty: SWARNAPRAVA DEVI	
Subject: Highway Engg.	No. of Days / week class allotted: 05 period per week (Tues,Weds,Sat-1period each Fri-2 Period)	Semester : From date: 14-02-2023 to date : 23-05-2023 No of weeks: 15 weeks	
Week	Class Day	No of period available	Theory/Practical topic
1 st	14/02/2023	1	1 Introduction 1.1 Importance of Highway transportation: importance organizations like Indian roads congress,
	15/02/2023	1	1.1 Ministry of Surface Transport, Central Road Research Institute. 1.2 Functions of Indian Roads Congress
	17/02/2023	2	1.3 IRC classification of roads 1.4 Organization of state highway department
2 nd	21/02/2023	1	2 Road Geometric 2.1 Glossary of terms used in geometric and their importance.
	22/02/2023	1	2.1 Right of way
	24/02/2023	2	2.1 Formation width, road margin, road shoulder
	25/02/2023	1	2.1 carriage way, side slopes
3 rd	28/02/2023	1	2.1 Kerbs, formation level, camber and gradient.
	01/03/2023	1	2.2 Design and average running speed
	03/03/2023	2	2.2 stopping and passing sight distance. 2.3 Necessity of curves
4 th	04/03/2023	1	2.3 Horizontal and vertical curves including transition curves
	10/03/2023	2	2.3 super elevation, Methods of providing super – elevation
	11/03/2022	1	Monthly Class Test- 1

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5 th	14/03/2023	1	3 Road Materials 3.1 Difference types of road materials in use: soil, aggregates, and binders
	15/03/2023	1	3.2 Function of soil as highway Sub grade
	17/03/2023	2	3.3 California Bearing Ratio: methods of finding CBR valued in the laboratory and at site and their significance
	18/03/2023	1	3.4 Impact test, crushing strength test
6 th	21/03/2023	1	3.4 Water absorption test & soundness test
	22/03/2023	1	4 Road Pavements 4.1 Road Pavement: Flexible and rigid pavement
	24/03/2023	2	4.1 Their merits and demerits, typical cross-sections
	25/03/2023	1	3.4 Impact test, crushing strength test
7 th	28/03/2023	1	4.1 Functions of various components Flexible pavements:
	29/03/2023	1	4.2 Sub-grade preparation: Setting out alignment of road, setting out bench marks
	31/03/2023	2	4.2 Control pegs for embankment and cutting, borrow pits, making profile of embankment, construction of embankment, compaction, stabilization, preparation of sub grade, methods of checking camber, gradient and alignment as per recommendations of IRC, equipment used for sub grade preparation
8 th	04/04/2023	1	4.3 Sub base Course: Necessity of sub base, stabilized sub base, purpose of stabilization (no designs) Types of stabilization • Mechanical stabilization • Lime stabilization
	05/04/2023	1	• Cement stabilization • Fly ash stabilization 4.4 Base Course: Preparation of base course, Brick soling, stone soling and metalling
	08/04/2023	1	4.4 Water Bound Macadam and wet-mix Macadam, Bituminous constructions: Different types
9 th	11/04/2023	1	4.5 Surfacing: • Surface dressing (i) Premix carpet and (ii) Semi dense carpet
	12/04/2023	1	• Bituminous concrete

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9 th			• Grouting
	15/04/2023	1	4.6 Rigid Pavements: Concept of concrete roads as per IRC specifications
10 th	18/04/2023	1	5 Hill Roads: 5.1 Introduction: Typical cross-sections showing all details of a typical hill road in cutting
	19/04/2023	1	5.1 Partly in cutting and partly in filling
	21/04/2023	2	5.2 Breast Walls, Retaining walls, different types of bends
	22/04/2023	1	6 Road Drainage: 6.1 Necessity of road drainage work, cross drainage works
	25/04/2023	1	6.2 Surface and sub-surface drains and storm water drains. Location, spacing and typical details of side drains, side ditches for surface drainage
11 th	26/04/2023	1	6.2 Intercepting drains, pipe drains in hill roads, details of drains in cutting embankment, typical cross sections
	28/04/2023	2	INTERNAL ASSESSMENT
	29/04/2023	1	INTERNAL ASSESSMENT
	02/05/2023	1	7 Road Maintenance : 7.1 Common types of road failures – their causes and remedies
12 th	03/05/2023	1	7.2 Maintenance of bituminous road such as patch work and resurfacing
	06/05/2023	1	7.3 Maintenance of concrete roads – filling cracks, repairing joints, maintenance of shoulders (berm)
	09/05/2023	1	7.3 maintenance of traffic control devices 7.4 Basic concept of traffic study
13 th	10/05/2023	1	Traffic safety and traffic control signal
	12/05/2023	2	8 Construction equipments: Preliminary ideas of the following plant and equipment: 8.1 Hot mixing plant 8.2 Tipper, tractors (wheel and crawler) scraper, bulldozer dumpers, shovels,

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			graders, roller dragline
	13/05/2023	1	Monthly Class Test- 2
14 th	16/05/2023	1	8.3 Asphalt mixer and tar boilers 8.4 Road pavers 8.5 Modern construction equipments for road
	17/05/2023	1	REVISION
	20/05/2023	1	Previous Year Questions and Answers Discussion
15 th	23/05/2023	1	Previous Year Questions and Answers Discussion