

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF CIVIL ENGINEERING



LESSON PLAN

SUBJECT: HIGHWAY ENGG. (TH 4)

FACULTY: KANIT PALAKIA

ACCADEMIC SESSION: 2022-23

SEMESTER: 4TH

SEC: C

Sd/-
H O D (Civil Engg.)

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Discipline: Civil Engineering	Semester: 4th (c)	Name of the teaching faculty: Shri Kanit Palakia	
Subject: Highway Engg.	No of days per week class allotted: 05 periods/week (Mon, Tue, Wed, Thu and sat-1 period each)	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	1.1 Importance of Highway transportation
	15-02-2023	1	Importance organizations like Indian roads congress, Ministry of Surface Transport, Central Road Research Institute.
	16-02-2023	1	1.2 Functions of Indian Roads Congress
2 nd	20-02-2023	1	1.3 IRC classification of roads 1.4 Organisation of state highway department
	21-02-2023	1	2.1 Glossary of terms used in geometric and their importance,
	22-02-2023	1	Right of way, formation width, road margin, road shoulder
	23-02-2023	1	Carriage way, side slopes,
3 rd	25-02-2023	1	kerbs, formation level
	27-02-2023	1	Camber and gradient
	28-02-2023	1	2.2 Design and average running speed
	01-03-2023	1	Stopping sight distance
	02-03-2023	1	Stopping sight distance
4 th	04-03-2023	1	Passing sight distance
	06-03-2023	1	Numericals on Stopping sight distance
	09-03-2023	1	Numericals on Passing sight distance
5 th	11-03-2023	1	Monthly class test. 2.3 Necessity of curves, horizontal and vertical curves
	13-03-2023	1	Transition curves
	14-03-2023	1	Super-elevation
	15-03-2023	1	Methods of providing super – elevation
	16-03-2023	1	Numericals on transition curves
	18-03-2023	1	Numericals on superelevation
	20-03-2023	1	Discuss previous year questions

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6 th	21-03-2023	1	3.1 Difference types of road materials in use Soil,
	22-03-2023	1	aggregates, and binders
	23-03-2023	1	Class Test 1
	25-03-2023	1	3.2 Function of soil as highway Subgrade
7 th	27-03-2023	1	California Bearing Ratio
	28-03-2023	1	Methods of finding CBR valued in the laboratory and their significance
	29-03-2023	1	methods of finding CBR valued at site and their significance
8 th	03-04-2023	1	3.4 Testing aggregates: Abrasion test, impact test, Crushing strength test, water absorption test & soundness test Discuss previous year questions
	04-04-2023	1	4.1 Road Pavement: Flexible and rigid pavement, their merits and demerits
	05-04-2023	1	Typical cross-sections, functions of various components
	06-04-2023	1	Flexible pavements: 4.2 Sub-grade preparation: Setting out alignment of road, setting out bench marks,
	08-04-2023	1	control pegs for embankment and cutting, borrow pits
9 th	10-04-2023	1	Making profile of embankment, construction of embankment, compaction, stabilization, preparation of subgrade
	11-04-2023	1	Methods of checking camber, gradient and alignment as per recommendations of IRC, equipment used for subgrade preparation
	12-04-2023	1	4.3 Sub base Course: Necessity of sub base, stabilized sub base,
	13-04-2023	1	purpose of stabilization Types of stabilization
	15-04-2023	1	Mechanical stabilization, Lime stabilization, Cement stabilization, Fly ash stabilization
	17-04-2023	1	4.4 Base Course: Preparation of base course, Brick soling, stone soling and metalling, Water Bound Macadam and wet-mix Macadam,
	18-04-2023	1	Bituminous constructions: Different types

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10 th	19-04-2023	1	4.5 Surfacing: Surface dressing (i) Premix carpet and (ii) Semi dense carpet, Bituminous concrete, Grouting
	20-04-2023	1	4.6 Rigid Pavements: Concept of concrete roads as per IRC specifications Discuss previous year questions
11 th	24-04-2023	1	5.1 Introduction: Typical cross-sections showing all details of a typical hill road in cut
	25-04-2023	1	Typical cross-sections showing all details of a typical hill road partly in cutting and partly in filling
	26-04-2023	1	5.2 Breast Walls, Retaining walls
	27-04-2023	1	Different types of bends
	29-04-2023	1	INTERNAL ASSESSMENT
12 th	01-05-2023	1	Discuss previous year questions
	02-05-2023	1	6.1 Necessity of road drainage work, cross drainage works
	03-05-2023	1	6.2 Surface and sub-surface drains and storm water drains
	04-05-2023	1	Location, spacing and typical details of side drains, side ditches for surface drainage, intercepting drains, pipe drains in hill roads
	06-05-2023	1	Details of drains in cutting embankment, typical cross sections.
13 th	08-05-2023	1	Class Test 2
	09-05-2023	1	7.1 Common types of road failures – their causes and remedies
	10-05-2023	1	7.2 Maintenance of bituminous road such as patch work and resurfacing
	11-05-2023	1	7.3 Maintenance of concrete roads – filling cracks, repairing joints,
	13-05-2023	1	maintenance of shoulders (berm), maintenance of traffic control devices
14 th	15-05-2023	1	7.4 Basic concept of traffic study, Traffic safety and traffic control signal
	16-05-2023	1	Preliminary ideas of the following plant and equipment: 8.1 Hot mixing plant 8.2 Tipper, tractors (wheel and crawler) scraper, bulldozer, dumpers, shovels, graders, roller dragline
	17-05-2023	1	8.3 Asphalt mixer and tar boilers 8.4 Road pavers

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			8.5 Modern construction equipments for roads.
	18-05-2023	1	Revision
	20-05-2023	1	Revision
15 th	22-05-2023	1	Discuss previous year questions
	23-05-2023	1	Discuss previous year questions