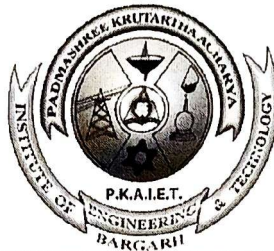


PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



PROGRESS REGISTER

Session-2022-2023

Discipline: Civil Engg.

Semester: 4th

Subject: HIGHWAY ENGINEERING

Name of the Teaching Faculty: ARUN KUMAR BHOT

Subject: HIGHWAY ENGINEERING No. of Days/per week class allotted 5

Semester From Date : 14-02-23 To Date : 23-05-23 No. of Weeks : 15

Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
14/02/23	Importance of Highway, History of road construction	Importance of Highway, History of road construction	Construction Designing Roman Roads	<u>Abshoi</u>
15/02/23	Modes of transportation	Modes of transportation	Land, water air mode	<u>Abshoi</u>
16/02/23	Functions of Indian Road congress	Functions of Indian Road congress	Planning, Research Technology equipment	<u>Abshoi</u>
17/02/23	IRC classification of roads	IRC classification of roads	NH, SH, MDR	<u>Abshoi</u>
20/02/23	Organisation of state highway department	Organisation of state highway department	IRC, NHAI, MORTH, CRI	<u>Abshoi</u>
21/02/23	Road geometric and their importance	Road geometric and their importance	classification of road, topography of area	<u>Abshoi</u>
22/02/23	Right of way, Road structure	Right of way, Road structure	Road alignment	<u>Abshoi</u>
23/02/23	Formation width, Road margin, carriage way	Formation width, Road margin, carriage way	Graded rail parking lane	<u>Abshoi</u>
24/02/23	Kerb, camber, Gradient, width of carriage way	Kerb, camber, Gradient, width of carriage way	Types of kerb, Necessity of camber	<u>Abshoi</u>
25/02/23	Design and average running speed	Design and average running speed	safe speed of vehicle	<u>Abshoi</u>
27/02/23	stopping sight distance	stopping sight distance	Features of road, vehicle speed	<u>Abshoi</u>

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28/02/23	Overtaking sight distance	Overtaking sight distance	Speed difference between vehicles	<u>Abhoi</u>
01/03/23	PIEV theory	PIEV theory	Perception Intellection Emotion volition	<u>Abhoi</u>
02/03/23	Reaction time of driver	Reaction time of driver	Brake reaction time, perception time	<u>Abhoi</u>
03/03/23	Overtaking zone	Overtaking zone	Overtaking prohibited pavement width	<u>Abhoi</u>
04/03/23	Numerical practice on SSD and OSD	Numerical practice on SSD and OSD	Problems are solved	<u>Abhoi</u>
06/03/23	Necessity of curves	Necessity of curves	Topography features Design speed	<u>Abhoi</u>
09/03/23	Horizontal, vertical and Transition curve	Horizontal vertical and Transition curve	Radius radius Reverse curve Summit curve	<u>Abhoi</u>
10/03/23	Road gradient	Road gradient	Slope of surface. Nature of traffic	<u>Abhoi</u>
11/03/23	Superelevation, necessity	Superelevation, necessity	cant, Banking. Drainage	<u>Abhoi</u>
13/03/23	Assignments	Assignments	Problems are discussed on SSD and OSD	<u>Abhoi</u>
14/03/23	Advantages of superelevation calculation	Advantages of superelevation calculation	Movement of vehicles centrifugal force	<u>Abhoi</u>

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Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
15/03/23	Minimum and maximum super-elevation	Minimum and maximum super-elevation	(e+f) for IRC recommendation Radius of curve	<u>ABhoi</u>
16/03/23	Types of gradients methods of super-elevation	Types of gradients methods of super-elevation	Height above mean sea level Average, floating feeling	<u>ABhoi</u>
17/03/23	Factors affecting gradient	Factors affecting gradient	Drainage Nature of traffic Topography of country	<u>ABhoi</u>
18/03/23	Different types of road materials binders	Different types of road materials binders	Aggregates Bituminous material, cement	<u>ABhoi</u>
20/03/23	Functions of soil in highway subgrade	Functions of soil in highway subgrade	Infiltration Rain water uniform support	<u>ABhoi</u>
21/03/23	CBR method finding in the laboratory	CBR method finding in the laboratory	2.5 mm and 5 mm penetration	<u>ABhoi</u>
22/03/23	Tests for road aggregates	Tests for road aggregates	Impact, shape, soundness	<u>ABhoi</u>
23/03/23	Abrasion test	Abrasion test	Los Angeles, Dorry, Deval abrasion	<u>ABhoi</u>
24/03/23	Impact test	Impact test	Toughness of rock	<u>ABhoi</u>
25/03/23	Crushing strength test	Crushing strength test	Strength of road aggregates crushing value	<u>ABhoi</u>
27/03/23	Water absorption test	Water absorption test	Weight of water absorbed values	<u>ABhoi</u>

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Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
28/03/23	Soundness test	soundness test	Resistance of aggregate to weathering	<u>Abhin</u>
29/03/23	Road pavement	Road pavement	Surfacing layer, Base, subbase	<u>Abhin</u>
31/03/23	flexible and rigid pavement	flexible and rigid pavement	soil subgrade sub base course	<u>Abhin</u>
03/04/23	Typical cross-section functions of various components	Typical cross-section functions of various components	sub soil, sub grade, base surfacing	<u>Abhin</u>
04/04/23	subgrade preparations	subgrade preparations	Dry subgrade foundation	<u>Abhin</u>
05/04/23	Equipment used for subgrade preparation	Equipment used for subgrade preparation	Excavating equipment Bull dozer	<u>Abhin</u>
06/04/23	Subbase course Necessity	subbase course Necessity	Pumping, Interlock between particles	<u>Abhin</u>
08/04/23	Stabilized sub base purpose of stabilization	stabilized subbase purpose of stabilization	shear strength, Bearing capacity	<u>Abhin</u>
10/04/23	Types of stabilization	Types of stabilization	Mechanical chemical polymer	<u>Abhin</u>
11/04/23	Base course preparation of base course	Base course preparation of base course	compaction stabilization Excavation	<u>Abhin</u>
12/04/23	Brick soling stone soling metaling	Brick soling stone soling metaling	Brick joints Granite Elastic deformation	<u>Abhin</u>

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Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
13/04/23	Water bound macadam, Wet-mix macadam	Water bound macadam, Wet-mix macadam	Hard crushed aggregate, subbase, base	<u>Abhri</u>
15/04/23	Assignments doubt clearing	Assignments doubt clearing	Various points discuss briefly	<u>Abhri</u>
17/04/23	Surfacing, Surface dressing	Surfacing, Surface dressing	Finished surface, Bituminous binder	<u>Abhri</u>
18/04/23	Bituminous concrete grouting, Rigid pavement	Bituminous concrete grouting, Rigid pavement	Melted bitumen viscosity	<u>Abhri</u>
19/04/23	Hill roads, Typical cross-section	Hill roads, Typical cross-section	cross-slope	<u>Abhri</u>
20/04/23	Partly excavating and partly in filling	Partly excavating and partly in filling	Excavation, soil filling	<u>Abhri</u>
21/04/23	Breast walls, Alignments in hill roads	Breast walls, Alignments in hill roads	cross-slope, utility of hill road	<u>Abhri</u>
24/04/23	Classification in hill roads	Classification in hill roads	Border road Organization General classification	<u>Abhri</u>
25/04/23	Retaining walls Drainage in hill roads	Retaining walls Drainage in hill roads	sub-surface drainage, surface drainage	<u>Abhri</u>
26/04/23	Basic principles of planning of hill roads	Basic principles of planning of hill roads	construction work, Master plan	<u>Abhri</u>
27/04/23	Geometric standards of hill roads	Geometric standards of hill roads	Camber, gradient, super-elevation, shoulder	<u>Abhri</u>

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Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
28/04/23	Necessity of road drainage	Necessity of road drainage	seepage water floods, Rain water	<u>Abhin</u>
29/04/23	cross drainage	cross-drainage	Elimalē drain Water, Aqueduct	<u>Abhin</u>
01/05/23	Surface and subsurface drains	surface and subsurface drains	sub soil, Infiltration, Ground water pumps	<u>Abhin</u>
02/05/23	Spacing and typical details of side drains	spacing and typical details of side drains	carriageway sloping drain	<u>Abhin</u>
03/05/23	Intercepting drains	Intercepting drains	Ground water remove	<u>Abhin</u>
04/05/23	Pipe drains in hill roads	Pipe drains in hill roads	Rain off Road channel	<u>Abhin</u>
06/05/23	Details of drain cutting embankment	Details of drain cutting embankment	seepage, Gradient	<u>Abhin</u>
08/05/23	Requirements of good highway drainage system	Requirements of good highway drainage system	cross-drainage Intercepting drains, side drain, water table	<u>Abhin</u>
09/05/23	Common types of road failures causes	Common types of road failures causes	shear failure, Longitudinal cracking, Formation of wave	<u>Abhin</u>
10/05/23	Maintenance of bituminous roads	Maintenance of bituminous roads	patch repairs stripping reavelling	<u>Abhin</u>
11/05/23	Maintenance of concrete roads	Maintenance of concrete roads	Mud jacking crack treatment patch repair	<u>Abhin</u>

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Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
12/05/23	Basic concept of traffic study	Basic concept of traffic study	Controlling, guiding, flow of traffic	<u>ABShri</u>
13/05/23	Traffic safety, Traffic control signal	Traffic safety, Traffic control signal	Stop, go, clearance time Traffic flow	<u>ABShri</u>
15/05/23	Traffic surveys	Traffic surveys	Parking survey Traffic volume speed and delay	<u>ABShri</u>
16/05/23	Road markings Road signs	Road markings Road signs	Arrow marking Kerb marking parking space limit	<u>ABShri</u>
17/05/23	Construction equipments	Construction equipments	Tractor, Bulldozer, Excavator Scraper	<u>ABShri</u>
18/05/23	Excavating equipments	Excavating equipments	Back trench, clamshell power shovel	<u>ABShri</u>
20/05/23	Equipments for cement concrete roads	Equipments for cement concrete roads	Patching Plant concrete mixer, Internal vibrator	<u>ABShri</u>
22/05/23	Equipments for bituminous roads	Equipments for bituminous roads	Bitumen heaters pavers, Bitumen mixers	<u>ABShri</u>
23/05/23	Modern construction equipments for roads	Modern construction equipments for roads	Excavator, Loaders, Trenchers Bulldozers	<u>ABShri</u>