



GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR

BRANCH:- CIVIL ENGINEERING

SEMESTER:- 4th


SUBJECT:- Th4. HIGHWAY ENGINEERING

Name of the Faculty- Er. SRIDHAR SAHU

		Topic to be taken				Actual topic taken			
Sl. No	Topic/Module	No. of period	Details of the topics	Date	Topic No.	Topic Name	Date	Remarks	
1	Introduction	5	1.1 Importance of Highway transportation: importance organizations like Indian roads congress, Ministry of Surface Transport, Central Road Research Institute. 1.2 Functions of Indian Roads Congress 1.3 IRC classification of roads 1.4 Organisation of state highway department	16.01.2024-20.01.2024	1.1 1.2 1.3 1.4	Importance of Highway transportation: importance organizations like Indian roads congress, Ministry of Surface Transport, Central Road Research Institute. Functions of Indian Roads Congress IRC classification of roads Organisation of state highway department	18.01.2024 19.01.2024 22.01.2024 24.01.2024 25.01.2024		
2	Road Geometrics	20	2.1 Glossary of terms used in geometric and their importance, right of way, formation width, road margin, road shoulder, carriage way, side slopes, kerbs, formation level, camber and gradient 2.2 Design and average running speed, stopping and passing sight distance 2.3 Necessity of curves, horizontal and vertical curves including transition curves and super elevation, Methods o f providing super – elevation	22.01.2024-22.02.2024	2.1 2.2 2.3	Glossary of terms used in geometric and their importance, right of way, formation width, road margin, road shoulder, carriage way, side slopes, kerbs, formation level, camber and gradient Design and average running speed, stopping and passing sight distance Necessity of curves, horizontal and vertical curves including transition curves and super elevation, Methods o f providing super – elevation	31.01.2024 01.02.2024 02.02.2024 05.02.2024 06.02.2024 07.02.2024 08.02.2024 09.02.2024 12.02.2024 13.02.2024 15.02.2024		

3	Road Materials	9	3.1 Difference types of road materials in use: soil, aggregates, and binders 3.2 Function of soil as highway Subgrade 3.3 California Bearing Ratio: methods of finding CBR valued in the laboratory and at site and their significance 3.4 Testing aggregates: Abrasion test, impact test, crushing strength test, water absorption test & soundness test	21.02.2024-01.03.2024	3.1 Difference types of road materials in use: soil, aggregates, and binders 3.2 Function of soil as highway Subgrade 3.3 California Bearing Ratio: methods of finding CBR valued in the laboratory and at site and their significance 3.4 Testing aggregates: Abrasion test, impact test, crushing strength test, water absorption test & soundness test	16.02.2024 19.02.2024 20.02.2024 21.02.2024 22.02.2024 23.02.2024 26.02.2024 27.02.2024	
4	Road Pavements	13	4.1 Road Pavement. 4.2 Sub-grade preparation: Setting out alignment of road, setting out bench marks etc. 4.3 Sub base Course: Necessity of sub base, stabilized sub base, purpose of stabilization. 4.4 Base Course:Preparation of base course, Brick soling, stone soling and metalling. 4.5 Surfacing 4.6 Rigid Pavements Concept of concrete roads as per IRC specifications	02.03.2024-19.03.2024	4.1 Road Pavement. 4.2 Sub-grade preparation: Setting out alignment of road, setting out bench marks etc. 4.3 Sub base Course: Necessity of sub base, stabilized sub base, purpose of stabilization. 4.4 Base Course:Preparation of base course, Brick soling, stone soling and metalling. 4.5 Surfacing 4.6 Rigid Pavements Concept of concrete roads as per IRC specifications	28.02.2024 29.02.2024 01.03.2024 04.03.2024 06.03.2024 07.03.2024 11.03.2024 12.03.2024 13.03.2024 14.03.2024 15.03.2024 18.03.2024 19.03.2024	
5	Hill Roads	7	5.1 Introduction: Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in filling 5.2 Breast Walls, Retaining walls, different types of bends	20.03.2024-30.03.2024	5.1 Introduction: Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in filling 5.2 Breast Walls, Retaining walls, different types of bends	20.03.2024 21.03.2024 22.03.2024 27.03.2024 28.03.2024 02.04.2024 03.04.2024	

6	Road Drainage	7	6.1 Necessity of road drainage work, cross drainage works 6.2 Surface and sub-surface drains and storm water drains. Location, spacing and typical details of side drains, side ditches for surface drainage, intercepting drains, pipe drains in hill roads, details of drains in cutting embankment, typical cross sections.	02.04.2024-09.04.2024	6.1 Necessity of road drainage work, cross drainage works 6.2 Surface and sub-surface drains and storm water drains. Location, spacing and typical details of side drains, side ditches for surface drainage, intercepting drains, pipe drains in hill roads, details of drains in cutting embankment, typical cross sections.	04.04.2024 05.04.2024 08.04.2024 09.04.2024 10.04.2024	
7	Road Maintenance	7	7.1 Common types of road failures – their causes and remedies 7.2 Maintenance of bituminous road such as patch work and resurfacing 7.3 Maintenance of concrete roads – filling cracks, repairing joints, maintenance of shoulders (berm), maintenance of traffic control devices 7.4 Basic concept of traffic study, Traffic safety and traffic control signal	10.04.2024-19.04.2024	7.1 Common types of road failures – their causes and remedies 7.2 Maintenance of bituminous road such as patch work and resurfacing 7.3 Maintenance of concrete roads – filling cracks, repairing joints, maintenance of shoulders (berm), maintenance of traffic control devices 7.4 Basic concept of traffic study, Traffic safety and traffic control signal	12.04.2024 15.04.2024 16.04.2024 18.04.2024 19.04.2024 22.04.2024	
8	Construction equipments	7	8.1 Hot mixing plant 8.2 Tipper, tractors scraper, bulldozer, dumpers, shovels, graders, roller dragline 8.3 Asphalt mixer and tar boilers 8.4 Road pavers 8.5 Modern construction equipments for roads.	20.04.2024-26.04.2024	8.1 Hot mixing plant 8.2 Tipper, tractors scraper, bulldozer, dumpers, shovels, graders, roller dragline 8.3 Asphalt mixer and tar boilers 8.4 Road pavers 8.5 Modern construction equipments for roads.	23.04.2024 24.04.2024 25.04.2024 26.04.2024	


 Signature and Stamp of HOD:
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 Civil Engg.
 Gandhi School of Engg.
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