

GOVERNMENT POLYTECHNIC LAKHISARAI				
DISCIPLINE:- CIVIL ENGINEERING				
SUBJECT:- HIGHWAY ENGINEERING (1615504)				
Week	Lecture Number/Day	UNIT No	Name of the Topic	Date
Week-1	1	Unit -1	Importance of road in India.	08-04-20
	2		Classification of roads according to Nagpur plan (Location and function), and third road development plan. Traffic and	08-05-20
	3		Classification of urban roads.	08-06-20
	4	Unit -2	Reconnaissance survey, Preliminary survey and Location survey for a road project.L-section and C/S sections	08-07-20
5	Fixing the alignment of road, factors affecting alignment of road.		08-10-20	
6	Drawings required for road project,Survey for availability of construction material, location plan of quarries.		08-12-20	
7	Unit -3		Camber- definition, purpose, types, IRC – specifications.	13/08/2020
8		Kerbs, road margin, road formation, right of way.	17/08/2020	
9		Design speed- IRC – specifications	18/08/2020	
10		Gradient – definition, types, IRC specification.	19/08/2020	
Week-3	11	Unit -3	Sight distances- definition, types, IRC specification.	20/08/2020
	12		Curves-Necessity, types- horizontal, vertical and transition curves.	24/08/2020
Week-4	13		Widening of roads on curves.	25/08/2020
	14		Super Elevation – definition, formula for calculating super elevation, minimum and maximum values of super elevation,	26/08/2020
	15	methods of providing super elevation.	27/08/2020	
	16	Sketching of standard C/S of national highway in embankment and cutting.	31/08/2020	
Week-5	17	Unit -3	Simple problems on geometric design of road.	09-01-20
	18		Revision of Key Concepts of Unit-3	09-02-20
	19		Types of road materials and Tests – soil, aggregates, bitumen, Cement Concrete. Test on soil sub grade- C.B.R. test,	09-03-20

	20		Test on Aggregate – Los Angeles abrasion, impact, and shape test.	09-07-20
Week-6	21		Tests on bitumen- Penetration, Ductility and Softening point test.	09-08-20
	22		Pavement – objective of pavement, structure of pavement, function of pavement components, types of pavement.	09-09-20
	23		Construction of earthen road – general terms used- borrows pits, spoil bank, lead and lift, balancing of earthwork.	09-10-20
	24		Construction procedure, Soil stabilized roads – necessity, methods of soil stabilization,	14/09/2020
Week-7	25	Unit- 4	brief details of mechanical soil stabilization, Water bound macadam roads – materials used, size and grading of aggregates and screening,	15/09/2020
	26		construction procedure including precautions in rolling, Construction of bituminous roads.	16/09/2020
	27		Terms used–bitumen, asphalt, emulsion, cutback, tar, common grades adopted for construction.	17/09/2020
	28		Types of bituminous surface – prime coat, tack coat, seal coat, dressing –	21/09/2020
Week-8	29		procedure of construction bituminous penetration macadam, and Bitumen/Tar carpets	22/09/2020
	30		procedure of construction. Cement concrete pavements- Construction procedure and equipments,	23/09/2020
	31		Construction joints, joint filler, joint sealer.	24/09/2020
	32		Revision of key concepts of unit - 4	28/09/2020
Week-9	33	Unit -5	Traffic volume study,	29/09/2020
	34		Traffic control devices- road signs, marking, Signals, Traffic island.	30/09/2020
	35		Road intersections- intersections at grade and grade separator intersections.	10-01-20
	36		Road accident. Building code IS:1904	10-05-20
Week-10	37	Definition of active earth pressure and passive earth pressure, structures subjected to earth pressure in the field	10-06-20	
	38	structures subjected to earth pressure in the field	10-07-20	
	39	revision of unit -5	10-12-20	
	40	Parts and functions of hill road components.	13/10/2020	

Week-11	41	Unit - 6	Types of curves, Hill road formation.	14/10/2020
	42		Land slides- causes and prevention.	15/10/2020
	43		Structures- drainage structures.	19/10/2020
	44	Unit- 7	Surface drainage – side gutter, catch water drains, surface drainage.	20/10/2020
45	Sub-surface drainage –Longitudinal drains and cross drains.		28/10/2020	
Week-12	46		revision of unit- 6 & 7	29/10/2020
	47	Unit - 8	Necessity of maintenance of roads	11-02-20
	48		Classification of maintenance operation – ordinary, routine and periodic maintenance.	11-03-20
Week-13	49		Maintenance of W.B.M., bituminous and cement concrete roads.	11-04-20
	50		Revision	11-05-20
	51		class test	11-09-20
	52		Daubt clear class	11-10-20