

LESSON PLAN-RBT**G.B.N GOVT. POLYTECHNIC, NILOKHERI**

NAME OF THE FACULTY :
DISCIPLINE : CIVIL ENGG.
SEMESTER : 5TH
SUBJECT : RAILWAYS, BRIDGES & TUNNELS
LESSON PLAN DURATION : 15 WEEKS

**WORK LOAD (LECTURE / PRACTICAL) PER WEEK(IN HOURS): LECTURES-05, PRACTICALS -
 NIL

WEEK	THEORY	
1 ST	1 ST DAY	INTRODUCTION TO INDIAN RAILWAY
	2 ND DAY	RAILWAY SURVEYS: FACTORS INFLUENCING THE RAILWAYS ROUTE, BRIEF DESCRIPTION OF VARIOUS TYPES OF RAILWAY SURVEY
	3 RD DAY	CLASSIFICATION OF PERMANENT WAY DESCRIBING ITS COMPONENT PARTS
	4 TH DAY	RAIL GAUGE: DEFINITION, TYPES, PRACTICE IN INDIA
	5 TH DAY	RAILS – TYPES OF RAILS
2 ND	1 ST DAY	REVISION AND DOUBTS
	2 ND DAY	TEST
	3 RD DAY	RAIL FASTENINGS: RAIL JOINTS, TYPES OF RAIL JOINTS
	4 TH DAY	FASTENINGS FOR RAILS, FISH PLATES, BEARING PLATES
	5 TH DAY	SLEEPERS: FUNCTIONS OF SLEEPERS, TYPES OF SLEEPERS
3 RD	1 ST DAY	REQUIREMENTS OF AN IDEAL MATERIAL FOR SLEEPERS
	2 ND DAY	REVISION AND DOUBTS
	3 RD DAY	TEST
	4 TH DAY	BALLAST: FUNCTION OF BALLAST, REQUIREMENTS OF AN IDEAL MATERIAL FOR BALLAST
	5 TH DAY	CROSSINGS AND SIGNALLINGS: BRIEF DESCRIPTION REGARDING DIFFERENT TYPES OF CROSSINGS/ SIGNALLINGS (LATEST ELECTRONICS OPERATED SIGNAL DEVICES)

4 TH	1 ST DAY	MAINTENANCE OF TRACK: NECESSITY, MAINTENANCE OF TRACK, INSPECTION OF SOIL, TRACK AND FIXTURES
	2 ND DAY	MAINTENANCE AND BOXING OF BALLAST MAINTENANCE GAUGES, TOOLS
	3 RD DAY	EARTH WORK AN DRAINAGE: FEATURES OF RAIL ROAD, BED LEVEL, WIDTH OF FORMATION
	4 TH DAY	SIDE SLOPES, DRAINS, METHODS OF CONSTRUCTION, REQUIREMENT OF DRAINAGE SYSTEM
	5 TH DAY	REVISION AND DOUBTS
5 TH	1 ST DAY	TEST
	2 ND DAY	INTRODUCTION TO BRIDGES
	3 RD DAY	BRIDGE – ITS FUNCTION AND COMPONENT PARTS, DIFFERENCE BETWEEN A BRIDGE AND A CULVERT
	4 TH DAY	CLASSIFICATION OF BRIDGES THEIR STRUCTURAL ELEMENTS AND SUITABILITY: ACCORDING TO LIFE-PERMANENT AND TEMPORARY ACCORDING TO DECK LEVEL – DECK, THROUGH AND SEMI-THROUGH
	5 TH DAY	ACCORDING TO MATERIAL –TIMBER, MASONRY, STEEL, RCC, PRE-STRESSED ACCORDING TO STRUCTURAL FORM; - GRADE SEPERATORS-RAILWAY OVERBRIDGES (ROB), RAILWAY UNDERBRIDGE (RUB)
6 TH	1 ST DAY	ARCH TYPE – OPEN SPANDREL AND FILLED SPANDREL BARREL AND RIB TYPE - SUSPENSION TYPE – UNSTIFFENED AND STIFFENED AND TABLE (ITS DESCRIPTION WITH SKETCHES)
	2 ND DAY	ACCORDING TO THE POSITION OF HIGHEST FLOOD LEVEL SUBMERSIBLE AND NON SUBMERSIBLE
	3 RD DAY	IRC CLASSIFICATION
	4 TH DAY	REVISION AND DOUBTS
	5 TH DAY	TEST
7 TH	1 ST DAY	BRIDGE FOUNDATIONS: INTRODUCTION TO OPEN FOUNDATION
	2 ND DAY	PILE FOUNDATION, WELL FOUNDATION
	3 RD DAY	PIERS, ABUTMENTS AND WINGWALLS PIERS-DEFINITION, PARTS; TYPES –SOLID (MASONRY AND RCC), OPEN
	4 TH DAY	ABUTMENTS AND WING WALLS – DEFINITION, TYPES OF ABUTMENTS (STRAIGHT AND TEE), ABUTMENT WITH WING WALLS (STRAIGHT, SPLAYED, RETURN AND CURVED)

	5 TH DAY	LAUNCHING OF EQUIPMENT BRIDGES
8 TH	1 ST DAY	REVISION AND DOUBTS
	2 ND DAY	TEST
	3 RD DAY	BRIDGE BEARINGS PURPOSE OF BEARINGS
	4 TH DAY	TYPES OF BEARINGS – FIXED PLATE, ROCKER AND ROLLER.
	5 TH DAY	MAINTENANCE OF BRIDGES
9 TH	1 ST DAY	REVISION AND DOUBTS
	2 ND DAY	REVISION AND DOUBTS
	3 RD DAY	TEST
	4 TH DAY	INSPECTION OF STEEL AND EQUIPMENT BRIDGES
	5 TH DAY	ROUTINE MAINTENANCE
10 TH	1 ST DAY	INTRODUCTION TO TUNNELS
	2 ND DAY	DEFINITION AND NECESSITY OF TUNNELS
	3 RD DAY	TYPICAL SECTION OF TUNNELS FOR A NATIONAL HIGHWAY
	4 TH DAY	TYPICAL SECTION FOR SINGLE AND DOUBLE BROAD GAUGE RAILWAY TRACK
	5 TH DAY	VENTILATION –NECESSITY
11 TH	1 ST DAY	REVISION AND DOUBTS
	2 ND DAY	REVISION AND DOUBTS
	3 RD DAY	TEST
	4 TH DAY	METHODS OF VENTILATION BY BLOWING
	5 TH DAY	EXHAUST AND COMBINATION OF BLOWING AND EXHAUST
12 TH	1 ST DAY	TEST
	2 ND DAY	TEST
	3 RD DAY	DRAINAGE METHOD OF DRAINING WATER IN TUNNELS

	4 TH DAY	REVISION OF PILE FOUNDATION, WELL FOUNDATION
	5 TH DAY	REVISION OF ABUTMENTS AND WING WALLS – DEFINITION, TYPES OF ABUTMENTS (STRAIGHT AND TEE), ABUTMENT WITH WING WALLS (STRAIGHT, SPLAYED, RETURN AND CURVED)
13 TH	1 ST DAY	LIGHTING OF TUNNELS
	2 ND DAY	REVISION OF RAILWAY SURVEYS: FACTORS INFLUENCING THE RAILWAYS ROUTE, BRIEF DESCRIPTION OF VARIOUS TYPES OF RAILWAY SURVEY
	3 RD DAY	TEST
	4 TH DAY	REVISION OF CLASSIFICATION OF PERMANENT WAY DESCRIBING ITS COMPONENT PARTS
	5 TH DAY	TEST
14 TH	1 ST DAY	REVISION OF RAIL GAUGE: DEFINITION, TYPES, PRACTICE IN INDIA
	2 ND DAY	TEST
	3 RD DAY	REVISION OF RAILS – TYPES OF RAILS
	4 TH DAY	REVISION OF RAIL FASTENINGS: RAIL JOINTS, TYPES OF RAIL JOINTS
	5 TH DAY	REVISION OF FASTENINGS FOR RAILS, FISH PLATES, BEARING PLATES
15 TH	1 ST DAY	TEST
	2 ND DAY	TEST
	3 RD DAY	REVISION OF SLEEPERS: FUNCTIONS OF SLEEPERS, TYPES OF SLEEPERS
	4 TH DAY	REVISION OF CROSSINGS AND SIGNALLINGS: BRIEF DESCRIPTION REGARDING DIFFERENT TYPES OF CROSSINGS/ SIGNALLINGS (LATEST ELECTRONICS OPERATED SIGNAL DEVICES)
	5 TH DAY	REVISION AND DOUBTS