

<b>PROGRAMME : CIVIL ENGINEERING</b> <b>COURSE NAME : RAILWAY &amp; BRIDGE ENGG.</b> <b>COURSE CODE : TH-3</b> <b>SEMESTER : 5<sup>TH</sup></b> <b>PERIODS/WEEK: 4</b> <b>TOTAL PERIODS: 60</b>		<b>NAME OF THE FACULTY: UTKALIKA PRADHAN</b> <b>SESSION : 2020-2021</b> <b>DATE : 01-09-2020 to 19-03-2021</b>
WEEK	CLASS	TOPICS
1	1	Introduction: Railway terminology ,Advantages of railways
	2	Classification of Indian Railways
	3	Definition and components of a permanent way
	4	Concept of gauge, different gauges prevalent in India
2	1	Suitability of gauges under different conditions
	2	Rails: Functions and requirement of rails, Types of rail sections, length of rails
	3	Rail joints – types, requirement of an ideal joint
	4	Purpose of welding of rails & its advantages
3	1	Creep- definition, cause & prevention
	2	Sleepers: Definition, function & requirements of sleepers
	3	Classification of sleepers & Advantages & disadvantages of different types of sleepers
	4	Ballast: Functions & requirements of ballast, Materials for ballast
4	1	Fixtures for Broad gauge: Connection of rails to rail-fishplate, fish bolts , Connection of rails to sleepers
	2	Introduction to bridges: Definitions , Components of a bridge
	3	Classification of bridges , Requirements of an ideal bridge
	4	Selection of bridge site, Alignment,
5	1	Determination of Flood Discharge
	2	Waterway & economic span
	3	Afflux: calculation
	4	Clearance & free board: Definitions & concept
6	1	Geometric for broad gauge: Typical cross – sections of single & double broad gauge railway track in cutting and embankment
	2	Permanent & temporary land width
	3	Gradients for drainage
	4	Super elevation – necessity & limiting value
7	1	Negative Super elevation: Concept
	2	Super elevation design for BG track
	3	Numerical problems on super elevation.
	4	Numerical problems on negative super elevation.
8	1	Bridge foundation: Definitions &Types of bridge foundations
	2	Spread foundation: Definition & types
	3	Pile foundation- Definition, Pile driving
	4	Well foundation – sinking of wells
9	1	Caisson foundation
	2	Coffer dams: Definition, concept
	3	Types of piers
	4	Types of abutments

<b>10</b>	<b>1</b>	Types of wing walls
	<b>2</b>	Approaches: Definition & types
	<b>3</b>	Points and crossings: Definition, necessity of Points and crossings
	<b>4</b>	Types of points with tie diagrams
<b>11</b>	<b>1</b>	Types of crossings with tie diagrams
	<b>2</b>	Methods of Laying of track
	<b>3</b>	Maintenance of track: methods
	<b>4</b>	Duties of a permanent way inspector
<b>12</b>	<b>1</b>	Culverts: Definition & concept
	<b>2</b>	Types of culverts – brief description
	<b>3</b>	Causeways: Definition & concept
	<b>4</b>	Types of causeway- brief description
<b>13</b>	<b>1</b>	Revision of chapter-1(railway)
	<b>2</b>	Revision of chapter-2(railway)
	<b>3</b>	Revision of chapter-3(railway)
	<b>4</b>	Revision of chapter-4(railway)
<b>14</b>	<b>1</b>	Revision of chapter-5(railway)
	<b>2</b>	Revision of chapter-6(railway)
	<b>3</b>	Revision of chapter-1(bridge)
	<b>4</b>	Revision of chapter-2(bridge)
<b>15</b>	<b>1</b>	Revision of chapter-3(bridge)
	<b>2</b>	Revision of chapter-4(bridge)
	<b>3</b>	Revision of chapter-5(bridge)
	<b>4</b>	Probable Questions discussion