



EE. PERUMAL MANIMEKALAI COLLEGE OF ENGINEERING
 Approved by AICTE, New Delhi. Affiliated to Anna University, Chennai.
 Accredited by NAAC with 'A' Grade & NBA (E) - CSE / ECE / EE (MECH & ETECH - E)
AN AUTONOMOUS INSTITUTION
 Komeripalli, HOSUR - 635 117

DEPARTMENT OF CIVIL ENGINEERING
LESSON PLAN

LESSON PLAN

PROGRAM	B E							Year II			
SEMESTER	IV							Batch: 2023-2027			
Faculty Name	Mr V S ARUL							Date: 10.01.2025			
Sub Code / Name	PUCE4PC06/HIGHWAY AND RAILWAY ENGINEERING										
Week	Lecture Date	Day	Period	Topics	Teaching Method (Lecture/ Practical/ Discussion/ Case/ Video)	Student Preparation (assignment etc....)	Ref Book No.s & Chapter No	Planned Hours	University Prescribed Hours (Lecture/ Tutorial)		
UNIT I HIGHWAY PLANNING AND ALIGNMENT											
1	20-Jan-25	MON	4	Introduction to highway engineering	Lecture		T1	9	9		
	21-Jan-25	TUES	4	History of road development in India	Lecture		T1				
	22-Jan-25	WED	1	Jayakar committee recommendations	Lecture		T1				
2	22-Jan-25	WED	5	About CRF	Lecture		T1				
	24-Jan-25	FRI	5	Functions of IRC, CRRI	Lecture	A-1	T1				
	25-Jan-25	SAT	4	Alignment factors	PPT		T1				
	27-Jan-25	MON	4	Engg survey conventional and modern methods	PPT		T1				
	28-Jan-25	TUES	4	Classification of highways	Lecture		T1				
	29-Jan-25	WED	1	Typical cross section elements of roads	Lecture		T1				
UNIT II GEOMETRIC DESIGN OF HIGHWAYS											
3	29-Jan-25	WED	5	Sight distances	Lecture		T1			9	9
	31-Jan-25	FRI	5	Stopping sight distance	Lecture		T1				
	1-Feb-25	SAT	4	overtaking sight distance	Lecture		T1				
	3-Feb-25	MON	4	Super elevation	Lecture	A-2	T1				
	4-Feb-25	TUES	4	Widening at curves	Lecture		T1				
4	5-Feb-25	WED	1	Transistion curves	Lecture		T1				
	5-Feb-25	WED	5	Vertical curves-gradients, grade compensation	Lecture		T1				
	7-Feb-25	FRI	5	Flexible pavement design procedure, Problems	Lecture		T1				
	8-Feb-25	SAT	4	Rigid pavement design Procedure	Lecture		T1				
UNIT III HIGHWAY CONSTRUCTION AND MAINTENANCE											
5	10-Feb-25	MON	4	Highway construction materials, properties, testing methods	Lecture		T1	9	9		
	12-Feb-25	WED		CBR Test for subgrade	Lecture		T1				
	12-Feb-25	WED	1	Tests on aggregate & bitumen, Test on Bituminous mixes	Lecture		T1				
	14-Feb-25	FRI	5	Construction practice including modern materials and methods	Lecture		T1				
	15-Feb-25	SAT	5	Bituminous and Concrete road construction	Lecture	A-3	T1				
6	17-Feb-25	MON		Polymer modified bitumen, Recycling	Lecture		T1				
	15-Feb-25	SAT	4	Different materials - Glass, Fiber, Plastic, Geo-Textiles, Geo-Membrane (problem not included)	PPT		T1				
	18-Feb-25	TUES	4	Quality control measures	Lecture		T1				
	18-Feb-25	TUES	8	Highway drainage — Construction machineries	Lecture		T1				
UNIT IV RAILWAY PLANNING AND CONSTRUCTION											
7	19-Feb-25	WED	5	Role of Indian Railways in National Development	Lecture		T1	9	9		
	21-Feb-25	FRI	5	Introduction about traditional and metro system with	Lecture		T1				
	24-Feb-25	MON	4	Elements of permanent way	Lecture		T1				
	25-Feb-25	TUES	4	Rails, Sleepers, Ballast, Rail fixtures and fastenings	Lecture		T1				
	26-Feb-25	WED	1	Selection of gauges-Track Stress	PPT		T1				
	26-Feb-25	WED	5	coning of wheels, creep in rails, defects in rails	Lecture		T1				
	28-Feb-25	FRI	5	Route alignment surveys, conventional and modern m	PPT		T1				
1-Mar-25	SAT	1	Geometric design of railway, gradient	Lecture		T1					

8	3-Mar-25	MON	4	widening of gauge on curves (Problems)	Lecture		T1	9	9
	UNIT V RAILWAY TRACK CONSTRUCTION MAINTENANCE AND OPERATION								
	4-Mar-25	TUES	4	Points and Crossings	Lecture		T1		
	5-Mar-25	WED	1	Design of Turnouts, Working Principle	Lecture		T1		
9	5-Mar-25	WED	5	Track Circuiting - Construction & Maintenance	Lecture		T1		
	7-Mar-25	FRI	5	Conventional, Modern methods and Materials	Lecture		T1		
	11-Mar-25	MON	4	Layouts of Railway Stations and Yards	Lecture		T1		
	12-Mar-25	TUES	4	Rolling Stock, Tractive Power,	Lecture		T1		
	13-Feb-25	WED	1	Track Resistance –Railways for Urban Transportatio	Lecture	A-3	T1		
	13-Feb-25	WED	5	LRT & MRTS Feasibility study	PPT		T1		
10	15-Feb-25	FRI	5	LRT & MRTS Planning and construction.	Lecture		T1		

TEXTBOOKS:

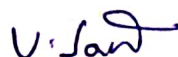
Sl.No	Author	Book Title	Publisher	Edition
1	Khanna.S. K., Justo.C.E.G and Veeraragavan A.	Highway Engineering	Nemchand Publishers	2014
2	Subramanian K.P	Highways, Railways, Airport and Harbour Engineering	Scitech Publications (India), Chennai	2010
3	Kadiyali.L.R	Principles and Practice of Highway Engineering	Khanna Technical Publications, 8th edition Delhi	2013

Reference Books

Sl.No	Author	Book Title	Publisher	Edition
1	Indian Road Congress (IRC)	Guidelines for the Design of Flexible Pavements, (Third Revision),	IRC	IRC: 37-2012
2	Indian Road Congress (IRC)	Guidelines for the Design of Plain Jointed Rigid Pavements for Highways, (Third Revision),	IRC	IRC: 58-2012
3	Yang H. Huang	Pavement Analysis and Design	Pearson Education Inc, Ninth Impression, South Asia,	2012
4	Garber and Hoel	Principles of Traffic and Highway Engineering	CENGAGE Learning, New Delhi	2010

Faculty consultation day&time,Lunch Hour : Everyday Lunch hour and Tea break
Faculty Instruction to Students :


FACULTY


HOD/CIVIL


PRINCIPAL
18/3/20