

Kadi Sarva Vishwavidyalaya, Gandhinagar
M.E. (Civil Infrastructure Engineering) Semester: II
 (w.e.f. Academic Year 2017-18)

Subject Name: Transportation Facility Design

Subject code: MECV204-N

A. Learning objectives:

The objective of this course is

- To understand the different forms of energy, types of power plant, hydropower development in India.
- Elements of hydropower scheme, Identification of the components of the hydro power plant scheme, including locations, and understand what they do in this study.

B. Teaching Scheme (Credits and Hours)

Teaching Scheme				Credit Scheme			Evaluation Scheme				
Lect (Hrs)	Tu (Hrs)	Prac. (Hrs)	Total (Hrs)	Theory	Pra/TW	Total	UE	IE	CIA	Prac/Viva	Total
04	02	00	06	04	01	05	70	30	20	30	150

C. Detailed Syllabus

Unit
No

Topics

1. Introduction

Design of highways, design of at-grade intersections, design of signalized intersection, design of grade separated intersection, terminal design, and design of facilities for non-motorized transport

2. Terminal Planning & Design

Terminal functions, analysis of terminals, process flow charts of passenger & goods terminals, terminal processing time, waiting time, capacity & level of service concept, study of typical facilities of highway, transit, airport and waterway terminals, concept of inland port.

3. Design of Highways:

Hierarchy of highway system, functions, design designations, concepts in horizontal & vertical alignment, integration, optical design, geometrical standards for mobility & accessibility components, landscaping and safety considerations, evaluation and design of existing geometrics

4. Design of Intersections:

Review of design of at-grade intersections, signal coordination – graphic methods & computer techniques, grade separated intersections – warrants for selection, different types & geometric standards, spacing & space controls, ramps & gore area design.

D. Lesson Planning:

Unit No	Topics	Hours	Weightage (%)
1.	Introduction	15	25
2.	Terminal Planning & Design	15	25
3.	Design of Highways	15	25
4.	Design of Intersections	15	25
Total		60	100

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E. Instructional Method and Pedagogy (Continuous Internal Assessment (CIA) Scheme)

- Attendance is compulsory in lectures which carries 05 Marks.
- At regular intervals assignments is given to all students which carries 10 marks. Evaluation of these assignments will be observed under Daily Homework Daily Assessment (DHDA) System.
- One internal exam of 30 marks is conducted as a part of internal theory evaluation.

E. Students Learning Outcomes:

At the end of the course,

- The students will get the experience to design of Intersections & Signals.
- To learn various aspects of Docks & Harbours.
- To students can analyses present & future facility of Transportation Facility Design.
- The students will get in depth knowledge of special aspect of facility & problems arises at Bus, Railway, Airport terminals

F. Text Books & Reference Books:

1. Kadiyali, L.R., Traffic Engineering and Transport Planning, Khanna publishers
2. IRC-SP41: Guidelines for the Design of At-Grade Intersections in Rural & Urban Areas
3. Salter, R J., Highway Traffic Analysis and Design, ELBS.
4. Edward K. Morlock, Introduction to Transportation Engineering & Planning, International Student Edition, Mc-Graw Hill Book Company, New York. . Khanna S.K., Arora M.G., Jain S.S., Airport Planning & Design, Nemchand Bros., Roorkee
5. Horenjeff Robert, The planning & Design of Airports, McGraw Hill Book Co.
6. Saxena S.C., Railway Engineering, Dhanpat Rai & Sons, 1995.
7. Vukan R. Vuchic, Urban Transit : Operations, Planning and Economics, Wiley Sons Publishers.
8. Bindra S.P., Docks & Harbour Engineering, Dhanpat Rai Publications
9. Srinivasan R., Harbours, Docks & Tunnel Engineering, Charotar Publishing House, Anand, 1999.