

SHIV NADAR UNIVERSITY
UNDERGRADUATE COURSE PROPOSAL

- I. COURSE TITLE:** Transportation Engineering - II
- II. COURSE CODE:** CED 309
- III. COURSE CREDITS (L:T:P):** (3:0:0)
- IV. COURSE TYPE:** UWE (Major Elective II)
- V. PREREQUISITE/S (IF ANY):** None
- VI. COURSE COORDINATOR/INSTRUCTOR(S):** Dr. Shalini Rankavat
- VII. SCHOOL/ DEPARTMENT:** SOE/Civil Engineering
- VIII. DISCIPLINES TO WHICH THE COURSE MAY BE OF INTEREST:** All
- IX. Objectives:**
- To know about the basics and design of various components of railway engineering
 - To study about the types and functions of track, junctions and railway stations
 - To learn about the aircraft characteristics, planning and components of airport
 - To study about the types and components of docks and harbours
 - To know about various urban transportation systems and Intelligent Transportation Systems
- X. Learning Outcomes:**
On completion of the course, the students will be able to:
- carry out the surveys for railways, airports and harbours
 - perform geometric design for the three modes
 - demonstrate the fundamentals of Urban Transportation Systems
 - perform Urban planning using four-step model
- XI. Course Content –**
1. **Railway Engineering** - Location surveys and alignment - Permanent way - Gauges - Components - Functions and requirements - Geometric design
Track Junctions-Points and crossings - types and functions - design and layout - simple problems - Railway stations and yards. Signaling and interlocking - control systems of train movements.
 2. **Airport Engineering**-Aircraft characteristics - Airport obstructions and zoning - Runway - taxiways and aprons- Terminal area planning

3. **Docks and Harbours** - Types - Layout and planning principles- breakwaters - docks- wharves and quays - Transit sheds- warehouses- navigation aids.
4. **Urban transportation systems** – Travel Demand; Four Step Model; Bus transit - Mass Rapid Transit System - Light Rail Transit. Intelligent Transportation Systems (ITS)

XII. RECOMMENDED BOOK(S):

1. Saxena and Arora. *Railway Engineering*. Dhanpat Rai Publications.
2. Saxena, S.C. *Airport Engineering : planning and design*
3. Rangwala, S.C. *Airport Engineering*. Charotar Publishing House
4. Srinivasan, R. *Harbour, Dock and Tunnel Engineering*. Charotar Publishing House

XIII. ASSESSMENT SCHEME:

Assignments/Presentation -	20%
Quiz -	10%
Mid Term Exam -	35%
Final Exam-	35%
Total-	100%