Year &	Course	Course Name: Railway and	No. of Credits:	L	T&PS	P
Sem:	Code:	Airport Engineering	4	2	2	0
	CE3604					

UNIT-I: Railway Engineering-I:

Historical Development of Railways in India, Advantages of Railways, Classification of Railways, Permanent Way & its components, functions. Track volume and Track capacity.

UNIT-II: Railway Engineering-II:

Rail Joints, Welding of rails and Creep of rails. Track Geometric Design, Gradients, Horizontal and Vertical curves, super elevation, Negative Super elevation, Coning of Wheels.

UNIT-III: Railway Engineering-III:

Turnouts: Left Hand Turnout, Track Junctions, Points and crossings, Tracks Drainage, Railway Stations and Yards, Signaling.

UNIT-IV: Dock and Harbor Engineering

Layout of Port, Components and Functions, Classification of Ports, Harbor and its classification, Site selection of ports & harbors, Natural phenomenon - Tides, Wind, Waves & Currents, Navigational aids.

UNIT-V: Airport Engineering:

Layout of Airports, Aircraft components and functions, Aircraft characteristics, Airport site selection, Airport obstructions, Wind rose Diagram, Runway design, Taxiway.

UNIT-VI:Tunnel

Alignment of tunnels – Cross-section of tunnels – Construction methods of Tunnels – Tunnel lining – Ventilation – Drainage

References/Text Books:

- 1. S.C. Saxena& S Arora, Railway Engineering, Dhanpatrai Publications, 6th edition, Reprint 2004.
- 2. Srinvasan, Docks & Harbor Engineering, Charotar Publishing House, 7th edition, 1983.
- 3. S.K. Khanna& M.G. Arora& S.S. Jain, Airport Planning & Design, Nem Chand & Brothers 1994, Roorkee, 5th Edition.

Lecture Plan: Unit-I & -II syllabus for MID-I, Unit-III & -IV syllabus for MID-II and Unit-V & -VI syllabus for MID-III examinations.

Video Lectures (Web Links):

1. http://www.nptelvideos.in/2012/11/transportation-engineering-ii.html