5th Semester	RCI5D004	Railway and Airport Engineering	L-T-P 3-0-0	3 Credits

MODULE-I   **(8 Classes)**

History of Indian railways, component parts of railway track, problems of multi gauge system, coning of wheels, alignments and survey, permanent way track components, Type of rail sections, creep of rails, wear and failure in rails , Ballast requirements, sleeper requirements, types of sleepers, various train resistances.

MODULE-II   **(8 Classes)**

Geometric design: Gradients and grade compensation, various speeds on a railway track, super-elevation, horizontal and vertical curves, Points and crossings, Design of simple turn-out, Signalling and interlocking.

MODULE-III   **(8 Classes)**

Airport site selection, Air craft characteristics, various surface of an airport, Wind rose diagram, Geometric elements of run way and taxiway , holding apron, parking configuration , terminal building , visual aids, air traffic control, airport marking and lighting.

MODULE-IV   **(8 Classes)**

Harbour Engineering: Classification of Harbour basin, general layout of harbours, Docks, Different components of docks.

MODULE-V   **(8 Classes)**

Inland waterways, Inland water transportation in India, classification of waterways, economics of inland waterways transportation, national waterways

Books:

1. A text book of railway engineering , By S.C.Saxena and M.G.Arora
2. Railway Engineering by Satish Chandra & MM Agrawal, Oxford University Press.
3. Transportation Engineering, Volume-II- Railways, Airports, Docks and Harbours, Bridges and Tunnels by C. venkatramaih, Universities Press
4. Air-port Engineering by S.K.Khanna and M.G.Arora

Digital Learning Resources:

Course Name	Transportation Engineering II
Course Link	https://nptel.ac.in/courses/105/107/105107123/
Course Instructor	Prof. Rajat Rastogi, IIT Roorkee