TRANSPORTATION ENGINEERING – II

Course Code: 13CE1128  L  T  P  C
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Course Educational Objectives:
To develop
✦ Basic knowledge on design of flexible pavements and rigid pavements.
✦ Procedural Skills on highway construction, maintenance.
✦ Analytical skills of solving economic analysis problems on highway projects.
✦ Basic Knowledge on various components of railway engineering.
✦ Basic Knowledge on various components of airport engineering like runway, taxiway, Apron, control tower etc.
✦ Basic knowledge on docks & harbors.

Course Outcome:
The student will be able to
✦ Solve problems on pavement design by IRC method, AASHTO method for flexible pavements and rigid pavements by IRC method.
✦ Understand the construction and maintenance procedure of highways.
✦ Understand various highway costs and highway user benefits for a project.
✦ Solve problems on economic analysis on highway projects.
✦ Know various components of railway engineering.
✦ Solve problems on turnout design.
✦ Solve problems on runway length correction & its orientation.
✦ Understand various components of docks and harbour.
UNIT-I  (12 Lectures)

PAVEMENT DESIGN–I:

PAVEMENT DESIGN–II:
IRC method of rigid pavement design – Importance of joints in rigid pavements – Types of joints – Use of tie bars and dowel bars.

UNIT-II  (12 Lectures)

HIGHWAY CONSTRUCTION, MAINTENANCE AND DRAINAGE:

UNIT-III  (12 Lectures)

HIGHWAY ECONOMICS & FINANCE:

UNIT-IV  (12 Lectures)

RAILWAY ENGINEERING-I:
Permanent way components – Cross Section of Permanent Way – Functions of various Components like Rails, Sleepers and Ballast – Rail Fastenings – Creep of Rails- Theories related to creep – Adzing of Sleepers- Sleeper density.

RAILWAY ENGINEERING- II:

UNIT-V  (14 Lectures)

AIRPORT ENGINEERING:
Factors affecting selection of site for Airport and Layout Design – Computation of Runway length – Correction for Runway Length –
Orientation of Runway – Wind Rose Diagram – Runway Lighting system – Taxiways, Apron, Control tower terminal building.

DOCKS & HARBOURS:

TEXT BOOKS:

REFERENCES:
6. Indian Road Congress, Ministry of Road Transport and Highways, and Special Publications