

PCCI4302 **TRANSPORTATION ENGINEERING-I** (3-0-0)

Module-I

Modes of transportation, importance of highway transportation, history of road construction. Principle of highway planning, road development plans, highway alignments requirements, engineering surveys for highway location.

Geometric design- Design controls, highway cross section elements, cross slope or camber, road width, road margins, typical cross sections of roads, design speed, sight distance, design of horizontal and vertical alignments, horizontal and vertical curves.

Module-II

Highway Materials:-

Properties of subgrade , sub-base , base course and surface course materials , test on subgrade soil, aggregates and bituminous materials .

Traffic Engineering definition , fundamentals of traffic flow , traffic management, prevention of road accidents , elements of transport planning , highway drainage, pavement failures and maintenance , strengthening.

Module-III

Factors affecting flexible pavement and rigid pavement design. Introduction to IRC method of pavement design. Construction procedure of flexible and rigid pavements. Bridge site selection, economic span of bridge , bridge superstructures , foundations , sub-structures and approaches.

Reference Books:

1. Highway Engineering, by S.K.Khanna and CEG Justo
2. A course in Highway Engineering by Dr. S.P. Bindra
3. Principles and practice of Bridge Engineering by Dr. S.P. Bindra