

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

NAME OF DEPARTMENT/CENTRE/SCHOOL: Civil Engineering

Subject Code: CEC-551

Course Title: Traffic Analysis and Design

L-T-P: 3-0-0

Credits: 3

Subject Area: PCC

Course Outlines: Introduction to Traffic Engineering, road users, vehicle and road characteristics ; Traffic stream parameters, Traffic studies, Capacity Analysis concepts for urban and rural highways, Statistical applications in traffic engineering, Statistical distributions relevant to traffic data analysis, Microscopic traffic flow modelling, Time series analysis, Traffic Management Techniques, Car Following Models, Queueing Theory.

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

NAME OF DEPARTMENT/CENTRE/SCHOOL: Civil Engineering

Subject Code: CEC-553

Course Title: Highway Material Characterization

L-T-P: 3-0-2

Credits: 4

Subject Area: PCC

Course Outlines: Soil; Mineral aggregates; Bitumen and bituminous binders; Bituminous mixes (hot and cold), mix design and performance tests; Cement; Mix design of pavement quality concrete, dry lean concrete, and pervious concrete; Alternate pavement materials.

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

NAME OF DEPARTMENT/CENTRE/SCHOOL: Civil Engineering

Subject Code: CEC-555

Course Title: Pavement Evaluation and Management

L-T-P: 3-0-0

Credits: 3

Subject Area: PCC

Course Outlines: Pavement Evaluation, pavement performance evaluation, pavement functional and structural evaluation, design alternatives, analysis, vehicle damage factor, pavement management system, pavement maintenance management

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

NAME OF DEPARTMENT/CENTRE/SCHOOL: Civil Engineering

Subject Code: CEC-557

Course Title: Geometric Design

L-T-P: 3-0-0

Credits: 3

Subject Area: PCC

Course Outlines: Factors affecting Geometric design; Sight Distances; Cross-sectional elements and layouts; Design of Horizontal and Vertical Alignment; Types of Intersections, layouts, design considerations, auxiliary lanes; Capacity of Roads with different functional classification; Design of facilities – Parking spaces, Bus bays and shelters, Truck lay-byes, BRT Corridors and station/terminals, Toll plazas, Pedestrian Foot Over bridges.

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

NAME OF DEPARTMENT/CENTRE/SCHOOL: Civil Engineering

Subject Code: CEC-559

Course Title: Transportation Planning

L-T-P: 3-0-0

Credits: 3

Subject Area: PCC

Course Outlines: Introduction to fields of transportation, Characteristics and objectives of planning, Transportation data needs, and sources, types of trips, trip generation, trip distribution, mode choice, traffic assignment, planning for sustainable transportation modes