

Course Title: Advanced traffic engineering

Number of Credits: 3

Prerequisite (Corequisite): Structural analysis (I), Concrete Technology Lecturer: -

---

**Course Topic**

- **Concepts of traffic engineer:** travel demand, transport communication and land use, travel rate, transportation system management
- **Traffic system components:** user, vehicle, road
- **Features of traffic course:** volume, speed, density: continuous traffic courses, discontinuous traffic courses
- **Parking studies:** parking features, types of designing parking
- **Pedestrians:** features of the flow of pedestrians, volume relations – speed – density in the movement of pedestrians
- **Capacity analysis:** basis capacity in ideal terms: service level, capacity on two – lane highways, capacity on multi- lane highways, compared to the capacity volume
- **Freeway systems:** freeway components, access control, safety elements, geometric design element, calculation of capacity service transition volume
- **Intersection capacity analysis:** intersection features, speed – volume – density in ideal terms, service level criteria
- Non – urban highways, types and tasks , continuous flow with periodic rupture
- **capacity analysis of non-urban highways:** capacity on multi-lane highways, capacity on two-lane highways
- **principles of installation of light at intersection:** principles of phasing, critical lines, delay at intersections, performance criteria, the effect of left-handed devices, inputs and outputs
- **analysis of signalized intersections:** the concepts of capacity and service level, select a group of lines, 1985 highway capacity guide method, timing of lights
- application and performance of identifiers and other intelligent traffic systems
- queuing theories in traffic
- impact wave theories in traffic and traffic jam ( shock wave)
- types of non-coplanar intersections, function, applications and design
- Traffic simulation soft wares, how to work and use(Synch Row ALMSUN,...)
- Methods of optimizing traffic systems and traffic control(RAMP METERING)

Course Description:

Reading Sources:

Course Goals and objectives:

Evaluation:

Course topics:

The course aims to: