

Department: Civil & Environmental Engineering

Division: Civil engineering

Level and Major: Graduate - Road and Transportation Engineering

Course Title: Advanced geometric design of highway

Number of Credits: 3

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

Course Topic

- Introduction and the position of geometric design in transportation
- Mapping construction and road maintenance
- Road division and control
- Fundamentals of designing based on auto motive design, speed of design and route capacity
- Geometric design criteria based on viewing distance, elevation, horizontal arc, longitudinal slope, gradual change of road width, bridge and tunnel
- **Cross-sectional components include:** determining the width of the road-way, slopes, median, right of way and buildings
- **Features of freeway paths:** highway, the main way, the collecting and spreading ways
- Principles of designing coplanar and non-coplanar intersections based on interlaced route of traffic, interfaces, auxiliary transmission lines to increase or decrease speed
- Project line design criteria in longitudinal profile
- Geometric design of tunnels and technical building
- Familiarity with geometric design softwares (CSDP, Autodesk land)

Course Description:

Reading Sources:

Course Goals and objectives:

Evaluation:

Course topics:

The course aims to: