

Department: Civil & Environmental Engineering

Division: Civil engineering

Level and Major: Graduate - Road and Transportation Engineering

Course Title: Pavement technology and material

Number of Credits: 3

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

Course Topic

- Refinement, application and properties of bitumen, history, types and uses of bitumen, physical experiments of bitumen, bitumen classification system, rheological properties of bitumen, super pave tests on bitumen, bitumen chemistry
- aggregate, aggregate production, aggregate sampling, mineralogy and chemical properties, physical properties
- designing asphalt mixtures, history, asphalt design goals and components, Marshall's method, Wim's method, Puperpave's method
- **properties of asphalt mixtures:** methods of investigating the properties of materials, criteria for testing asphalt mixtures, tests used
- **Equipments and manufacturing:** hot asphalt mixing plants, transport and distribution, compaction, mixture separation, contract and material properties, statistical concepts, quality control/quality guarantee
- **Specific mixtures:** porous asphalt, aggregate asphalt(SMA), hot asphalt, staining asphalts
- **Recycling of asphalt mixtures:** hot and cold recycling, in-place and factory recycling
- **Additives and modifiers in asphalt mixtures:** polymers, rubber, sulfur..

Course Description:

Reading Sources:

Course Goals and objectives:

Evaluation:

Course topics:

The course aims to: