

**MASTER OF SCIENCE IN CIVIL ENGINEERING
STRUCTURES/GEOTECHNICAL/TRANSPORTATION OPTIONS**

I. Core courses required in either specialty program (6 hrs):

- CE 5310 - Numerical Methods in Engineering
- CE 5311 - Advanced Mechanics of Solids

II. Core courses required in geotechnical program (3 hrs):

- CE 5321 - Advanced Soil Engineering

III. Electives in structures, geotechnical and transportation options:

- CE 5313 - Theory of Elastic Stability
- CE 5314 - Theory of Plates and Shells
- CE 5316 - Theory of Elasticity
- CE 5318 - Finite Element Methods in Continuum Mechanics
- CE 5321 - Advanced Soil Engineering I
- CE 5323 - Advanced Foundation Engineering
- CE 5324 - Foundation Structures
- CE 5325 - Soil-Structure Interaction
- CE 5326 - Analysis and Design of Earth Structures
- CE 5327 - Geotechnical Practice for Waste Disposal
- CE 5340 - Advanced Structural Analysis I
- CE 5341 - Advanced Structural Analysis II
- CE 5342 - Advanced Design of Steel Structures
- CE 5343 - Advanced Reinforced Concrete Design
- CE 5346 - Structural Dynamics I
- CE 5347 - Structural Dynamics II
- CE 5348 - Wind Engineering
- CE 5351 - Advanced Pavement Materials
- CE 5352 - Advanced Pavement Design
- CE 5353 - Pavement Management Systems
- CE 5371 - Advanced Geometric Design of Highways
- CE 5372 - Advanced Traffic Engineering I: Highway Capacity Analysis
- CE 5373 - Advanced Traffic Engineering II: Traffic Flow Theory and Control

IV. Research Courses:

- CE 6000 - Master's Thesis
- CE 6330 - Master's Report
- CE 7000 - Research

V. Program Requirements:

Courses Only Option
36 hrs – Course Work

Thesis Option
24 hrs – Course Work
6 hrs – Thesis
30 hrs – Total

Report Option
33 hrs – Course Work
3 hrs – Report
36 hrs – Total