



Course Name:

Site Investigation and Field Monitoring

Course Number: 20-405	Credit: 3
Program: Graduate	Course Type: Technical Selective
Prerequisite: -	Corequisite: -

Course Description (Objectives):

The goal of this course is to understand how to determine the properties and behavior of soils and rocks on-site through field operations, in-situ tests, and instrumentation. Students will learn how to perform and analyze data from field tests and gain a basic understanding of instrumentation in geotechnical projects.

Course Content (outline):

- Chapter 1: The importance of field studies and documenting experiences in geotechnical engineering
- Chapter 2: The origin of soils and rocks and natural processes shaping various landforms
- Chapter 3: Surface feature analysis and the use of aerial photography in geotechnical issues
- Chapter 4: Geophysical studies and application of their results
- Chapter 5: Planning operations and steps for geotechnical field investigations
- Chapter 6: Drilling and sampling technologies for soils and rocks
- Chapter 7: Field tests, their execution, and evaluation of results
- Chapter 8: Measurement of in-situ stresses in soils and rocks
- Chapter 9: Measurement of pore water pressure, permeability, and determination of groundwater table levels
- Chapter 10: Instrumentation
- Chapter 11: Measurement of soil contaminants

References:

- Leggett, R.F., (1962), "Geology and Engineering", McGraw Hill
- Hunt, R. E., (1984), "Geotechnical Engineering Investigation Manual", McGraw Hill
- Hvorslev, M.J., (1949), "Sub-surface Exploration and Sampling of Soils for Civil Engineering Purposes", Waterways Experimental Station, Vicksburg