



Course Number Course Name	ES 336 ENVIRONMENTAL SAMPLING AND INSTRUMENTATION
Credit Value (Breakdown of theory and lab credits)	3 Theory
Catalog Course Description	You will study the fundamental standards of environmental monitoring, such as the application and use of site assessment, monitoring wells, permeability testing, soil vapor extraction and air sparging pilot installations, and employ principles such as obtaining a representative sample; sample containment; design, installation site assessment, monitoring wells, permeability testing, soil vapor extraction and air sparging pilot installations. You will employ principles such as: obtaining a representative sample; sample containment; design, installation, testing and monitoring of wells; design, establish, and collect data from permeability testing, groundwater contour maps, soil vapor extraction, and air sampling systems, and pilot tests.
Student Learning Outcomes/Objectives /Competencies of the Course	<ol style="list-style-type: none"> 1. Understand the methods of assessment of environmental hazards, whether those environments are outdoors, indoors, at work, or at home. 2. Knowledge Standard sampling and analytical techniques have been developed to assess contaminant levels for a variety of media, including water, air, and living systems. 3. Explore new analytical methods and compare to existing methods in quantifying contaminant levels. 4. Introduction to multi-media sampling techniques and analytical methods for evaluation outdoor/indoor air, soil/surfaces, and water.
College-Wide Student Learning Outcomes	<ol style="list-style-type: none"> 1. <i>Critical Thought</i> <i>Critical Thought will be assessed by testing of concepts related to Environmental Sampling and Instrumentation.</i>