

### CVX7241 Geotechnical Design

<b>Level</b>	7
<b>Course Code</b>	CVX7241
<b>Course Title</b>	Geotechnical Design
<b>Credit value</b>	2
<b>Core/Optional</b>	Core (Civil Engineering)
<b>Course Aim/s</b>	To provide the knowledge on the geotechnical design and analysis of slopes, retaining walls, foundations etc. with references made to codes of practices used in the industry.
<b>Course Learning Outcomes (CLO):</b>	<p>At the completion of this course student will be able to:</p> <p>CLO1: Demonstrate full grasp of the different design philosophies, overall design concepts and construction techniques in shallow foundation, deep foundation, retaining structures and slope stability. [Relational]</p> <p>CLO2: Utilize the standard code of practices and design concepts and conduct detailed design calculations for different geotechnical structures. [Relational]</p> <p>CLO3: Recognize the technical uncertainty associated with dealing with geotechnical materials and derive solutions to geotechnical problems which take this uncertainty into account. [Multi-structural]</p> <p>CLO4: Synthesize all the design aspects and apply them to perform some comprehensive examples of design of geotechnical structures by applying quantitative methods / computer software. [Extended Abstract]</p> <p>CLO5: Communicate geotechnical design through detail calculation report using engineering language in context. [Relational]</p> <p>CLO6: Perform effectively in a team work. [Multi-structural]</p>
<b>Content (Main topics, sub topics)</b>	<p><b>Outline Syllabus:</b></p> <p>Session 01: Introduction to geotechnical design codes  Session 02: Ground Investigation and Testing  Session 03: Shallow Foundations I  Session 04: Shallow Foundations II  Session 05: Deep Foundations I  Session 06: Deep Foundations II  Session 07: Slope stability  Session 08: Embankments  Session 09: Retaining Structures I  Session 10 Retaining Structures II</p> <p><b>Design Work:</b></p> <ol style="list-style-type: none"> <li>1. Design of a retaining wall</li> <li>2. Design of a Shallow Foundation</li> <li>3. Design of a Deep Foundation</li> <li>4. Stability analysis of a slope</li> </ol>