**Course Name:** Case Studies in Civil Engineering

<table>
<thead>
<tr>
<th>Course Number:</th>
<th>Credit: 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program:</strong> Undergraduate</td>
<td><strong>Course Type:</strong> Optional</td>
</tr>
<tr>
<td><strong>Prerequisite:</strong> 20221,20231,20413</td>
<td><strong>Corequisite:</strong> -</td>
</tr>
</tbody>
</table>

**Course Description (Objectives):**
Based on the analysis and synthesis of a failure case, such training represents a useful complement to the traditional civil engineering program. The study of engineering failures can offer students valuable insights into associated technical, ethical, and professional issues. Lessons learned from failures have substantially affected civil engineering practice.

**Course Content (outline):**
- Chapter 1: What is Failure?
- Chapter 2: Structural Failures
- Chapter 3: Foundation Failures
- Chapter 4: Embankment, Dam and Slope Failures
- Chapter 5: Bridge Failures
- Chapter 6: Earthquake Failures
- Chapter 7: Environmental & Geoenvironmental Failures
- Chapter 8: Transportation Systems & Water Systems Failures

**References:**