<table>
<thead>
<tr>
<th>Terms</th>
<th>Course Number</th>
<th>Course Name</th>
<th>Introductory</th>
<th>Developing</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>ENVE 100</td>
<td>Environmental and Geological Engineering Concepts</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MATH 116</td>
<td>Calculus I</td>
<td>I</td>
<td>I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CIVE 115</td>
<td>Linear Algebra</td>
<td>I</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHE 102</td>
<td>Chemistry for Engineers</td>
<td>I</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CIVE 104</td>
<td>Mechanics 1</td>
<td>I</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CSE 1</td>
<td>Complementary studies elective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>COOP 1</td>
<td>Engineering Workplace Skills 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1B</td>
<td>WATPD02</td>
<td>Engineering Workplace Skills 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MATH 118</td>
<td>Calculus II</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CIVE 121</td>
<td>Computational Methods</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GEVE 153</td>
<td>Earth Engineering</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td></td>
<td>CIVE 105</td>
<td>Mechanics 2</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td></td>
<td>GENE 123</td>
<td>Electrical Circuits and Instrumentation</td>
<td></td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td></td>
<td>COOP 2</td>
<td>Engineering Workplace Skills 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WrPrp1100</td>
<td>Engineering Workplace Skills 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2A</td>
<td>ENVE 222</td>
<td>Differential Equations</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENVE 224</td>
<td>Probability &amp; Statistics</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EARTH 238</td>
<td>Introductory Structural Geology</td>
<td>I</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENVE 289</td>
<td>Fluid Mechanics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CSE 2</td>
<td>Complementary studies elective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GEVE 298</td>
<td>Seminar</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Terms | Course Number | Course Name
--- | --- | ---
2B | COOP 3 | Introductory
 | WATPDE1 | Engineering Workplace Skills Elective 1
 | CIVE 254 | Fluid Mechanics
 | CIVE 221 | Advanced Calculus
 | EARTH 231 | Mineralogy
 | EARTH 235 | Stratigraphy and Earth History
 | EARTH 260 | Applied Geophysics 1
 | CSE 3 | Complementary studies elective
 | COOP 4 | Introductory
 | GEOE 299 | Seminar
 | WATPDE2 | Engineering Workplace Skills Elective 2
 | CIVE 353 | Geotechnical I
 | EARTH 232 | Petrography
 | EARTH 450 | Physical Hydrogeology
 | EARTH 450L | Physical Hydrogeology Lab
 | CIVE 392 | Economics and Life Cycle Analysis
 | AROR 277* | Timber: Design, Structure and Construction for Engineers
 | CIVE 205* | Solid Mechanics 1
 | CIVE 221* | Geochemistry 1
 | COOP 5 | Introductory
 | WATPDE3 | Engineering Workplace Skills Elective 3

2A | COOP 3 | Developing
 | WATPDE1 | Engineering Workplace Skills Elective 1
 | CIVE 254 | Fluid Mechanics
 | CIVE 221 | Advanced Calculus
 | EARTH 231 | Mineralogy
 | EARTH 235 | Stratigraphy and Earth History
 | EARTH 260 | Applied Geophysics 1
 | CSE 3 | Complementary studies elective
 | COOP 4 | Developing
 | GEOE 299 | Seminar
 | WATPDE2 | Engineering Workplace Skills Elective 2
 | CIVE 353 | Geotechnical I
 | EARTH 232 | Petrography
 | EARTH 450 | Physical Hydrogeology
 | EARTH 450L | Physical Hydrogeology Lab
 | CIVE 392 | Economics and Life Cycle Analysis
 | AROR 277* | Timber: Design, Structure and Construction for Engineers
 | CIVE 205* | Solid Mechanics 1
 | CIVE 221* | Geochemistry 1
 | COOP 5 | Developing
 | WATPDE3 | Engineering Workplace Skills Elective 3

2B | COOP 3 | Advanced
 | WATPDE1 | Engineering Workplace Skills Elective 1
 | CIVE 254 | Fluid Mechanics
 | CIVE 221 | Advanced Calculus
 | EARTH 231 | Mineralogy
 | EARTH 235 | Stratigraphy and Earth History
 | EARTH 260 | Applied Geophysics 1
 | CSE 3 | Complementary studies elective
 | COOP 4 | Advanced
 | GEOE 299 | Seminar
 | WATPDE2 | Engineering Workplace Skills Elective 2
 | CIVE 353 | Geotechnical I
 | EARTH 232 | Petrography
 | EARTH 450 | Physical Hydrogeology
 | EARTH 450L | Physical Hydrogeology Lab
 | CIVE 392 | Economics and Life Cycle Analysis
 | AROR 277* | Timber: Design, Structure and Construction for Engineers
 | CIVE 205* | Solid Mechanics 1
 | CIVE 221* | Geochemistry 1
 | COOP 5 | Advanced
 | WATPDE3 | Engineering Workplace Skills Elective 3

2A | COOP 3 | Introductory
 | WATPDE1 | Engineering Workplace Skills Elective 1
 | CIVE 254 | Fluid Mechanics
 | CIVE 221 | Advanced Calculus
 | EARTH 231 | Mineralogy
 | EARTH 235 | Stratigraphy and Earth History
 | EARTH 260 | Applied Geophysics 1
 | CSE 3 | Complementary studies elective
 | COOP 4 | Introductory
 | GEOE 299 | Seminar
 | WATPDE2 | Engineering Workplace Skills Elective 2
 | CIVE 353 | Geotechnical I
 | EARTH 232 | Petrography
 | EARTH 450 | Physical Hydrogeology
 | EARTH 450L | Physical Hydrogeology Lab
 | CIVE 392 | Economics and Life Cycle Analysis
 | AROR 277* | Timber: Design, Structure and Construction for Engineers
 | CIVE 205* | Solid Mechanics 1
 | CIVE 221* | Geochemistry 1
 | COOP 5 | Introductory
 | WATPDE3 | Engineering Workplace Skills Elective 3

2B | COOP 3 | Developing
 | WATPDE1 | Engineering Workplace Skills Elective 1
 | CIVE 254 | Fluid Mechanics
 | CIVE 221 | Advanced Calculus
 | EARTH 231 | Mineralogy
 | EARTH 235 | Stratigraphy and Earth History
 | EARTH 260 | Applied Geophysics 1
 | CSE 3 | Complementary studies elective
 | COOP 4 | Developing
 | GEOE 299 | Seminar
 | WATPDE2 | Engineering Workplace Skills Elective 2
 | CIVE 353 | Geotechnical I
 | EARTH 232 | Petrography
 | EARTH 450 | Physical Hydrogeology
 | EARTH 450L | Physical Hydrogeology Lab
 | CIVE 392 | Economics and Life Cycle Analysis
 | AROR 277* | Timber: Design, Structure and Construction for Engineers
 | CIVE 205* | Solid Mechanics 1
 | CIVE 221* | Geochemistry 1
 | COOP 5 | Developing
 | WATPDE3 | Engineering Workplace Skills Elective 3

2A | COOP 3 | Advanced
 | WATPDE1 | Engineering Workplace Skills Elective 1
 | CIVE 254 | Fluid Mechanics
 | CIVE 221 | Advanced Calculus
 | EARTH 231 | Mineralogy
 | EARTH 235 | Stratigraphy and Earth History
 | EARTH 260 | Applied Geophysics 1
 | CSE 3 | Complementary studies elective
 | COOP 4 | Advanced
 | GEOE 299 | Seminar
 | WATPDE2 | Engineering Workplace Skills Elective 2
 | CIVE 353 | Geotechnical I
 | EARTH 232 | Petrography
 | EARTH 450 | Physical Hydrogeology
 | EARTH 450L | Physical Hydrogeology Lab
 | CIVE 392 | Economics and Life Cycle Analysis
 | AROR 277* | Timber: Design, Structure and Construction for Engineers
 | CIVE 205* | Solid Mechanics 1
 | CIVE 221* | Geochemistry 1
 | COOP 5 | Advanced
 | WATPDE3 | Engineering Workplace Skills Elective 3

2B | COOP 3 | Introductory
 | WATPDE1 | Engineering Workplace Skills Elective 1
 | CIVE 254 | Fluid Mechanics
 | CIVE 221 | Advanced Calculus
 | EARTH 231 | Mineralogy
 | EARTH 235 | Stratigraphy and Earth History
 | EARTH 260 | Applied Geophysics 1
 | CSE 3 | Complementary studies elective
 | COOP 4 | Introductory
 | GEOE 299 | Seminar
 | WATPDE2 | Engineering Workplace Skills Elective 2
 | CIVE 353 | Geotechnical I
 | EARTH 232 | Petrography
 | EARTH 450 | Physical Hydrogeology
 | EARTH 450L | Physical Hydrogeology Lab
 | CIVE 392 | Economics and Life Cycle Analysis
 | AROR 277* | Timber: Design, Structure and Construction for Engineers
 | CIVE 205* | Solid Mechanics 1
 | CIVE 221* | Geochemistry 1
 | COOP 5 | Introductory
 | WATPDE3 | Engineering Workplace Skills Elective 3

2A | COOP 3 | Developing
 | WATPDE1 | Engineering Workplace Skills Elective 1
 | CIVE 254 | Fluid Mechanics
 | CIVE 221 | Advanced Calculus
 | EARTH 231 | Mineralogy
 | EARTH 235 | Stratigraphy and Earth History
 | EARTH 260 | Applied Geophysics 1
 | CSE 3 | Complementary studies elective
 | COOP 4 | Developing
 | GEOE 299 | Seminar
 | WATPDE2 | Engineering Workplace Skills Elective 2
 | CIVE 353 | Geotechnical I
 | EARTH 232 | Petrography
 | EARTH 450 | Physical Hydrogeology
 | EARTH 450L | Physical Hydrogeology Lab
 | CIVE 392 | Economics and Life Cycle Analysis
 | AROR 277* | Timber: Design, Structure and Construction for Engineers
 | CIVE 205* | Solid Mechanics 1
 | CIVE 221* | Geochemistry 1
 | COOP 5 | Developing
 | WATPDE3 | Engineering Workplace Skills Elective 3

2B | COOP 3 | Advanced
 | WATPDE1 | Engineering Workplace Skills Elective 1
 | CIVE 254 | Fluid Mechanics
 | CIVE 221 | Advanced Calculus
 | EARTH 231 | Mineralogy
 | EARTH 235 | Stratigraphy and Earth History
 | EARTH 260 | Applied Geophysics 1
 | CSE 3 | Complementary studies elective
 | COOP 4 | Advanced
 | GEOE 299 | Seminar
 | WATPDE2 | Engineering Workplace Skills Elective 2
 | CIVE 353 | Geotechnical I
 | EARTH 232 | Petrography
 | EARTH 450 | Physical Hydrogeology
 | EARTH 450L | Physical Hydrogeology Lab
 | CIVE 392 | Economics and Life Cycle Analysis
 | AROR 277* | Timber: Design, Structure and Construction for Engineers
 | CIVE 205* | Solid Mechanics 1
 | CIVE 221* | Geochemistry 1
 | COOP 5 | Advanced
 | WATPDE3 | Engineering Workplace Skills Elective 3
<table>
<thead>
<tr>
<th>Terms</th>
<th>Course Number</th>
<th>Course Name</th>
<th>Introductory</th>
<th>Developing</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>3B</td>
<td>CVE 382</td>
<td>Hydrology and Open Channel Flow</td>
<td></td>
<td></td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>EARTH 333</td>
<td>Introductory Sedimentology</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EARTH 390</td>
<td>Methods in Geological Mapping</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EARTH 437</td>
<td>Rock Mechanics</td>
<td>A</td>
<td>D</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>EARTH 438</td>
<td>Engineering Geology</td>
<td>A</td>
<td>D</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>CSE 4</td>
<td>Complementary studies elective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GEOE 399</td>
<td>Seminar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TE 1</td>
<td>Technical Elective 1</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>TE 2</td>
<td>Technical Elective 2</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>TE 3</td>
<td>Technical Elective 3</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>WKSIP 3050</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GEOE 400</td>
<td>Geological Engineering Design Project 1</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>CVE 354</td>
<td>Geotechnical Engineering 2</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>GEOE 498</td>
<td>Seminar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TE 4</td>
<td>Technical Elective 1</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>TE 5</td>
<td>Technical Elective 2</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>WKSIP 3050</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4A</td>
<td>GEOE 401</td>
<td>Design Project 2</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>CVE 594</td>
<td>Geotechnical 3</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>GEOE 499</td>
<td>Seminar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TE 4</td>
<td>Technical Elective 1</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>TE 5</td>
<td>Technical Elective 2</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>WKSIP 3050</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Knowledge Base**
  - 1a. Demonstrate understanding of concepts in mathematics
  - 1b. Demonstrate understanding of concepts in natural science
  - 1c. Demonstrate understanding of engineering fundamentals
  - 1d. Demonstrate understanding of specialized engineering knowledge

- **Problem Analysis**
  - 2a. Formulate a problem statement
  - 2b. Develop models to solve engineering problems involving identifying

- **Investigation**
  - 3a. Define design requirements and specifications for complex, open-ended engineering problems
  - 3b. Critically evaluate and compare design choices
  - 3c. Generate and refine potential solutions to complex, open-ended engineering problems

- **Design**
  - 4a. Define design requirements and specifications for complex, open-ended engineering problems
  - 4b. Critically evaluate and compare design choices
  - 4c. Generate and refine potential solutions to complex, open-ended engineering problems

- **Use of Engineering Tools**
  - 5a. Select appropriate engineering tools, considering their limitations
  - 5b. Modify and/or create appropriate engineering tools, identifying
  - 5c. Use engineering tools appropriately

- **Individual and Team Work**
  - 6a. Contribute as an active team member or leader to complete
  - 6b. Collaborate with others to complete tasks effectively as a team

- **Communication Skills**
  - 7a. Orally present information within the profession and to society at
  - 7b. Communicate in a written format within the profession and to
  - 7c. Interpret information, including instructions

- **Professionalism**
  - 8a. Articulate the roles and responsibilities of the professional engineer
  - 8b. Describe the importance of codes, standards, best practices laws
  - 8c. Identify ethical and unethical behavior in professional situations

- **Impact of Engineering**
  - 9a. Identify ethical and unethical behavior in professional situations
  - 9b. Explain the social, health, safety and environmental aspects of an

- **Ethics & Equity**
  - 10a. Identify ethical and unethical behavior in professional situations
  - 10b. Describe the importance of codes, standards, best practices laws
  - 10c. Identify equitable and inequitable situations or behaviors

- **Economics & Project Management**
  - 11a. Apply project management techniques in engineering projects, with attention to risk and change.
  - 11b. Perform economic analyses of engineering projects with attention to uncertainty and limitations.

- **Life-long Learning**
  - 12a. Identify gaps in their knowledge, skills and abilities
  - 12b. Obtain and evaluate information or training from appropriate
  - 12c. Reflect on the use of information received