## CEE Track: Geological Engineering
(ABET Accredited)
Class of 2015

### BSE Math & Science Requirements (8 Courses)
- CHM 201 General Chemistry I
- MAT 103 Calculus
- MAT 104 Calculus
- MAT 201 Multivariable Calculus,
  - or MAT 203 Adv. Multivariable Calculus
- MAT 202 Linear Algebra w/ Applications,
  - or MAT 204 Adv. Linear Algebra w/ Applications
- PHY 103 General Physics, or PHY 105 Adv. Physics
- PHY 104 General Physics, or PHY 106 Adv. Physics
- COS 126 General Computer Science

### University Writing Seminar (1 Course)
- Writing Seminar

### Engineering Science Requirements (8 Courses)
- CEE 205 Mechanics of Solids
- CEE 303 Intro. to Environmental Engineering –Note (d)
- CEE 305 (GEO 375) Environmental Fluid Mechanics
  - or CEE 311 (GEO 311) Global Air Pollution
- CEE 306 Hydrology
  - or CEE 307 Field Ecohdrology –Note (c)
- CEE 308 Environmental Eng. Laboratory –Note (b)
  - or GEO 300 Summer Course in Geologic Field Methods
- CEE 361 Structural Analysis and Intro. to Finite Elements
- CEE 365 Soil Mechanics (lab) –Note (a)
  - or GEO 370 (GEO 370) Sedimentology (field course)

One course selected from the following list:
- CEE 360 (GEO 361) - Physics of the Ocean and Atmosphere
- GEO 363 Environmental Geochemistry
- GEO 366 Current and Future Climate
- CEE 417 (GEO 417) - Environmental Microbiology
- GEO 418 Environmental Aqueous Geochemistry
- CEE 424 (GEO 424) - Seismology
- GEO 430 Climate and The Terrestrial Biosphere
- GEO 441 Computational Geophysics
- GEO 470 Environmental Chemistry of Soils
- GEO 499 Environmental Change, Poverty and Conflict

### Additional Math Requirements (2 courses)
- ORF 245 Fundamentals of Eng. Statistics, or ORF 309
  - Probability and Stochastic Systems, or a suitable substitute course.
  - This requirement may be waived for students who scored 5 on AP STAT.
- MAE 305 Mathematics in Engineering I

### Additional Science Requirements (1 course)
- GEO 203 Geology, or EEB 211 Biology of Organisms, or
  - MOL 215 Quantitative Principles in Cell and Molecular Biology
  - This requirement may be waived for students who scored 5 on AP BIO.

### Engineering Design Requirements (2 Courses)
- CEE 471 Intro to Water Pollution Technology
- CEE 477 Eng. Design for Sustainable Development

### Independent Work (2 Courses)
- CEE 478 Senior Thesis (Counts as two courses)

### Program Electives (3 or more) – See list.
1. (engineering) ______ 2. (engineering) ______ 3. ______ 4. ______
5. ______ 6. ______ 7. ______ 8. ______

### Humanities Electives (7 or more)
1. ______ 2. ______ 3. ______ 4. ______ 5. ______ 6. ______ 7. ______ 8. ______

### Freshman Year (2011-2012)

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<tr>
<th>Fall</th>
<th>Spring</th>
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<tr>
<td>1. MAT 104</td>
<td>1. MAT 201</td>
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<td>2. PHY 103</td>
<td>1. MAT 201</td>
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<tr>
<td>3. CHM 201 or 207</td>
<td>2. PHY 104</td>
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<td>4. Writing Seminar</td>
<td>3. COS 126</td>
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### Sophomore Year (2012-2013)

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<th>Fall</th>
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<tr>
<td>1. MAT 202</td>
<td>1. CEE 303 (d)</td>
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<tr>
<td>2. CEE 205</td>
<td>2. MAE 222</td>
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<tr>
<td>3. ORF 245</td>
<td>3. MAE 305</td>
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<td>4. ______</td>
<td>4. CEE 365 (a)</td>
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### Junior Year (2013-2014)

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<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>1. CEE 305</td>
<td>1. CEE 306 or 307 (c)</td>
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<tr>
<td>2. CEE 361</td>
<td>2. CEE 308 (b)</td>
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<td>3. GEO 203</td>
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### Senior Year (2014-2015)

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<tr>
<th>Fall</th>
<th>Spring</th>
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<tr>
<td>1. (CEE 478)</td>
<td>1. CEE 478</td>
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<tr>
<td>2. CEE 471</td>
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<td>3. CEE 477</td>
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Notes: (a) CEE 364 and CEE 365 are offered in alternating years. This calendar shows a good option for the class of 2015. (b) CEE 308 is offered every other year; students in the class of 2015 may take it in spring of their junior year. (c) For students who take CEE 307 in Kenya, this counts as an engineering lab course. This satisfies the requirement for one of the two engineering lab courses (two of the following: CEE 308, CEE 364 or CEE 365). In consultation with the advisor, a student can substitute another engineering course to count as the remaining engineering science requirement. (d) In the spring of 2013, CEE 303 will not be offered. Instead students should take CEE 304.

Approved and Recommended Program Electives
A student’s program electives must provide a coherent sequence in the student’s area of interest. For the geological engineering track, at least two of the program electives must be an engineering course. No more than one program elective can be at the 200 level. The courses listed below are pre-approved. If a student would like to take a program elective not on the list, such as a one-time-only course or a graduate course, the student should make a compelling case for why this is consistent with the student’s educational objectives. Approval is based on agreement from the advisor and the departmental representative. The bullet (●) indicates courses that are highly recommended for this program track.

Civil and Environmental Engineering
Courses in the CEE department that are not part of the current requirements. In particular, the following are recommended for the environmental engineering track:
- CEE 311 Global Air Pollution
- CEE 474 Design and Construction of Environmental Sensors (not a permanent course)

Other Engineering and Science Departments
Courses in mechanical engineering, chemical engineering, applied math (APC and ORF), geology, biology (EEB), chemistry.