## 2018-19 MAJOR COURSE PLAN

**CIVIL ENGINEERING**

### FALr SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRIT 150</td>
<td>4</td>
</tr>
<tr>
<td>MATH 125 (GE F)</td>
<td>4</td>
</tr>
<tr>
<td>CE 106L</td>
<td>2</td>
</tr>
<tr>
<td>ENGR 102</td>
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### SPRING SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 105aL (GE E)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 126 or MATH 129</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 151L (GE E)</td>
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</tr>
<tr>
<td>CE 108</td>
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### SECOND YEAR

### FALL SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GEOL 305L</td>
<td>4</td>
</tr>
<tr>
<td>GE C</td>
<td>4</td>
</tr>
<tr>
<td>MATH 226 or MATH 229</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 152L</td>
<td>4</td>
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<tr>
<td>CE 205</td>
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### SPRING SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>GE D</td>
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<tr>
<td>MATH 245</td>
<td>4</td>
</tr>
<tr>
<td>MATH 226 or MATH 229</td>
<td>4</td>
</tr>
<tr>
<td>CE 225</td>
<td>3</td>
</tr>
<tr>
<td>CE 235</td>
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### THIRD YEAR

### FALL SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CE 309</td>
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</tr>
<tr>
<td>GE 334L</td>
<td>3</td>
</tr>
<tr>
<td>CE 358</td>
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<td>ISE 460</td>
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### SPRING SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>GE B</td>
<td>4</td>
</tr>
<tr>
<td>DESIGN KERNEL</td>
<td>3</td>
</tr>
<tr>
<td>EE 202L or EE 326Lx</td>
<td>3</td>
</tr>
<tr>
<td>CE 451</td>
<td>3</td>
</tr>
<tr>
<td>CE 467L</td>
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### FOURTH YEAR

### FALL SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CE ELECTIVE</td>
<td>3</td>
</tr>
<tr>
<td>DESIGN KERNEL</td>
<td>3</td>
</tr>
<tr>
<td>CE 408</td>
<td>3</td>
</tr>
<tr>
<td>CE 453</td>
<td>3</td>
</tr>
<tr>
<td>CE 471</td>
<td>3</td>
</tr>
<tr>
<td>CE ELECTIVE</td>
<td>3</td>
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### SPRING SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRIT 340</td>
<td>3</td>
</tr>
<tr>
<td>GE C</td>
<td>3</td>
</tr>
<tr>
<td>CE 402</td>
<td>3</td>
</tr>
<tr>
<td>CE 465 or CE 480</td>
<td>3</td>
</tr>
<tr>
<td>CE ELECTIVE</td>
<td>3</td>
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</tbody>
</table>

### MATHEMATICS (16 UNITS)

- MATH 125: Calculus I
- MATH 126 or MATH 129: Calculus II
- MATH 226 or MATH 229: Calculus III
- MATH 245: Mathematics of Phys. and Engr.

### PHYSICS (8 UNITS)

- PHYS 151L: Mechanics and Thermodynamics
- PHYS 152L: Electricity and Magnetism

### OTHER SCIENCE (8 UNITS)

- CHEM 105AL: General Chemistry
- GEOL 305L: Intro. to Engineering Geology

### GENERAL EDUCATION (32 UNITS)

- GE A: The Arts (1 Course)
- GE B: Humanistic Inquiry (2 Courses)
- GE C: Social Analysis (2 Courses)
- GE D: Life Sciences (1 Course)
- GE E: Physical Sciences (1 Course)
- GE F: Quantitative Reasoning (1 Course)
- GE G,H: Global Perspectives (2 Courses)*
- GESM: General Education Seminar (1 Course)*

### WRITING (7 UNITS)

- WRIT 150: Writing and Critical Reasoning
- WRIT 340: Advanced Writing

### ENGINEERING (70 UNITS)

- CE 106L: Design & Planning of CE Systems
- CE 108: Intro. to CE Computer Methods
- CE 205: Statics
- CE 207L: Intro. to Design of Structural Systems
- CE 225: Mechanics of Deformable Bodies
- CE 235: Dynamics
- CE 309: Fluid Mechanics
- CE 334L: Mechanical Behavior of Materials
- CE 358: Theory of Structures I
- CE 402: Computer Methods in Civil Engr.
- CE 408: Risk Analysis in Civil Engr.
- CE 451: Water Resources Engineering
- CE 453: Water Quality Control
- CE 456: Design of Steel Structures
- CE 467L: Geotechnical Engineering
- CE 471: Principles of Transportation Engr.
- CE 480: Structural Systems Design
- CE 485: Water Supply & Sewage System Design
- EE 202L: Linear Circuits
- EE 326LX: Essentials of Electrical Engr
- ENGR 102: Engineering Freshman Academy
- ISE 460: Engineering Economy
- DESIGN KERNELS
- CE ELECTIVES

### SPECIAL NOTES

Courses with this symbol may be satisfied with AP, IB or A-Level exams. See page 22 for more information.

GE: Engineering students are encouraged to satisfy GE G and GE H with a course that also satisfies a Core Literacy. GE H may be satisfied by exam. Additionally, your GESM course should be taken in categories A, B, C, or D only. See page 21 for more information and consult your advisor for detailed assistance.

OPTIONAL ELECTIVES: Consult with your academic advisor to explore optional elective courses. These courses are not required.

CE 205, 225, 309, and 235: Minimum grade of “C” is required.

EE 326LX: CE students are encouraged to take EE 326Lx in the spring term.

DESIGN KERNELS: Choose six units from CE 457, 465, 466, 476, 478, 482, 484, or 485. If CE 480 is chosen as senior capstone course, 1 Design Kernel course must be CE 482. If CE 465 is chosen as senior capstone course, 1 Design Kernel course must be either CE 466 or 476.

CE ELECTIVES: Choose six units of upper-division CE course that is not already required.
### CIVIL TRACK: CONSTRUCTION

#### FIRST YEAR

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>COURSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>FALL SEMESTER</td>
<td>GE A: WRIT 150 (4), MATH 125 (GE F): 4, ENGR 102: 2</td>
</tr>
<tr>
<td>SPRING SEMESTER</td>
<td>GE B: CHEM 105aL (GE E): 4, MATH 126 or MATH 129: 4, PHYS 151L (GE E): 4, CE 106L: 3, ENGR 102: 2</td>
</tr>
</tbody>
</table>

#### SECOND YEAR

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>COURSES</th>
</tr>
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<tbody>
<tr>
<td>FALL SEMESTER</td>
<td>CE C: CHEM 106L: 3, MATH 226 or MATH 229: 4, PHYS 152L: 4, CE 205: 2</td>
</tr>
<tr>
<td>SPRING SEMESTER</td>
<td>GE D: CE 207L: 2, MATH 245: 4, CE 225: 3, CE 235: 3, OPTIONAL ELECTIVE: 3</td>
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#### THIRD YEAR

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>COURSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>FALL SEMESTER</td>
<td>CE 309: CHEM 105AL: 3, PHYS 152L: 3, ISE 460: 3, OPTIONAL ELECTIVE: 3</td>
</tr>
<tr>
<td>SPRING SEMESTER</td>
<td>GE E: DESIGN KERNEL: 3, EE 202L or EE 326LX: 3, CE 451: 3, CE 467L: 3, OPTIONAL ELECTIVE: 3</td>
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</table>

#### FOURTH YEAR

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>COURSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>FALL SEMESTER</td>
<td>GE F: WRIT 340: 3, CE 482: 3, CE 408: 3, ISE 460: 3, CE 480: 3, OPTIONAL ELECTIVE: 3</td>
</tr>
<tr>
<td>SPRING SEMESTER</td>
<td>WRIT 340: 3, CE ELECTIVE: 3, CE 402: 3, CE ELECTIVE: 3, CE ELECTIVE: 3, OPTIONAL ELECTIVE: 3, OPTIONAL ELECTIVE: 3</td>
</tr>
</tbody>
</table>

### MATHEMATICS (16 UNITS)
- MATH 125: Calculus I
- MATH 126 or MATH 129: Calculus II
- MATH 226 or MATH 229: Calculus III
- MATH 245: Mathematics of Phys. and Engr.

### PHYSICS (8 UNITS)
- PHYS 151L: Mechanics and Thermodynamics
- PHYS 152L: Electricity and Magnetism

### OTHER SCIENCE (8 UNITS)
- CHEM 105AL: General Chemistry
- GEOL 305L: Intro. to Engineering Geology

### GENERAL EDUCATION (32 UNITS)
- GE A: The Arts (1 Course)
- GE B: Humanistic Inquiry (2 Courses)
- GE C: Social Analysis (2 Courses)
- GE D: Life Sciences (1 Course)
- GE E: Physical Sciences (1 Course)
- GE Q: Quantitative Reasoning (1 Course)
- GE G, H: Global Perspectives (2 Courses)*
- GESM: General Education Seminar (1 Course)*

### WRITING (7 UNITS)
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### ENGINEERING (70 UNITS)
- CE 106L: Design & Planning of CE Systems
- CE 108: Intro. to CE Computer Methods
- CE 205: Statics
- CE 207L: Intro. to Design of Structural Systems
- CE 225: Mechanics of Deformable Bodies
- CE 309: Fluid Mechanics
- CE 325: Mechanics of Deformable Bodies
- CE 408: Risk Analysis in Civil Engr.
- CE 456: Design of Steel Structures
- CE 460: Construction Engineering
- CE 467L: Geotechnical Engineering
- CE 471: Principles of Transportation Engr.
- CE 480: Structural Systems Design
- CE 482: Foundation Design
- EE 202L: Linear Circuits
- ENGR 102: Engineering Freshman Academy
- ISE 460: Engineering Economy
- DESIGN KERNEL: Choose one from CE 457, 465, 466, 476, 478, 484, or 485.

### *SPECIAL NOTES*
- Courses with this symbol may be satisfied with AP, IB or A-Level exams. See page 22 for more information.
- GE: Engineering students are encouraged to satisfy GE G and GE H with a course that also satisfies a Core Literacy. GE H may be satisfied by exam. Additionally, your GESM course should be taken in categories A, B, C, or D only. See page 21 for more information and consult your advisor for detailed assistance.
- OPTIONAL ELECTIVES: Consult with your academic advisor to explore optional elective courses. These courses are not required.
- CE 205, 225, 309, AND 235: Minimum grade of “C” is required.
- EE 326LX: CE students are encouraged to take EE 326Lx in the spring.
- DESIGN KERNEL: Choose one from CE 457, 465, 466, 476, 478, 484, or 485.
- CE ELECTIVE: One course must be. CE 462, CE 469, CE 470, or ARCH 419. The other course can be any upper-division CE course that is not already required.
## CIVIL TRACK: WATER RESOURCES

### 2018-19 MAJOR COURSE PLAN

#### CIVIL TRACK: WATER RESOURCES

### First Year

#### Fall Semester

- **GE A**
- **WRIT 150**
- **MATH 125 (GE F)**
- **CE 106L**
- **ENGR 102**

#### Spring Semester

- **CHEM 105aL (GE E)**
- **MATH 126 or MATH 129**
- **PHYS 151L (GE E)**
- **CE 108**

### Second Year

#### Fall Semester

- **MATH 226 or MATH 229**
- **PHYS 152L**
- **CE 205**

#### Spring Semester

- **GEOL 305L**
- **CE 207L**
- **MATH 245**
- **CE 225**

### Third Year

#### Fall Semester

- **CE 309**
- **CE 334L**
- **CE 358**
- **CE 456**
- **ISE 460**

#### Spring Semester

- **DESIGN KERNEL**
- **EE 202L or EE 326Lx**
- **CE 467L**

### Fourth Year

#### Fall Semester

- **CE ELECTIVE**
- **DESIGN KERNEL**
- **CE 408**

#### Spring Semester

- **WRIT 340**
- **GE C**
- **CE ELECTIVE**

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### Mathematics (16 Units)

- **MATH 125**: Calculus I
- **MATH 126 or MATH 129**: Calculus II
- **MATH 226 or MATH 229**: Calculus III
- **MATH 245**: Mathematics of Phys. and Engr.

### Physics (8 Units)

- **PHYS 151L**: Mechanics and Thermodynamics
- **PHYS 152L**: Electricity and Magnetism

### Other Science (8 Units)

- **CHEM 105AL**: General Chemistry
- **GEOL 305L**: Intro. to Engineering Geology

### General Education (32 Units)

- **GE A**: The Arts (1 Course)
- **GE B**: Humanistic Inquiry (2 Courses)
- **GE C**: Social Analysis (2 Courses)
- **GE D**: Life Sciences (1 Course)
- **GE E**: Physical Sciences (1 Course)
- **GE F**: Quantitative Reasoning (1 Course)
- **GE G,H**: Global Perspectives (2 Courses)*
- **GESM**: General Education Seminar (1 Course)*

### Writing (7 Units)

- **WRIT 150**: Writing and Critical Reasoning
- **WRIT 340**: Advanced Writing

### Engineering (70 Units)

- **CE 106L**: Design & Planning of CE Systems
- **CE 108**: Intro. to CE Computer Methods
- **CE 205**: Statics
- **CE 207L**: Intro. to Design of Structural Systems
- **CE 225**: Mechanics of Deformable Bodies
- **CE 309**: Fluid Mechanics
- **CE 235**: Dynamics
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- **CE 408**: Risk Analysis in Civil Engr.
- **CE 451**: Water Resources Engineering
- **CE 453**: Water Quality Control
- **CE 456**: Design of Steel Structures
- **CE 467L**: Geotechnical Engineering
- **CE 471**: Principles of Transportation Engr.
- **CE 465**: Water Supply & Sewage System Design
- **EE 326LX**: Essentials of Electrical Engr.

### Special Notes

- Courses with this symbol may be satisfied with AP, IB or A-Level exams. See page 22 for more information.

- GE: Engineering students are encouraged to satisfy GE G and GE H with a course that also satisfies a Core Literacy. GE H may be satisfied by exam. Additionally, your GESM course should be taken in categories A, B, C, or D only. See page 21 for more information and consult your advisor for detailed assistance.

- **OPTIONAL ELECTIVES**: Consult with your academic advisor to explore optional elective courses. These courses are not required.

- **CE 205, 225, 309, AND 235**: Minimum grade of “C” is required.

- **EE 326LX**: CE students are encouraged to take EE 326Lx in the spring.

- **DESIGN KERNELS**: One must be CE 466 or 476. The other course can be CE 457, 465, 466, 476, 478, 482, 484, or 485.

- **CE ELECTIVES**: Take six units from CE 466, 476, 477, or 490.