Civil and Environmental Engineering, PhD

Academic Plans

Sample Plans of Study
Sample plans represent one way to complete a program of study. Actual course selection and sequence will vary and should be discussed with an academic advisor. For additional sample plans, see MyUI.

Civil and Environmental Engineering, PhD

• Environmental Engineering Subprogram [p. 1]
• Environmental Science Subprogram [p. 2]
• Hydraulics Subprogram [p. 3]
• Structures, Mechanics and Materials Subprogram [p. 4]
• Sustainable Water Development Subprogram [p. 5]
• Transportation Subprogram [p. 6]
• Water Resources Subprogram [p. 7]

Environmental Engineering Subprogram

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
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<td>Water, Energy, and Food Nexus Seminar</td>
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Second Year

Any Semester

Comprehensive Exam

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Fall

CEE Elective course
CEE Elective course
CEE Elective course
CEE:5097 Coaching Seminar on Communicating Water Science h
CEE:5096 Water, Energy, and Food Nexus Seminar d
CEE:7999 Research: Civil and Environmental Engineering PhD Dissertation i

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Spring

CEE:6225 Communicating Science j
CEE Elective course
CEE Elective course
CEE:5097 Coaching Seminar on Communicating Water Science h
CEE:5096 Water, Energy, and Food Nexus Seminar d
CEE:7999 Research: Civil and Environmental Engineering PhD Dissertation i

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<td></td>
<td><strong>Hours</strong></td>
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Third Year

Fall

CEE Elective course
CEE:5097 Coaching Seminar on Communicating Water Science h
CEE:5096 Water, Energy, and Food Nexus Seminar d
CEE:7999 Research: Civil and Environmental Engineering PhD Dissertation i

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Spring

CEE Elective course
CEE:5097 Coaching Seminar on Communicating Water Science h
CEE:5096 Water, Energy, and Food Nexus Seminar d
CEE:7999 Research: Civil and Environmental Engineering PhD Dissertation i

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<td></td>
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Fourth Year

Fall

CEE:5096 Water, Energy, and Food Nexus Seminar d
CEE:7999 Research: Civil and Environmental Engineering PhD Dissertation i

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<tr>
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Spring

Final Exam k

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<tr>
<td></td>
<td><strong>Hours</strong></td>
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</tbody>
</table>

Additional information is included in the General Catalog and on department website.

a
b
f
j

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b Typically completed by the end of the first year. Refer to the CEE website and the Gradual College Manual of Rules and Regulations for details.
c Must be completed during first semester.
d Required every semester.
e Work with academic advisor to determine graduate elective coursework and sequence. See General Catalog and CEE website for specifics.
f Typically this course is offered in spring semesters only. Check MyUI for course availability since offerings are subject to change.
g Oral exam typically completed by the end of the second year after passing the Qualifying Exam; written dissertation prospectus must be submitted to the committee two weeks before exam.
h Enrollment during four semesters is required.
i Total of 29 s.h. from CEE:7999 is required. May take up to 6 s.h. for a letter grade; all other credits must be taken on S/U basis.
j Technical communication requirement; approved courses include RHET:7500, RHET:7930, RHET:7940. Other courses may be considered and should be submitted to the CEE Director of Graduate Studies for approval.
k Oral dissertation defense.

Environmental Science Subprogram

Course Title Hours

Academic Career Any Semester
72 s.h. of graduate level coursework must be completed; up to 24 s.h. of graduate transfer credits allowed upon approval. More information is included in the General Catalog and on department website.

First Year Any Semester Qualifying Exam

Fall
CEE:5440 Foundations of Environmental Chemistry and Microbiology 3
CEE:5380 Fluid Flows in Environmental Systems 3
CEE:5410 Politics and Economics of the Food, Energy, Water Nexus 3
ENGR:7270 Engineering Ethics 1
CEE:5096 Water, Energy, and Food Nexus Seminar 0

Spring
CEE Elective course 3
CEE Elective course 3

Second Year Any Semester
Comprehensive Exam

Fall
CEE Elective course 3
CEE Elective course 3
CEE Elective course 3
CEE:5097 Coaching Seminar on Communicating Water Science 0
CEE:5096 Water, Energy, and Food Nexus Seminar 0
CEE:7999 Research: Civil and Environmental Engineering PhD Dissertation 6

Spring
CEE:6225 Communicating Science 3
CEE Elective course 3
CEE Elective course 3
CEE:5097 Coaching Seminar on Communicating Water Science 0
CEE:5096 Water, Energy, and Food Nexus Seminar 0
CEE:7999 Research: Civil and Environmental Engineering PhD Dissertation 6

Third Year Fall
CEE Elective course 3
CEE:5097 Coaching Seminar on Communicating Water Science 0
CEE:5096 Water, Energy, and Food Nexus Seminar 0
CEE:7999 Research: Civil and Environmental Engineering PhD Dissertation 9

Spring
CEE Elective course 3
CEE:5097 Coaching Seminar on Communicating Water Science 0
CEE:5096 Water, Energy, and Food Nexus Seminar 0
CEE:7999 Research: Civil and Environmental Engineering PhD Dissertation 6

Fourth Year Fall
CEE:5096 Water, Energy, and Food Nexus Seminar 0
CEE:7999 Research: Civil and Environmental Engineering PhD Dissertation 2
### Hydraulics Subprogram

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<td>Academic Career</td>
<td>Any Semester</td>
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</tr>
<tr>
<td>First Year</td>
<td>Qualifying Exam</td>
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</tr>
<tr>
<td>Fall</td>
<td>CEE:5440</td>
<td>Foundations of Environmental Chemistry and Microbiology</td>
</tr>
<tr>
<td></td>
<td>CEE:5380</td>
<td>Fluid Flows in Environmental Systems</td>
</tr>
<tr>
<td></td>
<td>CEE:5410</td>
<td>Politics and Economics of the Food, Energy, Water Nexus</td>
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<tr>
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<td>ENGR:7270</td>
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</tr>
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<td>CEE:5096</td>
<td>Water, Energy, and Food Nexus Seminar</td>
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<td>Spring</td>
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<td></td>
<td>CEE:5350</td>
<td>Watershed Hydrology and Ecosystem Processes</td>
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<td>Career Paths in Sustainable Water Development f</td>
</tr>
<tr>
<td></td>
<td>CEE:5096</td>
<td>Water, Energy, and Food Nexus Seminar</td>
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</tbody>
</table>

### Second Year

| Any Semester | Comprehensive Exam g | Hours | 0 |

| Fall | CEE Elective course | e | 3 |
|      | CEE Elective course | e | 3 |
|      | CEE Elective course | e | 3 |
|      | CEE:5097 | Coaching Seminar on Communicating Water Science h | 0 |
|      | CEE:5096 | Water, Energy, and Food Nexus Seminar d | 0 |
|      | CEE:7999 | Research: Civil and Environmental Engineering PhD Dissertation i | 6 |
| Spring | CEE:6225 | Communicating Science | 3 |
|         | CEE Elective course | e | 3 |
|         | CEE Elective course | e | 3 |
|         | CEE:5097 | Coaching Seminar on Communicating Water Science h | 0 |
|         | CEE:5096 | Water, Energy, and Food Nexus Seminar d | 0 |
|         | CEE:7999 | Research: Civil and Environmental Engineering PhD Dissertation i | 6 |

### Third Year

| Fall | CEE Elective course | e | 3 |
|      | CEE:5097 | Coaching Seminar on Communicating Water Science h | 0 |
|      | CEE:5096 | Water, Energy, and Food Nexus Seminar d | 0 |
|      | CEE:7999 | Research: Civil and Environmental Engineering PhD Dissertation i | 9 |

### Fourth Year

<p>| Fall | CEE Elective course | e | 3 |
|      | CEE:5097 | Coaching Seminar on Communicating Water Science h | 0 |
|      | CEE:5096 | Water, Energy, and Food Nexus Seminar d | 0 |
|      | CEE:7999 | Research: Civil and Environmental Engineering PhD Dissertation i | 9 |</p>
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE:7999</td>
<td>Research: Civil and Environmental Engineering PhD Diploma</td>
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</table>

**Hours** | 2

### Spring

<table>
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<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Exam</td>
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<td>k</td>
</tr>
<tr>
<td>CEE:5096</td>
<td>Water, Energy, and Food Nexus Seminar</td>
<td>d</td>
</tr>
</tbody>
</table>

**Hours** | 0

**Total Hours** | 72

---

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**b** Typically completed by the end of the first year. Refer to the CEE website and the Gradual College Manual of Rules and Regulations for details.

**c** Must be completed during first semester.

**d** Required every semester.

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**j** Technical communication requirement; approved courses include RHET:7500, RHET:7930, RHET:7940. Other courses may be considered and should be submitted to the CEE Director of Graduate Studies for approval.

**k** Oral dissertation defense.

---

## Structures, Mechanics and Materials Subprogram

### Academic Career

#### Any Semester

72 s.h. must be graduate level coursework; up to 24 s.h. of graduate transfer credits allowed upon approval. More information is included in the General Catalog and on department website.

**Hours** | 0

### First Year

#### Any Semester

| Qualifying Exam |                                                       | b     |

**Hours** | 0

### Fall

| CEE Core course |                                                       | c     |
| CEE Core course |                                                       | c     |
| CEE Core course |                                                       | c     |
| ENGR:7270 | Engineering Ethics | d | 1 |
| CEE:5098 | Graduate Seminar in Structures, Materials, Mechanics, and Transportation | e |

**Hours** | 10

### Spring

| CEE Core course |                                                       | c     |
| CEE Core course |                                                       | c     |
| CEE Elective course |                                                       | f     |
| CEE Elective course |                                                       | f     |
| CEE:5098 | Graduate Seminar in Structures, Materials, Mechanics, and Transportation | e |
| CEE:7999 | Research: Civil and Environmental Engineering PhD Dissertation | h |

**Hours** | 15

### Second Year

#### Any Semester

| Comprehensive Exam |                                                       | g     |

**Hours** | 0

### Fall

| CEE Elective course |                                                       | f     |
| CEE Elective course |                                                       | f     |
| CEE Elective course |                                                       | f     |
| CEE:5098 | Graduate Seminar in Structures, Materials, Mechanics, and Transportation | e |
| CEE:7999 | Research: Civil and Environmental Engineering PhD Dissertation | h |

**Hours** | 12

### Third Year

#### Fall

| CEE Elective course |                                                       | f     |
| CEE:5098 | Graduate Seminar in Structures, Materials, Mechanics, and Transportation | e |
| CEE:7999 | Research: Civil and Environmental Engineering PhD Dissertation | h |

**Hours** | 15

### Spring

| CEE:5098 | Graduate Seminar in Structures, Materials, Mechanics, and Transportation | e |
| CEE:7999 | Research: Civil and Environmental Engineering PhD Dissertation | h |

**Hours** | 12

### Fourth Year

#### Fall

| CEE:5098 | Graduate Seminar in Structures, Materials, Mechanics, and Transportation | e |
| CEE:7999 | Research: Civil and Environmental Engineering PhD Dissertation | h |

**Hours** | 6

### Fourth Year

#### Fall

| CEE:5098 | Graduate Seminar in Structures, Materials, Mechanics, and Transportation | e |
| CEE:7999 | Research: Civil and Environmental Engineering PhD Dissertation | h |

**Hours** | 2
Sustainable Water Development Subprogram

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<td>Foundations of Environmental Chemistry and Microbiology</td>
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<td>CEE:5380</td>
<td>Fluid Flows in Environmental Systems</td>
<td>3</td>
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<td>CEE:5410</td>
<td>Politics and Economics of the Food, Energy, Water Nexus</td>
<td>3</td>
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<tr>
<td>ENGR:7270</td>
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Spring

**CEE Elective course**

**Total Hours** 10

Second Year

Any Semester

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<td>Watershed Hydrology and Ecosystem Processes</td>
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Fall

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<tr>
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<td>Coaching Seminar on Communicating Water Science</td>
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<td>CEE:5096</td>
<td>Water, Energy, and Food Nexus Seminar</td>
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Spring

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Third Year

Fall

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<th>Title</th>
<th>Hours</th>
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Spring

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Fourth Year

Fall

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<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tr>
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Transportation Subprogram

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<th>Hours</th>
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<td><strong>Spring</strong></td>
<td>Final Exam</td>
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<tr>
<td>CEE:5096</td>
<td>Water, Energy, and Food Nexus Seminar</td>
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</tr>
<tr>
<td><strong>Hours</strong></td>
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<tr>
<td><strong>Total Hours</strong></td>
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<td>72</td>
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c. Must be completed during first semester.

d. Required every semester.

e. Work with academic advisor to determine graduate elective coursework and sequence. See General Catalog and CEE website for specifics.

f. Typically this course is offered in spring semesters only. Check MyUI for course availability since offerings are subject to change.

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k. Oral dissertation defense.

Second Year

Any Semester

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
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Fall

<table>
<thead>
<tr>
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<th>Title</th>
<th>Hours</th>
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<td>Graduate Seminar in Structures, Materials, Mechanics, and Transportation</td>
<td>3</td>
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<tr>
<td>CEE:7999</td>
<td>Research: Civil and Environmental Engineering PhD Dissertation</td>
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<td><strong>Hours</strong></td>
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Spring

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<td><strong>Hours</strong></td>
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Third Year

Fall

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<tr>
<td>CEE:5098</td>
<td>Graduate Seminar in Structures, Materials, Mechanics, and Transportation</td>
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Spring

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<th>Hours</th>
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<tr>
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<td>Research: Civil and Environmental Engineering PhD Dissertation</td>
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Fourth Year

Fall
CEE:5098  Graduate Seminar in Structures, Materials, Mechanics, and Transportation 0
CEE:7999  Research: Civil and Environmental Engineering PhD Dissertation 2

Spring
CEE:5098  Graduate Seminar in Structures, Materials, Mechanics, and Transportation 0

Final Exam 0

Total Hours 72

a Students must complete specific requirements in the University of Iowa Graduate College after program admission. Refer to the Graduate College website and the Manual of Rules and Regulations for more information.
b Typically completed by the end of first year; refer to department website and Graduate Handbook for specifics.
c Must be completed during first semester.
d Required every semester.
e Work with academic advisor to determine elective graduate coursework and sequence. See General Catalog and department website for specifics.
f Oral exam to be completed within one year of passing the Qualifying Exam, typically by the end of second year; a written prospectus is submitted to the committee two weeks before oral exam.
g Minimum of 29 s.h. required. Up to 6 s.h. for a letter grade; all other credits must be taken on S/U basis.
h Technical communication requirement; approved courses include RHET:7500, RHET:7930, RHET:7940. Other courses may be considered and should be submitted to the CEE Director of Graduate Studies for approval.
i Dissertation defense.

Water Resources Subprogram

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>Academic Career</td>
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<tr>
<td>Any Semester</td>
<td>72 s.h. of graduate level coursework must be</td>
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<tr>
<td></td>
<td>completed; up to 24 s.h. of graduate transfer</td>
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<tr>
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<td>credits allowed upon approval. More information</td>
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<td>is included in the General Catalog and on</td>
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Fall
CC:5096  Water, Energy, and Food Nexus Seminar 0

Spring
CEE Elective course 3
CEE Elective course 3
CEE:5350  Watershed Hydrology and Ecosystem Processes 3
CEE:5095  Career Paths in Sustainable Water Development 0
CEE:5096  Water, Energy, and Food Nexus Seminar 0

Second Year

Any Semester
Comprehensive Exam 6

Total Hours 15

Third Year

Fall
CEE Elective course 3
CEE:5097  Coaching Seminar on Communicating Water Science 0
CEE:5096  Water, Energy, and Food Nexus Seminar 0
CEE:7999  Research: Civil and Environmental Engineering PhD Dissertation 9

Spring
CEE:6225  Communicating Science 3
CEE Elective course 3
CEE Elective course 3
CEE:5097  Coaching Seminar on Communicating Water Science 0
CEE:5096  Water, Energy, and Food Nexus Seminar 0
CEE:7999  Research: Civil and Environmental Engineering PhD Dissertation 6

Total Hours 12
### Fourth Year

#### Fall

<table>
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<tr>
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<th>Course Title</th>
<th>Credits</th>
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#### Hours

| Hours | 2 |

#### Spring

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<th>Course Code</th>
<th>Course Title</th>
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<td>Water, Energy, and Food Nexus Seminar</td>
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</table>

#### Hours

| Hours | 0 |

#### Total Hours

| Total Hours | 72 |

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a Students must complete specific requirements in the University of Iowa Graduate College after program admission. Refer to the Graduate College website and the Manual of Rules and Regulations for more information.

b Typically completed by the end of the first year. Refer to the CEE website and the Gradual College Manual of Rules and Regulations for details.

c Must be completed during first semester.

d Required every semester.

e Work with academic advisor to determine graduate elective coursework and sequence. See General Catalog and CEE website for specifics.

f Typically this course is offered in spring semesters only. Check MyUI for course availability since offerings are subject to change.

g Oral exam typically completed by the end of the second year after passing the Qualifying Exam; written dissertation prospectus must be submitted to the committee two weeks before exam.

h Enrollment during four semesters is required.

i Total of 29 s.h. from CEE:7999 is required. May take up to 6 s.h. for a letter grade; all other credits must be taken on S/U basis.

j Technical communication requirement; approved courses include RHET:7500, RHET:7930, RHET:7940. Other courses may be considered and should be submitted to the CEE Director of Graduate Studies for approval.

k Oral dissertation defense.