

# 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

Course	Title	Hours
<b>Academic Career</b>		
<b>Any Semester</b>		
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. <sup>a</sup>		
<b>Hours</b>		<b>0</b>
<b>First Year</b>		
<b>Any Semester</b>		
Qualifying Exam <sup>b</sup>		
<b>Hours</b>		<b>0</b>
<b>Fall</b>		
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 <sup>c</sup>	1
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
<b>Hours</b>		<b>10</b>
<b>Spring</b>		
CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE:5350	Watershed Hydrology and Ecosystem Processes	3
CEE:5095	Career Paths in Sustainable Water Development <sup>f</sup>	0

CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
<b>Hours</b>		<b>9</b>

### Second Year

#### Any Semester

Comprehensive Exam <sup>g</sup>		
<b>Hours</b>		<b>0</b>

#### Fall

CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	6
<b>Hours</b>		<b>15</b>

#### Spring

CEE:6225	Communicating Science <sup>j</sup>	3
CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	6
<b>Hours</b>		<b>15</b>

### Third Year

#### Fall

CEE Elective course <sup>e</sup>		3
CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	9
<b>Hours</b>		<b>12</b>

#### Spring

CEE Elective course <sup>e</sup>		3
CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	6
<b>Hours</b>		<b>9</b>

### Fourth Year

#### Fall

CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	2
<b>Hours</b>		<b>2</b>

#### Spring

Final Exam <sup>k</sup>

CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
<b>Hours</b>		<b>0</b>
<b>Total Hours</b>		<b>72</b>

- 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 Graduate 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
<b>Academic Career</b>		
<b>Any Semester</b>		
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. <sup>a</sup>		
<b>Hours</b>		<b>0</b>
<b>First Year</b>		
<b>Any Semester</b>		
Qualifying Exam <sup>b</sup>		
<b>Hours</b>		<b>0</b>
<b>Fall</b>		
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 <sup>c</sup>	1
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
<b>Hours</b>		<b>10</b>
<b>Spring</b>		
CEE Elective course <sup>e</sup>		
		3
CEE Elective course <sup>e</sup>		
		3

CEE:5350	Watershed Hydrology and Ecosystem Processes	3
CEE:5095	Career Paths in Sustainable Water Development <sup>f</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
<b>Hours</b>		<b>9</b>

## Second Year

### Any Semester

Comprehensive Exam <sup>g</sup>		
<b>Hours</b>		<b>0</b>

### Fall

CEE Elective course <sup>e</sup>		
		3
CEE Elective course <sup>e</sup>		
		3
CEE Elective course <sup>e</sup>		
		3
CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	6

**Hours 15**

### Spring

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

**Hours 15**

## Third Year

### Fall

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

**Hours 12**

### Spring

CEE Elective course <sup>e</sup>		
		3
CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	6

**Hours 9**

## Fourth Year

### Fall

CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	2

**Hours 2**

**Spring**Final Exam<sup>k</sup>

CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
<b>Hours</b>		<b>0</b>
<b>Total Hours</b>		<b>72</b>

- 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 Graduate 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.

**Hydraulics Subprogram**

Course	Title	Hours
<b>Academic Career</b>		
<b>Any Semester</b>		
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.		
<b>Hours</b>		<b>0</b>
<b>First Year</b>		
<b>Any Semester</b>		
Qualifying Exam <sup>b</sup>		
<b>Hours</b>		<b>0</b>
<b>Fall</b>		
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 <sup>c</sup>	1
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
<b>Hours</b>		<b>10</b>

**Spring**

CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE:5350	Watershed Hydrology and Ecosystem Processes	3
CEE:5095	Career Paths in Sustainable Water Development <sup>f</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
<b>Hours</b>		<b>9</b>

**Second Year****Any Semester**

Comprehensive Exam <sup>g</sup>		
<b>Hours</b>		<b>0</b>

**Fall**

CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	6
<b>Hours</b>		<b>15</b>

**Spring**

CEE:6225	Communicating Science <sup>j</sup>	3
CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	6
<b>Hours</b>		<b>15</b>

**Third Year****Fall**

CEE Elective course <sup>e</sup>		3
CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	9
<b>Hours</b>		<b>12</b>

**Spring**

CEE Elective course <sup>e</sup>		3
CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	6
<b>Hours</b>		<b>9</b>

**Fourth Year****Fall**

CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
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CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	2
<b>Hours</b>		<b>2</b>
<b>Spring</b>		
Final Exam <sup>k</sup>		
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
<b>Hours</b>		<b>0</b>
<b>Total Hours</b>		<b>72</b>

- 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 Graduate 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.

## Structures, Mechanics and Materials Subprogram

Course	Title	Hours
<b>Academic Career</b>		
<b>Any Semester</b>		
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. <sup>a</sup>		
<b>Hours</b>		<b>0</b>
<b>First Year</b>		
<b>Any Semester</b>		
Qualifying Exam <sup>b</sup>		
<b>Hours</b>		<b>0</b>
<b>Fall</b>		
CEE Core course <sup>c</sup>		3
CEE Core course <sup>c</sup>		3
CEE Core course <sup>c</sup>		3
ENGR:7270	Engineering Ethics <sup>d</sup>	1
CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>e</sup>	0
<b>Hours</b>		<b>10</b>

<b>Spring</b>		
CEE Core course <sup>c</sup>		3
CEE Core course <sup>c</sup>		3
CEE Elective course <sup>f</sup>		3
CEE Elective course <sup>f</sup>		3
CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>e</sup>	0
<b>Hours</b>		<b>12</b>

<b>Second Year</b>		
<b>Any Semester</b>		
Comprehensive Exam <sup>g</sup>		
<b>Hours</b>		<b>0</b>
<b>Fall</b>		
CEE Elective course <sup>f</sup>		3
CEE Elective course <sup>f</sup>		3
CEE Elective course <sup>f</sup>		3
CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>e</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>h</sup>	6
<b>Hours</b>		<b>15</b>

<b>Spring</b>		
CEE:6225	Communicating Science <sup>i</sup>	3
CEE Elective course <sup>f</sup>		3
CEE Elective course <sup>f</sup>		3
CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>e</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>h</sup>	6
<b>Hours</b>		<b>15</b>

<b>Third Year</b>		
<b>Fall</b>		
CEE Elective course <sup>f</sup>		3
CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>e</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>h</sup>	9
<b>Hours</b>		<b>12</b>

<b>Spring</b>		
CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>e</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>h</sup>	6
<b>Hours</b>		<b>6</b>

<b>Fourth Year</b>		
<b>Fall</b>		
CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>e</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>h</sup>	2
<b>Hours</b>		<b>2</b>

**Spring**

CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>e</sup>	0
Final Exam <sup>j</sup>		
<b>Hours</b>		<b>0</b>
<b>Total Hours</b>		<b>72</b>

- 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 Complete five courses from CEE:4512, CEE:5513, CEE:5540, CEE:4533, CEE:5179, CEE:5310.
- d Must be completed during first semester.
- e Required every semester.
- f Work with academic advisor to determine elective graduate coursework and sequence. See General Catalog and department website for specifics.
- g 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.
- h 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.
- i 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.
- j Dissertation defense.

## Sustainable Water Development Subprogram

Course	Title	Hours
<b>Academic Career</b>		
<b>Any Semester</b>		
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.		
<b>Hours</b>		<b>0</b>
<b>First Year</b>		
<b>Any Semester</b>		
Qualifying Exam <sup>b</sup>		
<b>Hours</b>		<b>0</b>
<b>Fall</b>		
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 <sup>c</sup>	1
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
<b>Hours</b>		<b>10</b>
<b>Spring</b>		
CEE Elective course <sup>e</sup>		3

CEE Elective course <sup>e</sup>		3
CEE:5350	Watershed Hydrology and Ecosystem Processes	3
CEE:5095	Career Paths in Sustainable Water Development <sup>f</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
<b>Hours</b>		<b>9</b>

**Second Year****Any Semester**

Comprehensive Exam <sup>g</sup>		
<b>Hours</b>		<b>0</b>
<b>Fall</b>		
CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	6
<b>Hours</b>		<b>15</b>

**Spring**

CEE:6225	Communicating Science <sup>j</sup>	3
CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	6
<b>Hours</b>		<b>15</b>

**Third Year****Fall**

CEE Elective course <sup>e</sup>		3
CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	9
<b>Hours</b>		<b>12</b>

**Spring**

CEE Elective course <sup>e</sup>		3
CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	6
<b>Hours</b>		<b>9</b>

**Fourth Year****Fall**

CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
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CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	2
<b>Hours</b>		<b>2</b>
<b>Spring</b>		
Final Exam <sup>k</sup>		
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
<b>Hours</b>		<b>0</b>
<b>Total Hours</b>		<b>72</b>

- 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 Graduate 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.

## Transportation Subprogram

Course	Title	Hours
<b>Academic Career</b>		
<b>Any Semester</b>		
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. <sup>a</sup>		
<b>Hours</b>		<b>0</b>
<b>First Year</b>		
<b>Any Semester</b>		
Qualifying Exam <sup>b</sup>		
<b>Hours</b>		<b>0</b>
<b>Fall</b>		
CEE:5310	Informatics for Sustainable Systems	3
CEE:4560	Pavement Engineering	3
CEE:5678	Application Simulation to Transportation	3
ENGR:7270	Engineering Ethics <sup>c</sup>	1

CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>d</sup>	0
<b>Hours</b>		<b>10</b>

<b>Spring</b>		
CEE:4730	Transportation Infrastructure Construction and Management	3
STAT:4100 or STAT:4200	Statistical Inference I or Statistical Methods and Computing	3
CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>d</sup>	0
<b>Hours</b>		<b>12</b>

<b>Second Year</b>		
<b>Any Semester</b>		
Comprehensive Exam <sup>f</sup>		
<b>Hours</b>		<b>0</b>

<b>Fall</b>		
CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>g</sup>	6
<b>Hours</b>		<b>15</b>

<b>Spring</b>		
CEE:6225	Communicating Science <sup>h</sup>	3
CEE Elective course <sup>e</sup>		3
CEE Elective course <sup>e</sup>		3
CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>g</sup>	6
<b>Hours</b>		<b>15</b>

<b>Third Year</b>		
<b>Fall</b>		
CEE Elective course <sup>e</sup>		3
CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>g</sup>	9
<b>Hours</b>		<b>12</b>

<b>Spring</b>		
CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>g</sup>	6
<b>Hours</b>		<b>6</b>

**Fourth Year****Fall**

CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>d</sup>	0
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CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>g</sup>	2
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<b>Hours</b>	<b>2</b>
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**Spring**

CEE:5098	Graduate Seminar in Structures, Materials, Mechanics, and Transportation <sup>d</sup>	0
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Final Exam <sup>i</sup>		0
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<b>Hours</b>	<b>0</b>
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<b>Total Hours</b>	<b>72</b>
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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 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**

Course	Title	Hours
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**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.

<b>Hours</b>	<b>0</b>
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**First Year****Any Semester**

Qualifying Exam <sup>b</sup>		0
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<b>Hours</b>	<b>0</b>
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**Fall**

CEE:5440	Foundations of Environmental Chemistry and Microbiology	3
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CEE:5380	Fluid Flows in Environmental Systems	3
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CEE:5410	Politics and Economics of the Food, Energy, Water Nexus	3
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ENGR:7270	Engineering Ethics <sup>c</sup>	1
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CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
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<b>Hours</b>	<b>10</b>
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**Spring**

CEE Elective course <sup>e</sup>		3
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CEE Elective course <sup>e</sup>		3
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CEE:5350	Watershed Hydrology and Ecosystem Processes	3
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CEE:5095	Career Paths in Sustainable Water Development <sup>f</sup>	0
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CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
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<b>Hours</b>	<b>9</b>
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**Second Year****Any Semester**

Comprehensive Exam <sup>g</sup>		0
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<b>Hours</b>	<b>0</b>
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**Fall**

CEE Elective course <sup>e</sup>		3
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CEE Elective course <sup>e</sup>		3
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CEE Elective course <sup>e</sup>		3
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CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
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CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
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CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	6
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<b>Hours</b>	<b>15</b>
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**Spring**

CEE:6225	Communicating Science <sup>j</sup>	3
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CEE Elective course <sup>e</sup>		3
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CEE Elective course <sup>e</sup>		3
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CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
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CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
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CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	6
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<b>Hours</b>	<b>15</b>
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**Third Year****Fall**

CEE Elective course <sup>e</sup>		3
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CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
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CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
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CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	9
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<b>Hours</b>	<b>12</b>
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**Spring**

CEE Elective course <sup>e</sup>		3
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CEE:5097	Coaching Seminar on Communicating Water Science <sup>h</sup>	0
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CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
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CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	6
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<b>Hours</b>	<b>9</b>
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**Fourth Year****Fall**

CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
CEE:7999	Research: Civil and Environmental Engineering PhD Dissertation <sup>i</sup>	2
<b>Hours</b>		<b>2</b>

**Spring**

Final Exam <sup>k</sup>		
CEE:5096	Water, Energy, and Food Nexus Seminar <sup>d</sup>	0
<b>Hours</b>		<b>0</b>
<b>Total Hours</b>		<b>72</b>

- 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.