

**REQUIREMENTS FOR THE BACHELOR OF SCIENCE/MASTER OF SCIENCE**  
**GALLOGLY COLLEGE OF ENGINEERING**  
**THE UNIVERSITY OF OKLAHOMA**

Academic Year
For Students Entering the Oklahoma State System for Higher Education <b>Summer 2024 through Spring 2025</b>

General Requirements	
Minimum Total Credit Hours .....	147
<b>Minimum Retention/Graduation Grade Point Averages:</b>	
Overall - Combined and OU .....	3.00
Major - Combined and OU .....	3.00
Curriculum - Combined and OU .....	3.00

Program
<b>Environmental Engineering</b>
<b>A390/F390</b>
Bachelor of Science/Master of Science

OU encourages students to complete at least 30 hours of applicable coursework each year to have the opportunity to graduate in 5 years.

### GENERAL EDUCATION AND COLLEGE REQUIREMENTS

Courses designated as Core I, II, III, IV, or V are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved list, including at least one upper-division Gen. Ed. course outside of the student's major. **Courses graded P/NP will not apply.**

**A grade of C or better is required in each course in the curriculum, including all prerequisite courses.**

### UNIVERSITY-WIDE GENERAL EDUCATION (MINIMUM 40 HOURS) AND COLLEGE REQUIREMENTS

Code	Title	Credit Hours
<b>Core Area I: Symbolic and Oral Communication</b>		
<i>English Composition</i>		
ENGL 1113	Principles of English Composition	3
ENGL 1213	Principles of English Composition	3
or EXPO 1213	Expository Writing	
<i>Language (0-10 hours in the same language)</i>		
This requirement can be met by two years of the same language in high school:		0-10
Beginning Course (0-5 hours)		
Beginning Course, continued (0-5 hours)		
<i>Mathematics</i>		
MATH 1914	Differential and Integral Calculus I (Core I) <sup>1,2</sup>	4
<b>Core Area II: Natural Science (including one laboratory)</b>		
PHYS 2514	General Physics for Engineering and Science Majors (Core II) <sup>2</sup>	4
CHEM 1315	General Chemistry (Core II-Lab) <sup>2</sup>	5
or CHEM 1335	General Chemistry I: Signature Course	
<b>Core Area III: Social Science</b>		
P SC 1113	American Federal Government	3
Choose one course <sup>3</sup>		3
<b>Core Area IV: Arts &amp; Humanities</b>		
<i>Artistic Forms</i>		
Choose one course <sup>3</sup>		3
<i>Western Culture</i>		
HIST 1483	United States to 1865	3
or HIST 1493	United States, 1865 to the Present	
HSTM 3333	Technology and Society in World History (or approved substitute Core IV-Western Culture) <sup>3</sup>	3
<i>World Culture</i>		
ANTH 4623	Approaches to Cross-Cultural Human Problems (or approved substitute Core IV-World Culture) <sup>3</sup>	3
<b>Core Area V: First-Year Experience</b>		
ENGR 1413	Pathways to Engineering Thinking (Core V-FYE) <sup>4</sup>	3
<b>Total Credit Hours</b>		<b>40-50</b>

- MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934.
- Major support requirements that also satisfy University General Education requirements.
- To be chosen from the University-Wide General Education Approved Course List. Three of these hours must be upper-division (3000-4000). See list in the Class Schedule.
- Transfer students will need to meet the requirements of the first-year experience course as well as the engineering transfer course. Please see your advisor for your specific enrollment.

### FREE ELECTIVES

Electives to bring total applicable hours to the minimum total required for the degree including a minimum of 40 upper-division hours.

**Bachelor of Science in Environmental Engineering accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the General Criteria and the Environmental Engineering and Similarly Named Program Criteria.**

In order to progress in your curriculum in the Gallogly College of Engineering, and as a specific graduation requirement, a **grade of C or better** is required in each course in the curriculum, including all prerequisite courses.

### MAJOR REQUIREMENTS

Code	Title	Credit Hours
<b>Required Courses</b>		
CEES 1000	CEES Seminar (minimum of four semesters required)	0
CEES 1111	Exploring CEES	1
CEES 2113	Statics	3
CEES 2153	Mechanics of Materials	3
CEES 2213	CADD Fundamentals	3
CEES 2223	Fluid Mechanics	3
CEES 2313	Water Quality Fundamentals	3
CEES 2323	Environmental Transport and Fate Process	3
CEES 2412	Earth Systems and Processes	2
CEES 3213	Water Resources Engineering	3
CEES 3243	Water and Wastewater Treatment Design	3
CEES 3361	Soil Mechanics Laboratory	1
CEES 3363	Soil Mechanics	3
CEES 4114	Aquatic Chemistry	4
CEES 4253	Statistics and Probability	3
CEES 4263	Hazardous and Solid Waste Management	3
CEES 4324	Environmental Biology and Ecology	4
CEES 4921	Introduction to EE Capstone	1
CEES 4923	Environmental Engineering Capstone	3
CEES 4943	Air Quality Management	3
CEES 4951	Contemporary Topics in Professional Practice	1
<b>Total Credit Hours</b>		<b>53</b>

### MAJOR SUPPORT REQUIREMENTS

Code	Title	Credit Hours
<b>Math and Science</b>		
CHEM 1415	General Chemistry (Continued)	5
or CHEM 1435	General Chemistry II: Signature Course	
CHEM 3053	Organic Chemistry I: Biological Emphasis	3
MATH 2924	Differential and Integral Calculus II	4
MATH 2934	Differential and Integral Calculus III	4
MATH 3113	Introduction to Ordinary Differential Equations	3
PHYS 2524	General Physics for Engineering and Science Majors	4
<b>Professional Electives</b>		
Choose any two 3000-level or higher course in CEES (one three-hour professional elective can be taken outside CEES with advisor approval)		6
<b>Additional College Requirements</b>		
ENGR 2002	Professional Responsibilities and Skills of Engineers and Scientists	2
ENGR 2461	Thermodynamics	1
ENGR 3401	Engineering Economics	1
<b>Total Credit Hours</b>		<b>33</b>

### GRADUATE REQUIREMENTS

**Accelerated students may dual count nine hours of graduate-level electives as approved by their advisor.**

All elective courses are subject to the following restrictions: (i) one 3000G course outside CEES may be used toward the degree; (ii) no more than 9 credits of 4000G courses from CEES, including required core courses, may count toward the master's degree; (iii) no more than 12 credits of 4000G courses from all departments, including CEES, may count toward the master's degree; (iv) and no more than 9 hours from departments outside CEES may count toward the master's degree.

**THESIS OPTION**

<b>Code</b>	<b>Title</b>	<b>Credit Hours</b>
<b>Required Courses</b>		
CEES 5114	Aquatic Chemistry	4
CEES 5243	Physical-Chemical Water Treatment	3
CEES 5233	Biological Waste Treatment Design	3
CEES 5021	Technical Communications	1
<b>Electives</b>		
Elective coursework from a list of MS Env. Engr. electives maintained by the department and approved by the Graduate College <sup>1</sup>		13-14
<b>Thesis</b>		
CEES 5980	Research for Master's Thesis	5-6
<b>Total Credit Hours</b>		<b>30</b>

<sup>1</sup> MS Env. Engr. students may choose elective courses in civil engineering, environmental engineering, environmental science, mathematics, meteorology, computer science, and/or related subjects. Graduate courses not listed here may also be used as electives with advisor's prior approval.

**NON-THESIS OPTION**

The Non-Thesis degree is a coursework-only degree; a Non-Thesis examination is not required.

<b>Code</b>	<b>Title</b>	<b>Credit Hours</b>
<b>Required Courses</b>		
CEES 5114	Aquatic Chemistry	4
CEES 5243	Physical-Chemical Water Treatment	3
CEES 5233	Biological Waste Treatment Design	3
<b>Electives</b>		
Elective coursework from a list of MS Env. Engr. electives maintained by the department and approved by the Graduate College <sup>1</sup>		20
<b>Total Credit Hours</b>		<b>30</b>

<sup>1</sup> MS Env. Engr. students may choose elective courses in civil engineering, environmental engineering, environmental science, mathematics, meteorology, computer science, and/or related subjects. Graduate courses not listed here may also be used as electives with advisor's prior approval.

More information in the catalog: (<http://ou-public.courseleaf.com/gallogly-engineering/civil-engineering-environmental-science/environmental-engineering-bachelor-science-environmental-engineering-master-science/>).

## SUGGESTED SEMESTER PLAN OF STUDY

Bachelor of Science in Environmental Engineering accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the General Criteria and the Environmental Engineering and Similarly Named Program Criteria.

In order to progress in your curriculum in the Gallogly College of Engineering, and as a specific graduation requirement, a grade of C or better is required in each course in the curriculum, including all prerequisite courses.

Admission to the accelerated program is by application and requires a minimum major GPA of 3.20 and an overall GPA of 3.00. Once admitted, students must maintain an overall GPA of 3.00 during the bachelors. Students may enter the accelerated program based on the undergraduate degree pattern offered in the year they first enrolled in the Oklahoma State System of Higher Education or later. Students are eligible for graduate status upon graduation with the Bachelor of Science in Environmental Engineering.

Two college-level courses in a single world language are required; this may be satisfied by successful completion of 2 years in a single world language in high school. Students who must take a language at the University will have an additional 6-10 hours of coursework.

Year	FIRST SEMESTER		Hours	SECOND SEMESTER		Hours
FRESHMAN	ENGL 1113	Principles of English Composition ( Core I )	3	ENGL 1213 or EXPO 1213	Principles of English Composition ( Core I ) or Expository Writing	3
	CHEM 1315	General Chemistry ( Core II-Lab ) <sup>1</sup>	5	CHEM 1415	General Chemistry (Continued) ( Core II-Lab ) <sup>1</sup>	5
	MATH 1914	Differential and Integral Calculus I ( Core I ) <sup>2</sup>	4	MATH 2924	Differential and Integral Calculus II <sup>2</sup>	4
	ENGR 1413	Pathways to Engineering Thinking ( Core V-FYE ) <sup>3</sup>	3	PHYS 2514	General Physics for Engineering and Science Majors ( Core II )	4
				CEES 1111	Exploring CEES	1
	<b>CREDIT HOURS</b>		<b>15</b>	<b>CREDIT HOURS</b>		<b>17</b>
SOPHOMORE	MATH 2934	Differential and Integral Calculus III <sup>2</sup>	4	MATH 3113	Introduction to Ordinary Differential Equations	3
	PHYS 2524	General Physics for Engineering and Science Majors	4	CEES 1000	CEES Seminar <sup>4</sup>	0
	CEES 1000	CEES Seminar <sup>4</sup>	0	CEES 2153	Mechanics of Materials	3
	CEES 2213	CADD Fundamentals	3	CEES 2223	Fluid Mechanics	3
	CEES 2113	Statics	3	CEES 2323	Environmental Transport and Fate Process	3
	CEES 2313	Water Quality Fundamentals	3	CEES 2412	Earth Systems and Processes	2
			ENGR 2002	Professional Responsibilities and Skills of Engineers and Scientists	2	
	<b>CREDIT HOURS</b>		<b>17</b>	<b>CREDIT HOURS</b>		<b>16</b>
JUNIOR	CHEM 3053	Organic Chemistry I: Biological Emphasis	3	HSTM 3333	Technology and Society in World History ( or approved substitute) (Core IV, Western Culture )	3
	CEES 1000	CEES Seminar <sup>4</sup>	0	CEES 1000	CEES Seminar <sup>4</sup>	0
	CEES 3213	Water Resources Engineering	3	CEES 3243	Water and Wastewater Treatment Design	3
	CEES 3363	Soil Mechanics	3	CEES 4253	Statistics and Probability	3
	CEES 3361	Soil Mechanics Laboratory	1	CEES 4943	Air Quality Management <sup>9</sup>	3
	ENGR 3401	Engineering Economics	1	ENGR 2461	Thermodynamics	1
	Professional Elective <sup>5</sup>	3		Approved Elective: Social Science (Core III) <sup>6</sup>	3	
	<b>CREDIT HOURS</b>		<b>14</b>	<b>CREDIT HOURS</b>		<b>16</b>
SENIOR	HIST 1483 or HIST 1493	United States to 1865 ( Core IV ) or United States, 1865 to the Present	3	ANTH 4623	Approaches to Cross-Cultural Human Problems ( or approved substitute) (Core IV, World Culture )	3
	CEES 1000	CEES Seminar <sup>4</sup>	0	P SC 1113	American Federal Government ( Core III )	3
	CEES 4114	Aquatic Chemistry <sup>9</sup>	4	CEES 1000	CEES Seminar <sup>4</sup>	0
	CEES 4263	Hazardous and Solid Waste Management <sup>9</sup>	3	CEES 4923	Environmental Engineering Capstone	3
	CEES 4324	Environmental Biology and Ecology <sup>9</sup>	4		Professional Elective <sup>5,9</sup>	3
	CEES 4921	Introduction to EE Capstone	1		Approved Elective: Artistic Forms (Core IV) <sup>6</sup>	3
	CEES 4951	Contemporary Topics in Professional Practice	1			
	<b>CREDIT HOURS</b>		<b>16</b>	<b>CREDIT HOURS</b>		<b>15</b>
FIFTH YEAR		Graduate Major Elective	4		Choose one of the following: <sup>7</sup>	3-6
	CEES 5233	Biological Waste Treatment Design	3	CEES 5980	Research for Master's Thesis	
		CEES Graduate-level Elective <sup>8</sup>	3		Graduate-level Elective <sup>8</sup>	
		CEES Graduate-level Elective <sup>8</sup>	2		Choose one of the following: <sup>7</sup>	1-3
				CEES 5021	Technical Communications	
				Graduate-level Elective <sup>8</sup>		
			CEES 5243	Physical-Chemical Water Treatment	3	
	<b>CREDIT HOURS</b>		<b>12</b>	<b>CREDIT HOURS</b>		<b>9</b>

<sup>1</sup> CHEM 1315 and CHEM 1415 can be substituted with CHEM 1335 (Fall only) and CHEM 1435 (Spring only), respectively.

<sup>2</sup> MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934.

<sup>3</sup> Transfer students will need to meet the requirements of the first-year experience course as well as the engineering transfer course. Please see your advisor for your specific enrollment.

<sup>4</sup> Students must complete a minimum of four semesters of CEES 1000.

<sup>5</sup> Professional electives can be chosen from any 3000-level or higher course in CEES. One three-hour professional elective can be taken outside CEES with advisor approval.

<sup>6</sup> To be chosen from the University-Wide General Education Approved Course List. Three of these hours must be upper-division (3000-4000). See list in the Class Schedule.

<sup>7</sup> Dependent upon whether a student chooses the thesis or non-thesis option: Non-thesis students will take two, 3-credit hour graduate level electives. Thesis students will take CEES 5021 and CEES 5980 (5-6 credit hours).

<sup>8</sup> Graduate level elective must be chosen from the list of MS Env. Engr. electives maintained by the department and approved by the Graduate College.

<sup>9</sup> Shared Courses: up to 9 credit hours may count towards both the bachelors and masters degrees. If fewer hours are shared, then total hours for the degree will increase. Options include: CEES 4253, CEES 4263, CEES 5114, CEES 5324, or Professional Elective(s). No student may earn credit for both CEES 4114 and 5114 or CEES 4324 and 5324.

Courses designated as Core I, II, III, IV or V are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved list.