

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

Academic Year	General Requirements	Program
For Students Entering the Oklahoma State System for Higher Education Summer 2024 through Spring 2025	Minimum Total Credit Hours 141 Minimum Retention/Graduation Grade Point Averages: Overall - Combined and OU 3.00 Major - Combined and OU 3.00 Curriculum - Combined and OU 3.00	Environmental Science A405/F405 Bachelor of Science/Master of Environmental Science
OU encourages students to complete at least 29 hours of applicable coursework each year to have the opportunity to graduate in 5 years.		

Minimum Total Credit Hours: 141

Overall GPA - Combined and OU: 3.00

Major GPA - Combined and OU: 3.00

Curriculum GPA - Combined and OU: 3.00

Program Code: A405/F405

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
Core Area I: Symbolic and Oral Communication		
<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 1823	Calculus and Analytic Geometry I (Core I) ^{1,2}	3
Core Area II: Natural Science (including one laboratory)		
PHYS 2514	General Physics for Engineering and Science Majors (Core II) ²	4
or PHYS 2414	General Physics for Life Science Oriented Majors	
CHEM 1315	General Chemistry (Core II-Lab) ²	5
or CHEM 1335	General Chemistry I: Signature Course	
Core Area III: Social Science		
P SC 1113	American Federal Government	3
Choose one course ³		3
Core Area IV: Arts & Humanities		
<i>Artistic Forms</i>		

Choose one course ³		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) ³	3
<i>World Culture</i>		
ANTH 4623	Approaches to Cross-Cultural Human Problems (or approved substitute Core IV-World Culture) ³	3
Core Area V: First-Year Experience		
ENGR 1413	Pathways to Engineering Thinking (Core V-FYE) ⁴	3
Total Credit Hours		39-49

¹ MATH 1914, MATH 2924, and MATH 2934 sequence can be substituted with MATH 1823, MATH 2423, MATH 2433, and MATH 2443.

² Major support requirements that also satisfy University General Education requirements.

³ 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.

⁴ 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.

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.

Undergraduate Major Requirements

Code	Title	Credit Hours
Required Courses		
CEES 1000	CEES Seminar (minimum of four semesters required)	0
CEES 1111	Exploring CEES	1
CEES 2213	CADD Fundamentals	3
CEES 2313	Water Quality Fundamentals	3
CEES 2323	Environmental Transport and Fate Process	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 4843	Hydrology	3
or CEES 5843	Hydrology	
CEES 4911	Introduction to ES Capstone	1
CEES 4913	Environmental Science Capstone	3
CEES 4943	Air Quality Management	3
Professional Electives		
Choose any two 3000-level or higher course in CEES (one three-hour professional elective can be taken outside CEES with advisor approval)		6
Total Credit Hours		40

Major Support Requirements

Code	Title	Credit Hours
Math and Science		
Choose one of the following:		4
BIOL 1134	Introductory Biology: Evolution, Ecology and Diversity	
or PBIO 1114	General Botany	
Choose one of the following:		3
BIOL 3403	Principles of Ecology	
or PBIO 3453	Principles of Plant Ecology	
CHEM 1415	General Chemistry (Continued)	5
or CHEM 1435	General Chemistry II: Signature Course	
CHEM 3053	Organic Chemistry I: Biological Emphasis	3
CHEM 3153	Organic Chemistry II: Biological Emphasis	3
MATH 2423	Calculus and Analytic Geometry II	3
MBIO 2815	Introduction to Microbiology	5
PHYS 2524	General Physics for Engineering and Science Majors	4
or PHYS 2424	General Physics for Life Science Oriented Majors	
Track Electives		
Choose three courses (See Student Handbook for the list of Track electives)		9
Additional College Requirements		

ENGR 2002	Professional Responsibilities and Skills of Engineers and Scientists	2
Total Credit Hours		41

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

Code	Title	Credit Hours
Required Courses		
Choose three of the following:		10-11
CEES 5114	Aquatic Chemistry	
CEES 5324	Environmental Biology and Ecology	
CEES 5843	Hydrology	
CEES 5853	Groundwater and Seepage	
CEES 5021	Technical Communications	1
Electives		
Elective coursework from a list of MES electives maintained by the department and approved by the Graduate College ¹		13-14
Thesis		
CEES 5980	Research for Master's Thesis	5
Total Credit Hours		30

¹ MES 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 the advisor's prior approval.

Non-Thesis Option

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

Code	Title	Credit Hours
Required Courses		
Choose three of the following:		10-11
CEES 5114	Aquatic Chemistry	
CEES 5324	Environmental Biology and Ecology	
CEES 5843	Hydrology	
CEES 5853	Groundwater and Seepage	
Electives		
Elective coursework from a list of MS Env. Engr. electives maintained by the department and approved by the Graduate College ¹		19-20
Total Credit Hours		30

¹ MES 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 the advisor's prior approval.

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

Suggested Semester Plan of Study

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 Science.

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	BIOL 1134 or PBIO 1114	Introductory Biology: Evolution, Ecology and Diversity (Core II-Lab) or General Botany	4
	CHEM 1315	General Chemistry (Core II-Lab) ¹	5	ENGL 1213 or EXPO 1213	Principles of English Composition (Core I) or Expository Writing	3
	MATH 1823	Calculus and Analytic Geometry I (Core I) ²	3	CHEM 1415	General Chemistry (Continued) (Core II-Lab) ¹	5
	ENGR 1413	Pathways to Engineering Thinking (Core V-FYE) ³	3	MATH 2423	Calculus and Analytic Geometry II ²	3
				CEES 1111	Exploring CEES	1
	CREDIT HOURS		14	CREDIT HOURS		16
SOPHOMORE	CHEM 3053	Organic Chemistry I: Biological Emphasis	3	CHEM 3153	Organic Chemistry II: Biological Emphasis	3
	PHYS 2514 or PHYS 2414	General Physics for Engineering and Science Majors (Core II) or General Physics for Life Science Oriented Majors	4	MBIO 2815	Introduction to Microbiology (Core II-Lab)	5
	CEES 2313	Water Quality Fundamentals	3	CEES 2323	Environmental Transport and Fate Process	3
	CEES 1000	CEES Seminar ⁴	0	CEES 1000	CEES Seminar ⁴	0
	CEES 2213	CADD Fundamentals	3	ENGR 2002	Professional Responsibilities and Skills of Engineers and Scientists	2
	BIOL 3403 or PBIO 3453	Principles of Ecology or Principles of Plant Ecology	3	HIST 1483 or HIST 1493	United States to 1865 or United States, 1865 to the Present	3
	CREDIT HOURS		16	CREDIT HOURS		16
JUNIOR	CEES 1000	CEES Seminar ⁴	0	ANTH 4623	Approaches to Cross-Cultural Human Problems (or approved substitute) (Core IV, World Culture)	3
	CEES 4263	Hazardous and Solid Waste Management ¹⁰	3		Approved Elective: Artistic Forms (Core IV) ⁵	3
	PHYS 2524 or PHYS 2424	General Physics for Engineering and Science Majors or General Physics for Life Science Oriented Majors	4	CEES 4843/5843	Hydrology	3
		CEES Track Elective ⁷	3	CEES 1000	CEES Seminar ⁴	0
		CEES Track Elective ⁷	3	CEES 4253	Statistics and Probability ¹⁰	3
			CEES 4943	Air Quality Management	3	
	CREDIT HOURS		13	CREDIT HOURS		15
SENIOR	HSTM 3333	Technology and Society in World History (or approved substitute) (Core IV, West. Culture)	3	CEES 1000	CEES Seminar ⁴	0
	CEES 1000	CEES Seminar ⁴	0	CEES 4913	Environmental Science Capstone	3
	CEES 4911	Introduction to ES Capstone	1		CEES Track Elective ⁷	3
	CEES 4114	Aquatic Chemistry ¹⁰	4		CEES Professional Elective ^{6,10}	3
	CEES 4324	Environmental Biology and Ecology ¹⁰	4	P SC 1113	American Federal Government (Core III)	3
	CEES Professional Elective ^{6,10}	3		Approved Elective: Social Science (Core III) ⁵	3	
	CREDIT HOURS		15	CREDIT HOURS		15
FIFTH YEAR		Graduate Major Elective	3-4		Choose one of the following: ⁸	1-3
		Graduate Major Elective	4	CEES 5021	Technical Communications	
		Graduate Major Elective or CEES Graduate-Level Elective ⁹	3		Graduate-level Elective ⁹	
		CEES Graduate-level Elective ⁹	1-2		Choose one of the following: ⁸	3-5
				CEES 5980	Research for Master's Thesis Graduate-level Elective ⁹	
				Graduate Major Elective or CEES Graduate-level Elective ⁹	3	
	CREDIT HOURS		12	CREDIT HOURS		9

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

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

³ 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.

- 4 Students must complete a minimum of four semesters of CEES 1000.
- 5 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.
- 6 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.
- 7 See CEES Undergraduate Student Handbook for the list of Track electives.
- 8 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-credit hours).
- 9 Graduate level elective must be chosen from the list of MES electives maintained by the department and approved by the Graduate College.
- 10 Shared courses: up to 9 hours may count toward both the bachelors and masters degrees. If less 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). If CEES 5114 is taken as a shared course in the Senior year, then a graduate elective will substitute for the CEES 5114 requirement in the Fifth year.

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.