

**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 .....	150-156
<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
Architectural Engineering/ Civil Engineering
A035/F188, F189
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	
Will be satisfied in major requirements		0
ARCH 2243	History of the Built Environment I (Core IV-Western Culture)	
<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>37-47</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).
- 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 Architectural Engineering accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the General Criteria and the Architectural 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>		
AME 2213	Thermodynamics	3
AME 3173	Heat Transfer	3
AME 4653	Air Conditioning Systems	3
ARCH 1263	Methods II - Pattern of Architecture	3
ARCH 2243	History of the Built Environment I	3
ARCH 2363	Materials and Form	3
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 3263	Introduction to Dynamics for Architectural and Civil Engineers	3
CEES 3361	Soil Mechanics Laboratory	1
CEES 3363	Soil Mechanics	3
CEES 3403	Materials	3
CEES 3413	Structural Analysis I	3
CEES 3453	Introduction to Construction Management	3
CEES 3663	Structural Design - Steel I	3
CEES 3673	Structural Design - Concrete I	3
CEES 4113	Building Lighting and Electrical Systems	3
CEES 4333	Foundation Engineering	3
CEES 4753	Structural Design - Wood	3
CEES 4991	Introduction to AE Capstone	1
CEES 4993	Architecture Engineering Capstone	3
ENGR 2431	Electrical Circuits	1
ENGR 3401	Engineering Economics	1
<b>Professional Elective</b>		
Choose any 3000-level or higher course in CEES		3
<b>Total Credit Hours</b>		<b>71</b>

**MAJOR SUPPORT REQUIREMENTS**

Code	Title	Credit Hours
<b>Math and Science</b>		
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
Choose one of the following:		4
GEOL 1114	Physical Geology for Science and Engineering Majors (Core II-Lab)	
Basic Science Elective		
Math (calculus or above)		
<b>Additional College Requirements</b>		
ENGR 2002	Professional Responsibilities and Skills of Engineers and Scientists	2
<b>Total Credit Hours</b>		<b>21</b>

**GRADUATE REQUIREMENTS**

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

## 2 Requirements for the Bachelor of Science/Master of Science

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

On-Campus Concentrations:

- Geotechnical Engineering F188 Q282
- Structural Engineering F188 Q634
- Water Resources Engineering F188 Q698

### THESIS OPTION

Code	Title	Credit Hours
<b>Required Courses</b>		
Concentration Core		9
<b>Writing Requirement</b>		
CEES 5021	Technical Communications	1
<b>Electives Courses</b>		
Choose 15 hours from a list of MSCE electives maintained by the department and approved by the Graduate College.		15
<b>Thesis</b>		
CEES 5980	Research for Master's Thesis	5
<b>Total Credit Hours</b>		<b>30</b>

### NON-THESIS OPTION

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

Code	Title	Credit Hours
<b>Required Courses</b>		
Concentration Core		9
<b>Elective Courses</b>		
Choose 21 hours from a list of MSCE electives maintained by the department and approved by the Graduate College.		21
<b>Total Credit Hours</b>		<b>30</b>

Online Concentrations

- Geotechnical Engineering (Online) F189 Q283
- Structural Engineering (Online) F189 Q635
- Transportation Engineering (Online) F189 Q658
- Water Resources Engineering (Online) F189 Q699

### NON-THESIS OPTION (ONLINE)

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

Code	Title	Credit Hours
<b>Required Courses</b>		
Concentration coursework		30

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

**Bachelor of Science in Architectural Engineering accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the General Criteria and the Architectural 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 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 Architectural 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
		Choose one of the following:	4	MATH 2924	Differential and Integral Calculus II <sup>1</sup>	4
	GEOL 1114	Physical Geology for Science and Engineering Majors ( Core II-Lab )		PHYS 2514	General Physics for Engineering and Science Majors ( Core II )	4
		MATH (calculus or above)		ARCH 1263	Methods II - Pattern of Architecture	3
		Basic Science Elective		CEES 1111	Exploring CEES	1
	MATH 1914	Differential and Integral Calculus I ( Core I ) <sup>1</sup>	4			
	ARCH 2363	Materials and Form	3			
	ENGR 1413	Pathways to Engineering Thinking ( Core V-FYE ) <sup>2</sup>	3			
	<b>CREDIT HOURS</b>	<b>17</b>		<b>CREDIT HOURS</b>	<b>15</b>	
SOPHOMORE	ARCH 2243	History of the Built Environment I ( Core IV: Western Culture )	3	CHEM 1315	General Chemistry ( Core II-Lab ) <sup>4</sup>	5
	MATH 2934	Differential and Integral Calculus III <sup>1</sup>	4	ENGR 2002	Professional Responsibilities and Skills of Engineers and Scientists	2
	PHYS 2524	General Physics for Engineering and Science Majors	4	MATH 3113	Introduction to Ordinary Differential Equations	3
	CEES 1000	CEES Seminar <sup>3</sup>	0	CEES 1000	CEES Seminar <sup>3</sup>	0
	CEES 2213	CADD Fundamentals	3	CEES 2153	Mechanics of Materials	3
	CEES 2113	Statics	3	CEES 2223	Fluid Mechanics	3
		<b>CREDIT HOURS</b>	<b>17</b>		<b>CREDIT HOURS</b>	<b>16</b>
JUNIOR	AME 2213	Thermodynamics	3	AME 3173	Heat Transfer	3
	CEES 1000	CEES Seminar <sup>3</sup>	0	CEES 1000	CEES Seminar <sup>3</sup>	0
	CEES 3263	Introduction to Dynamics for Architectural and Civil Engineers	3	CEES 3403	Materials	3
	CEES 3363	Soil Mechanics	3	CEES 3663	Structural Design - Steel I	3
	CEES 3361	Soil Mechanics Laboratory	1	CEES 4113	Building Lighting and Electrical Systems	3
	CEES 3413	Structural Analysis I	3	CEES 3453	Introduction to Construction Management	3
	ENGR 2431	Electrical Circuits	1	ENGR 3401	Engineering Economics	1
	P SC 1113	American Federal Government ( Core III )	3			
	<b>CREDIT HOURS</b>	<b>17</b>		<b>CREDIT HOURS</b>	<b>16</b>	
SENIOR	AME 4653	Air Conditioning Systems	3		Choose one of the following:	3
	CEES 1000	CEES Seminar <sup>3</sup>	0	ANTH 4623	Approaches to Cross-Cultural Human Problems ( Core IV-World Culture )	
	CEES 3673	Structural Design - Concrete I	3		Approved substitute (Core IV-World Culture) <sup>6</sup>	
		CEES Professional Elective <sup>5,9</sup>	3	CEES 1000	CEES Seminar <sup>3</sup>	0
	CEES 4753	Structural Design - Wood <sup>9</sup>	3	CEES 4333	Foundation Engineering <sup>9</sup>	3
	CEES 4991	Introduction to AE Capstone	1	CEES 4993	Architecture Engineering Capstone	3
	HIST 1483 or HIST 1493	United States to 1865 ( Core IV ) or United States, 1865 to the Present	3		Approved Elective: Social Science (Core III) <sup>6</sup>	3
					Approved Elective: Artistic Forms (Core IV) <sup>6</sup>	3
	<b>CREDIT HOURS</b>	<b>16</b>		<b>CREDIT HOURS</b>	<b>15</b>	
FIFTH YEAR		CEES Concentration course	3		Choose one of the following: <sup>7</sup>	1-3
		CEES Concentration course	3	CEES 5021	Technical Communications	
		CEES Concentration course or Graduate-level Elective <sup>8</sup>	3		Graduate-level Elective or CEES Concentration course <sup>8</sup>	
		CEES Concentration course of Graduate-level Elective <sup>8</sup>	3		Choose one of the following: <sup>7</sup>	3-5
				CEES 5980	Research for Master's Thesis	
					CEES Graduate-level Elective or CEES Concentration course <sup>8</sup>	
					CEES Graduate-level Elective or CEES Concentration course <sup>7,8</sup>	3
	<b>CREDIT HOURS</b>	<b>12</b>		<b>CREDIT HOURS</b>	<b>9</b>	

<sup>1</sup> MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934.

<sup>2</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>3</sup> Students must complete a minimum of four semesters of CEES 1000.

<sup>4</sup> CHEM 1315 can be substituted with CHEM 1335 (Fall only).

<sup>5</sup> Professional Elective can be chosen from any 3000-level or higher course in CEES

<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> Depending on which concentration students have chosen for the masters, they must choose either on-campus thesis option, on-campus non-thesis option, or online non-thesis option. The on-campus thesis students will take CEES 5021, CEES 5980 (5-credit hours), and one 3-credit hour graduate level elective. The on-campus non-thesis students will take three, 3-credit hour graduate level electives. The online non-thesis students will take three, 3-credit hour required concentration courses.

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

4 Requirements for the Bachelor of Science/Master of Science

- 9 Shared courses: 3-9 credit hours may count towards both the bachelors and masters degrees. If less hours are shared, total hours for the degree will increase. See concentration requirements for more information on shared course options.

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.

### CONCENTRATION REQUIREMENTS

Shared Hours: Accelerated students may dual count 3-9 hours of coursework with graduate credit between the BS/MS. If less hours are shared, then the total hours for the degree will increase.

### THESIS/NON-THESIS OPTIONS

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

• **Geotechnical Engineering F188 Q282**

Code	Title	Credit Hours
<b>Core Courses</b>		
CEES 4333	Foundation Engineering <sup>1</sup>	3
CEES 5343	Advanced Soil Mechanics	3
CEES 5433	In-Situ Soil Testing	3
<b>Writing Requirement (thesis students only):</b>		
CEES 5021	Technical Communications	1
<b>Elective Courses</b>		
15 hours for thesis students. 21 hours for non-thesis students. Choose from a list of MSCE electives maintained by the department and approved by the Graduate College. <sup>1</sup>		
<b>Thesis Research (thesis students only)</b>		
5 hours CEES 5980 Research for Master's Thesis		5

<sup>1</sup> ArchE Accel BS can share (9 hours) CEES 4333, CEES 4753, and one professional elective as MS electives.

### NON-THESIS OPTION (ONLINE)

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

• **Geotechnical Engineering (Online) F189 Q283**

Code	Title	Credit Hours
<b>Core Courses</b>		
ENGR 4223	Fundamentals of Project Management <sup>1</sup>	3
CEES 5653	Advanced Mechanics of Materials	3
ENGR 4013	Leadership and Management for Engineers	3
CEES 4333	Foundation Engineering	3
CEES 5443	Unsaturated Soil Mechanics	3
CEES 5353	Introduction to Soil Dynamics	3
CEES 5693	Structural Design of Pavements	3
CEES 5323	Geosynthetics	3
CEES 5413	Soil-Structure Interaction	3
CEES 5343	Advanced Soil Mechanics	3

<sup>1</sup> ArchE Accel. BS can share (6 hours) CEES 4333 and one professional elective from MS required courses.

### THESIS/NON-THESIS OPTIONS

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

• **Structural Engineering F188 Q634**

Code	Title	Credit Hours
<b>Core Courses</b>		
Take one course from each of the following groups:		
CEES 4663	Introduction to Matrix Methods in Structural Analysis	3
or CEES 5683	Dynamics of Structures	
or CEES 5763	Introduction to Finite Element Method	
or AME 5763	Introduction to the Finite Element Method	
CEES 5653	Advanced Mechanics of Materials	3
or CEES 5663	Structural Analysis II	
CEES 5773	Structural Design--Steel II	3
or CEES 5783	Structural Design--Concrete II	
or CEES 5793	Design of Prestressed Concrete Structures	
<b>Writing Requirement (thesis students only)</b>		
CEES 5021	Technical Communications	1
<b>Elective Courses</b>		
15 hours for the thesis completion track. 21 hours for the non-thesis completion track. Choose from a list of MSCE electives maintained by the department and approved by the Graduate College. <sup>1</sup>		
<b>Thesis Research (thesis students only)</b>		
5 hours of CEES 5980 Research for Master's Thesis		5

<sup>1</sup> ArchE Accel BS can share (9 hours) CEES 4333, CEES 4753, and one professional elective as MS electives.

### NON-THESIS OPTION (ONLINE)

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

• **Structural Engineering (Online) F189 Q635**

Code	Title	Credit Hours
ENGR 4223	Fundamentals of Project Management	3
CEES 5653	Advanced Mechanics of Materials	3
ENGR 4013	Leadership and Management for Engineers	3
CEES 4333	Foundation Engineering <sup>1</sup>	3
CEES 5793	Design of Prestressed Concrete Structures	3
CEES 4753	Structural Design - Wood <sup>1</sup>	3
CEES 5783	Structural Design--Concrete II	3
CEES 5773	Structural Design--Steel II	3
CEES 5413	Soil-Structure Interaction	3
CEES 5683	Dynamics of Structures	3

<sup>1</sup> ArchE Accel. BS can share (9 hours) CEES 4333, CEES 4753, and one professional elective from MS required courses.

### NON-THESIS OPTION (ONLINE)

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

• **Transportation Engineering (Online) F189 Q658**

Code	Title	Credit Hours
<b>Core Courses <sup>1</sup></b>		
ENGR 4223	Fundamentals of Project Management	3
CEES 5653	Advanced Mechanics of Materials	3
ENGR 4013	Leadership and Management for Engineers	3
GIS 5013	Fundamentals of Geographic Information Systems	3
CEES 5523	Transportation Asset Management	3
CEES 5503	Highway Engineering	3
CEES 5693	Structural Design of Pavements	3
DSA 5013	Fundamentals of Engineering Statistical Analysis	3
CEES 5513	Traffic Engineering	3
CEES 5533	Multimodal Transportation	3

<sup>1</sup> ArchE Accel. BS can share (3 hours) one professional elective from MS required courses.

### THESIS/NON-THESIS OPTIONS

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

• **Water Resources Engineering F188 Q698**

Code	Title	Credit Hours
<b>Core Courses</b>		
CEES 4123	Open Channel Flow	3
CEES 5843	Hydrology	3
CEES 5853	Groundwater and Seepage	3
<b>Writing Requirement (thesis students only)</b>		
CEES 5021	Technical Communications	1
<b>Elective Courses</b>		
15 hours for thesis students. 21 hours for non-thesis students. Choose from a list of MSCE electives maintained by the department and approved by the Graduate College. <sup>1</sup>		
<b>Thesis Research (thesis students only)</b>		
5 hours CEES 5980 Research for Master's Thesis		5

<sup>1</sup> ArchE Accel BS can share (9 hours) CEES 4333, CEES 4753, and one professional elective as MS electives.

### NON-THESIS OPTION (ONLINE)

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

• **Water Resources Engineering (Online) F189 Q699**

Code	Title	Credit Hours
<b>Core Courses <sup>1</sup></b>		
ENGR 4223	Fundamentals of Project Management	3
CEES 5853	Groundwater and Seepage	3
ENGR 4013	Leadership and Management for Engineers	3
GIS 5013	Fundamentals of Geographic Information Systems	3
METR 5633	Hydrometeorology	3
CEES 5583	Water Law	3
CEES 4123	Open Channel Flow	3

6 Requirements for the Bachelor of Science/Master of Science

CEES 5373	Water Resources Systems Modeling	3
CEES 5843	Hydrology	3
CEES 5963	Water Security	3
or CEES 5813	Water Treatment, Reuse, and Health Impacts	

<sup>1</sup> ArchE Accel. BS can share (3 hours) one professional elective from MS required courses.