

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

Academic Year
For Students Entering the Oklahoma State System for Higher Education <b>Summer 2023 through Spring 2024</b>

General Requirements	
Minimum Total Credit Hours .....	123
<b>Minimum Retention/Graduation Grade Point Averages:</b>	
Overall - Combined and OU .....	2.00
Major - Combined and OU .....	2.00
Curriculum - Combined and OU .....	2.00

Program
<b>Mechanical Engineering (Standard)</b>
<b>B675</b>
Bachelor of Science

OU encourages students to complete at least 31 hours of applicable coursework each year to have the opportunity to graduate in 4 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)

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	
COMM 3513	Intercultural Communication ( 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>		
Choose one course <sup>3</sup>		3
<b>Total Credit Hours</b>		<b>40-50</b>

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

<sup>2</sup>Major support requirements that also satisfy University General Education requirements.

<sup>3</sup>To be chosen from the University-Wide General Education Approved Course List. Three of these hours must be upper-division (3000-4000).

### 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 Mechanical Engineering accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the General Criteria and the Mechanical and Similarly Named Engineering Programs Program Criteria.**

**In order to progress into 2nd year courses in AME, students must successfully complete (grade C or better) MATH 1914; MATH 2924; PHYS 2514 and CHEM 1315 with 3.0 Combined Retention GPA, and possess a minimum 3.0 Combined Retention GPA in 24 or more credit hours.**

### MAJOR REQUIREMENTS

Code	Title	Credit Hours
<b>Required Courses</b>		
AME 2113	Statics	3
AME 2213	Thermodynamics	3
AME 2402	Engineering Computing	2
AME 2303	Materials, Design and Manufacturing Processes	3
AME 2533	Dynamics	3
AME 3112	Solid Mechanics Lab	2
AME 3143	Solid Mechanics	3
AME 3153	Fluid Mechanics	3
AME 3723	Numerical Methods For Engineering Computation	3
AME 3103	Interactive Engineering Design Simulation	3
AME 3122	Heat Transfer and Fluid Mechanics Lab	2
AME 3173	Heat Transfer	3
AME 3353	Design of Mechanical Components	3
AME 3363	Design of Thermal-Fluid Systems	3
AME 4163	Principles of Engineering Design	3
AME 4553	Design Practicum	3
<b>Experimental Elective</b>		
Choose a 2 hour experimental elective from the list of approved courses maintained by the department <sup>1</sup>		2
<b>Total Credit Hours</b>		<b>47</b>

<sup>1</sup>A list of Technical, Experimental, and Engineering Science electives can be found at: <https://www.ou.edu/coe/ame/undergraduate/ame-current>

### 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
PHYS 3223	Modern Physics for Engineers	3
<b>Engineering Science Elective</b>		
Choose 6 hours of Engineering science electives from the list of approved courses maintained by the department <sup>1</sup>		6
<b>Technical Elective</b>		
Choose 6 hours of technical electives from the list of approved courses maintained by the department <sup>1</sup>		6
<b>Additional College Requirements</b>		
ENGR 1411	Pathways to Engineering Thinking <sup>2</sup>	1
ENGR 2431	Electrical Circuits	1
ENGR 2531	Electrical Circuits II	1
ENGR 3431	Electromechanical Systems	1
ENGR 2002	Professional Development	2
<b>Total Credit Hours</b>		<b>36</b>

<sup>1</sup>A list of Technical, Experimental, and Engineering Science electives can be found at: <https://www.ou.edu/coe/ame/undergraduate/ame-current>

<sup>2</sup>Engineering transfer students may take ENGR 3511 in place of ENGR 1411.

More information in the catalog: (<http://ou-public.courseleaf.com/gallogly-engineering/aerospace-mechanical-engineering/mechanical-engineering-standard-bachelor-science/>).

## SUGGESTED SEMESTER PLAN OF STUDY

Bachelor of Science in Mechanical Engineering accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the General Criteria and the Mechanical and Similarly Named Engineering Programs 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. AME courses are sequential and usually offered only in the semester shown; note prerequisites.

- **DEPARTMENTAL PROGRESSION REQUIREMENTS:** In order to progress into 2nd year courses in AME, students must successfully complete (grade C or better) MATH 1914; MATH 2924; PHYS 2514 and CHEM 1315 with 3.0 Combined Retention GPA, and possess a minimum 3.0 Combined Retention GPA in 24 or more credit hours. AP credit is acceptable for any of these required courses.

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.

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.

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	MATH 2924	Differential and Integral Calculus II <sup>2</sup>	4
	MATH 1914	Differential and Integral Calculus I ( Core I ) <sup>2</sup>	4	PHYS 2514	General Physics for Engineering and Science Majors ( Core II )	4
	ENGR 1411	Pathways to Engineering Thinking <sup>3</sup>	1		Approved Elective: First-Year Experience (Core V) <sup>4</sup>	3
	HIST 1483 or HIST 1493	United States to 1865 ( Core IV ) or United States, 1865 to the Present	3		REFER TO DEPARTMENTAL PROGRESSION REQUIREMENTS LISTED AT THE TOP OF THIS PAGE	
	<b>CREDIT HOURS</b>	<b>16</b>		<b>CREDIT HOURS</b>	<b>14</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	AME 2303	Materials, Design and Manufacturing Processes	3
	AME 2113	Statics	3	AME 2533	Dynamics	3
	AME 2213	Thermodynamics	3	ENGR 2431	Electrical Circuits	1
	AME 2402	Engineering Computing	2	ENGR 2531	Electrical Circuits II	1
				ENGR 3431	Electromechanical Systems	1
				Approved Elective: Social Science (Core III) <sup>4</sup>	3	
	<b>CREDIT HOURS</b>	<b>16</b>		<b>CREDIT HOURS</b>	<b>15</b>	
JUNIOR	AME 3112	Solid Mechanics Lab	2	AME 3103	Interactive Engineering Design Simulation	3
	AME 3143	Solid Mechanics	3	AME 3122	Heat Transfer and Fluid Mechanics Lab	2
	AME 3153	Fluid Mechanics	3	AME 3173	Heat Transfer	3
	AME 3723	Numerical Methods For Engineering Computation	3	AME 3353	Design of Mechanical Components	3
	ENGR 2002	Professional Development	2	P SC 1113	American Federal Government ( Core III )	3
		Approved Technical Elective <sup>5</sup>	3		Approved Technical Elective <sup>5</sup>	3
	<b>CREDIT HOURS</b>	<b>16</b>		<b>CREDIT HOURS</b>	<b>17</b>	
SENIOR	PHYS 3223	Modern Physics for Engineers	3	AME 4553	Design Practicum	3
	AME 3363	Design of Thermal-Fluid Systems	3	COMM 3513	Intercultural Communication ( or an advisor approved substitution) (Western Culture - Core IV ) <sup>4</sup>	3
	AME 4163	Principles of Engineering Design	3	ANTH 4623	Approaches to Cross-Cultural Human Problems ( (or an advisor-approved substitution) (World Culture - Core IV ) <sup>4</sup>	3
		Approved Engineering Science Elective <sup>5</sup>	3		Approved Engineering Science Elective <sup>5</sup>	3
		Approved Experimental Elective <sup>5</sup>	2		Approved Elective: Artistic Forms (Core IV) <sup>4</sup>	3
	<b>CREDIT HOURS</b>	<b>14</b>		<b>CREDIT HOURS</b>	<b>15</b>	

<sup>1</sup> CHEM 1315 can be substituted with CHEM 1335 (Fall only).

<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> Engineering transfer students may take ENGR 3511 in place of ENGR 1411.

<sup>4</sup> To be chosen from the University-Wide General Education Approved Course List. Three of these hours must be upper-division (3000-4000).

<sup>5</sup> A list of Technical, Experimental, and Engineering Science electives can be found at: <https://www.ou.edu/coe/ame/undergraduate/ame-current>