

**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 2022 through Spring 2023</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
Total Credit Hours		40-50

<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.

**ACCREDITED BY THE ENGINEERING ACCREDITATION COMMISSION OF ABET, <https://www.abet.org>**

**In order to progress to Sophomore level courses in AME, students must attain a combined GPA of 3.0 or higher in the four courses: MATH 1914, MATH 2924, PHYS 2514, and CHEM 1315 as well as a combined GPA of 3.0 or higher in 24 or more credit hours. AP credit is acceptable for any of the required courses.**

**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
Total Credit Hours		47

<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	Freshman Engineering Experience <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
Total Credit Hours		36

<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

Accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>

- DEPARTMENTAL PROGRESSION REQUIREMENTS: In order to progress to Sophomore level courses in AME, students must attain a combined GPA of 3.0 or higher in the four courses: MATH 1914, MATH 2924, PHYS 2514, and CHEM 1315 as well as a combined GPA of 3.0 or higher in 24 or more credit hours. AP credit is acceptable for any of the required courses.

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.

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	Freshman Engineering Experience <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
<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>