

Mechanical Engineering (Standard), Bachelor of Science in Mechanical Engineering/Master of Science 1

## REQUIREMENTS FOR THE BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING/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 2019 through Spring 2020</b>

General Requirements	
Minimum Total Credit Hours.....	145-149
<b>Minimum Retention/Graduation Grade Point Averages:</b>	
Overall - Combined and OU .....	3.25
Major - Combined and OU.....	3.25

Program
<b>Mechanical Engineering (Standard)/ Mechanical Engineering</b> A675/F675 Bachelor of Science in Mechanical Engineering/Master of Science

OU encourages students to complete at least 29 hours of applicable coursework each year to have the opportunity to graduate in 5 years.

**B.S. Portion of the Program Accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>**

**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.**

**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.**

**Approval for admission to the accelerated BS/MS program must be initiated at the beginning of the second semester of the junior year. 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 Mechanical Engineering.**

Year	FIRST SEMESTER		Hours	SECOND SEMESTER		Hours
<b>FRESHMAN</b>	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 ) <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	P SC 1113	American Federal Government ( Core III )	3
	HIST 1483 or HIST 1493	United States, 1492 to 1865 ( Core IV ) or United States, 1865 to the Present	3			
	<b>CREDIT HOURS</b>		<b>16</b>	<b>CREDIT HOURS</b>		<b>14</b>
<b>SOPHOMORE</b>	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 (Core II)	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>
<b>JUNIOR</b>	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	ENGL 3153	Technical Writing	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>
<b>SENIOR</b>	PHYS 3223	Modern Physics for Engineers	3	AME 4553	Design Practicum ( Capstone )	3
	AME 3363	Design of Thermal-Fluid Systems	3		AME Graduate-level Elective <sup>6</sup>	3
	AME 4163	Principles of Engineering Design	3	COMM 3513	Intercultural Communication ( or an advisor approved substitution ) (Western Civ. & Culture - Core IV) <sup>4</sup>	3
		AME Graduate-level Elective <sup>6</sup>	3	ANTH 4623	Approaches to Cross-Cultural Human Problems ( or an advisor-approved substitution ) (Non-Western Culture - Core IV) <sup>4</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>
<b>FIFTH YEAR</b>		Choose one of the following: <sup>6</sup>	3		AME Graduate-level Elective <sup>6</sup>	3
	AME 5573	Advanced Engineering Analysis I			AME Graduate-level Elective <sup>6</sup>	3
		MATH Graduate-level Elective			AME Graduate-level Elective <sup>6</sup>	3
		AME Graduate-level Elective <sup>6</sup>	3		Choose one of the following: <sup>7</sup>	3-4
		AME Graduate-level Elective <sup>6</sup>	3	AME 5980	Research for Master's Thesis ( thesis option only )	
	AME 5980	Research for Master's Thesis ( Thesis Option ) AME Graduate-level Elective (Non-Thesis Option) <sup>7</sup>	2-3		AME Graduate-level Elective <sup>6</sup>	
	<b>CREDIT HOURS</b>		<b>11-12</b>	<b>CREDIT HOURS</b>		<b>12-13</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 12 hours must be upper-division (3000-4000). See list in the Class Schedule.

<sup>5</sup> A list of Technical, Experimental, and Engineering Science electives is available in the AME Office, FH 212.

<sup>6</sup> Fourth and fifth year graduate electives must satisfy MS in mechanical engineering requirements.

<sup>7</sup> Dependent upon whether a student chooses the thesis or non-thesis option. Non-thesis option additionally requires: **AME Graduate-level Elective** (3 hrs.) and AME 5990 (3 hrs.) to be taken in the Summer between the Senior and the Fifth Year, and **Comprehensive Exam** to be taken in the last semester of study.

**Two college-level courses in a single foreign language are required; this may be satisfied by successful completion of 2 years in a single foreign language in high school.**

**Students who must take foreign language at the University will have an additional 6-10 hours of coursework.**

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