

# OSU - College of Engineering, Architecture & Technology

## Mechanical Engineering - Pre-Medical Option

2024-2025

REFER TO THE CATALOG TO CONFIRM  
PREREQUISITE COURSES

Semester 1, 19 credit hours	Semester 2, 17 credit hours	Semester 3, 19 credit hours	Semester 4, 16 credit hours
<p>UNIV 1111 First Yr Seminar</p> <p>CHEM 1314 or Adv Placement</p> <p>CHEM 1515 Chemistry II</p> <p>ENSC 2213 ENSC 3313</p> <p>ENGR 1332 CAD/SolidWorks For MAE</p> <p>MATH 1813 ALEKS &gt;=75</p> <p>MATH 2144 Calc 1</p> <p>MATH 2153 PHYS 2014 ENSC 2113 ENSC 2213</p> <p><sup>1</sup>ENGL 1113 Comp 1</p> <p>ENGL 1213</p> <p>BIOL 1113 + 1111 Biology LEC+LAB</p> <p>BIOL 1604</p>	<p>ENGR 1412 Intro Eng Computer Prgm</p> <p>MAE 3403</p> <p><sup>2</sup>ENGR 2421 Data Acq Ctrl Lab</p> <p>MAE 3333<sub>cc</sub> MAE 3724 MAE 4344</p> <p>MATH 2144</p> <p>PHYS 2014 Physics 1</p> <p>ENSC 2113 ENSC 2213 PHYS 2114 MAE 3013</p> <p>MATH 2144</p> <p>MATH 2153 Calc 2</p> <p>MATH 2163 MATH 2233 ENSC 2613 MAE 3333 IEM 3503</p> <p>ENGL 1113</p> <p><sup>1</sup>ENGL 1213 Comp 2</p> <p>BIOL 1114</p> <p>BIOL 1604 Animal Biology</p> <p>MICR 3303</p>	<p>MATH 2144 PHYS 2014</p> <p>ENSC 2113 Statics</p> <p>ENSC 2123 ENSC 2143 MAE 3333 MAE 3153<sub>cc</sub></p> <p>CHEM 1314, 1414, or 1515 MATH 2144 PHYS 2014</p> <p>ENSC 2213 Thermo</p> <p>MAE 3153<sub>cc</sub></p> <p>PHYS 2014</p> <p>PHYS 2114 Physics 2</p> <p>MATH 2153</p> <p>MATH 2163 Calc 3</p> <p>MATH 2153</p> <p>MATH 2233 Diff Eq</p> <p>MAE 3013</p> <p>CHEM 1515</p> <p>CHEM 3053 Organic Chem</p> <p>CHEM 3153</p>	<p>ENSC 2113</p> <p>ENSC 2123 Dynamics</p> <p>MAE 3403 MAE 3724</p> <p>ENSC 2113</p> <p>ENSC 2143 Strengths</p> <p>MAE 3324</p> <p>ENSC 2113 MATH 2153 ENGR 2421<sub>cc</sub></p> <p>MAE 3333 Fluids</p> <p>MAE 3233<sub>cc</sub></p> <p>ENSC 2113<sub>cc</sub> ENSC 2213<sub>cc</sub></p> <p>MAE 3153 Intro ME Design</p> <p>MAE 3324 MAE 3524</p> <p>See note 2</p> <p>Engineering Science Laboratory</p> <p>MAE 4344</p> <p>CHEM 3053</p> <p>CHEM 3153 O Chem 2</p> <p>CHEM 3112<sub>cc</sub></p>

**Summary of Graduation and School Requirements:** Please consult Degree Requirements published in official University Catalog for specific course letter grade requirements Graduation Requirements.

- If a "B" or better is earned in ENGL 1113 or 1313, ENGL 3323 may be substituted for ENGL 1213 or 1413 (per Academic Regulation 3.5)
- In order to fulfill the ENSC Lab requirement you must complete ENGR 2421 and select two labs from list found on published Degree Requirements in University Catalog.

PLEASE NOTE: The following courses are suggested, but not required:

BIOC 3653, BIOL 3023, BIOL 3204, BIOL 4134. CHEM 1314 is recommended along with CHEM1515 to meet the Oklahoma Medical Schools' requirement for 9 hours of inorganic chemistry

135 hours		
Required for Course ABC	Course ABC	Course ABC is required for the following courses

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PREREQUISITE COURSES

Semester 5, 15 credit hours	Semester 6, 18 credit hours	Semester 7, 15 credit hours	Semester 8, 16 credit hours
MAE 3333 <sub>cc</sub> <b>MAE 3233 Heat Transfer</b> MAE 3524  #=- U 1314, 1414, or 1515 <b>ENSC 3313 Materials Science</b> MAE 3324  MATH 2233 PHYS 2014 <b>MAE 3013 Engr Analysis</b> MAE 3403 MAE 3724  MATH 2153 <b>ENSC 2613 Circuits</b> MAE 3724  See note 2 <b>Engineering Science Laboratory</b> MAE 4344  CHEM 3153 <sub>cc</sub> <b>CHEM 3112 Organic Chem Lab</b>	ENSC 2213 <b>MAE 3524 Thermal Fluids Design</b> MAE 4344 Various Electives MAE 3153 MAE 3233 MAE 3333  MAE 3153 <b>MAE 3324 Mech Des 1</b> MAE 4344 Various Electives ENSC 3313 ENSC 2143  ENGR 2421 <b>MAE 3724 Systems Analysis</b> MAE 3403 <sub>cc</sub> MAE 4344 Various Electives ENSC 2123 MAE 3013  ENGR 1412 <b>MAE 3403 Computer Methods</b> Various Electives ENSC 2123 MAE 3013 MAE 3724 <sub>cc</sub>  BIOL 1604 <b>MICR 3033 Molecular Bio</b> CHEM 1515	Prereqs Vary by Course <b>3 MAE CAT I Elective</b>  Prereqs Vary by Course <b>5 MAE Elective</b>  MATH 2153 <b>IEM 3503 Engr Econ</b>  <b>POLS 1113 Am Govt</b>  <b>6 S Credit PSYC or SOC</b>	MAE 3524 <b>4 MAE 4344 Senior Design Project</b> MAE 3324 MAE 3724 ENGR 2421 See notes 2 and 4  Prereqs Vary by Course <b>5 MAE Elective</b>  <b>HIST 1103 or 1483 or 1493 Am History</b>  <b>6 ENGL (H)</b>  <b>6 PHIL (H)</b>

- If a "B" or better is earned in ENGL 1113 or 1313, ENGL 3323 may be substituted for ENGL 1213 or 1413 (per Academic Regulation 3.5)
- In order to fulfill the ENSC Lab requirement you must complete ENGR 2421 and select two labs from list found on published Degree Requirements in University Catalog.
- Category (CAT) I - MAE 4243, 4263, 4353, 4363, 4513, 4623, 4703, 4713, or 4723 (See Catalog for Prerequisites). For AERS dual degree CAT I is equal to MAE 4243 or 4513.
- Category II - MAE 4344 or MAE 4354 (See Catalog for Prerequisites).
- MAE Elective (6 hours) - MAE 3033, 3123, 3223, 3253, 3293, 4003, 4010, 4020, 4053, 4063, 4273, 4313, 4333, 4583, 4733 or courses in the Category I listed above, but not used to satisfy the category requirement. (See Catalog for Prerequisites) For AERS dual degree MAE Elective is equal to 3253, 3293.
- 3 hours of ENGL, 3 hours of PHIL and 3 hour (SOC or PSYC). You are also required to meet the Board of Regents Diversity (D) and International (I) attributes by completing one course in each dimension. These attributes can be combined with your (H) and (S) requirements.

**6 International Attribute (I)**

**6 Diversity Attribute (D)**

# MAE ELECTIVE COURSES

*\*The listed courses are all electives in the MAE Catalog, courses offered vary by campus, semester, and faculty availability, please speak with your academic advisor about course availability.*

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Category I Electives		MAE Electives		MAE Electives	
MAE 3153 MAE 3524	MAE 4263 Energy Conversion Systems	ENGR 1332 MAE 3013 MAE 3324	MAE 3033 Design of Machines and Mechanisms	ENSC 3313	MAE 4583 Corrosion
MAE 3324	MAE 4353 Mechanical Design II	ENSC 3313	MAE 3123 Manufacturing Processes	MAE 3153 MAE 3403 ENGR 2421 ENSC 2411	MAE 4733 Mechatronics Design
MAE 3324 ENSC 2613	MAE 4363 Advanced Methods in Design	MAE 3153	MAE 3223 Thermodynamics II	<b>Aerospace MAE Electives</b>	
MATH 2163 MAE 3153 MAE 3324	MAE 4623 Biomechanics	MAE 3403 (MAE 3724 or ECEN 3723)	MAE 4003 Introduction to Autonomous Systems	MATH 2233 MAE 3293	MAE 3253 Applied Aerodynamics and Performance
MAE 3524	MAE 4703 Design of Indoor Environmental Systems	Consent of Instructor and Advisor	MAE 4010 MAE Engineering Special Project	MATH 2233 MAE 3333	MAE 3293 Fundamentals of Aerodynamics
MAE 3524	MAE 4713 Thermal Systems Realization	(MAE 3724 or ECEN 3723)	MAE 4053 Automatic Control Systems	MAE 3253 ENGR 2421 ENSC 2411 <sup>cc</sup>	MAE 4213 Spacecraft Design
MAE 3524	MAE 4723 Refrigeration Systems Design	MAE 3724	MAE 4063 Mechanical Vibrations		
<b>Aerospace Category I Electives</b>		MAE 3333 ENGR 2421 ENSC 3231 <sup>cc</sup>	MAE 4273 Experimental Fluid Dynamics		
MAE 3153 MAE 3293	MAE 4243 Aerospace Propulsion and Power	ENSC 3313 MAE 3153	MAE 4313 Advanced Processing of Engineered Materials		
MAE 3324 MAE 3403 MAE 3253	MAE 4513 Aerospace Structures	ENSC 3313 ENGR 2421	MAE 4333 Mechanical Metallurgy		