

# MECHATRONICS AND ROBOTICS, BS

**Requirements for Students Matriculating in or before Academic Year 2026-2027.** Learn more about University Academic Regulation 3.1 (<https://catalog.okstate.edu/university-academic-regulations/#matriculation>).

**Minimum average technical grade-point-average: 2.0**

**Total Hours: 121**

| Code                                                                                                                                                                                                                                                                         | Title                                                                         | Hours     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------|
| <b>General Education Requirements</b>                                                                                                                                                                                                                                        |                                                                               |           |
| <i>English Composition</i>                                                                                                                                                                                                                                                   |                                                                               |           |
| See Academic Regulation 3.5 ( <a href="https://catalog.okstate.edu/university-academic-regulations/#english-composition">https://catalog.okstate.edu/university-academic-regulations/#english-composition</a> )                                                              |                                                                               |           |
| ENGL 1113                                                                                                                                                                                                                                                                    | Composition I                                                                 | 3         |
| or ENGL 1313                                                                                                                                                                                                                                                                 | Critical Analysis and Writing I                                               |           |
| ENGL 3323                                                                                                                                                                                                                                                                    | Technical Writing                                                             | 3         |
| <i>American History &amp; Government</i>                                                                                                                                                                                                                                     |                                                                               |           |
| HIST 1103                                                                                                                                                                                                                                                                    | Survey of American History                                                    | 3         |
| or HIST 1483                                                                                                                                                                                                                                                                 | American History to 1865 (H)                                                  |           |
| or HIST 1493                                                                                                                                                                                                                                                                 | American History Since 1865 (DH)                                              |           |
| POLS 1113                                                                                                                                                                                                                                                                    | American Government                                                           | 3         |
| <i>Quantitative Thought &amp; Logical Reasoning (Q)</i>                                                                                                                                                                                                                      |                                                                               |           |
| MATH 2144                                                                                                                                                                                                                                                                    | Calculus I (Q)                                                                | 4         |
| MATH 2153                                                                                                                                                                                                                                                                    | Calculus II (Q)                                                               | 3         |
| <i>Humanities (H)</i>                                                                                                                                                                                                                                                        |                                                                               |           |
| Courses designated (H)                                                                                                                                                                                                                                                       |                                                                               | 3         |
| Course designated (DH)                                                                                                                                                                                                                                                       |                                                                               | 3         |
| <i>Reasoning in the Natural Sciences (N)</i>                                                                                                                                                                                                                                 |                                                                               |           |
| Must include one Laboratory-Based Inquiry (L) course                                                                                                                                                                                                                         |                                                                               |           |
| PHYS 2014                                                                                                                                                                                                                                                                    | University Physics I (LN)                                                     | 4         |
| PHYS 2114                                                                                                                                                                                                                                                                    | University Physics II (LN)                                                    | 4         |
| CHEM 1314                                                                                                                                                                                                                                                                    | Chemistry I (LN)                                                              | 4         |
| or CHEM 1414                                                                                                                                                                                                                                                                 | General Chemistry for Engineers (LN)                                          |           |
| <i>Exploring Society &amp; Human Behavior (S)</i>                                                                                                                                                                                                                            |                                                                               |           |
| Courses designated (S)                                                                                                                                                                                                                                                       |                                                                               | 3         |
| <i>Diversity (D)</i>                                                                                                                                                                                                                                                         |                                                                               |           |
| Courses designated (D)                                                                                                                                                                                                                                                       |                                                                               |           |
| May be paired with another designated course                                                                                                                                                                                                                                 |                                                                               |           |
| <i>Global Cultural Competency (G)</i>                                                                                                                                                                                                                                        |                                                                               |           |
| Courses designated (G)                                                                                                                                                                                                                                                       |                                                                               | 3         |
| <b>Additional General Education</b>                                                                                                                                                                                                                                          |                                                                               |           |
| Additional general education credit hours may be required to meet the total 40-hour minimum of general education credit if courses carry more than one general education designation and can be used to meet multiple general education designation hour requirements above. |                                                                               |           |
| Courses designated (Q), (H), (N), (S), (D), (G), or (F).                                                                                                                                                                                                                     |                                                                               | 0         |
| <b>Hours Subtotal</b>                                                                                                                                                                                                                                                        |                                                                               | <b>43</b> |
| <b>College/Departmental Requirements</b>                                                                                                                                                                                                                                     |                                                                               |           |
| UNIV 1111                                                                                                                                                                                                                                                                    | First Year Seminar (or other approved first year seminar course) <sup>1</sup> | 1         |

|                                     |                                                   |            |
|-------------------------------------|---------------------------------------------------|------------|
| MET 1123                            | Technical Drawing and Basic CAD                   | 3          |
| ENSC 2113                           | Statics                                           | 3          |
| ENSC 2123                           | Elementary Dynamics                               | 3          |
| or MET 3003                         | Dynamics                                          |            |
| ENSC 2141                           | Strength of Materials Lab                         | 1          |
| ENSC 2143                           | Strength of Materials                             | 3          |
| ENSC 2411                           | Electrical Science Lab                            | 1          |
| ENGR 2421                           | Engineering Data Acquisition Controls Lab         | 1          |
| ENSC 2613                           | Introduction to Electrical Science                | 3          |
| EET 2544                            | Pulse and Digital Techniques                      | 4          |
| EET 2633                            | Solid State Devices and Circuits I                | 3          |
| MET 2313                            | Fundamentals of Hydraulic Fluid Power             | 3          |
| MATH 2163                           | Calculus III                                      | 3          |
| MATH 2233                           | Differential Equations                            | 3          |
| <b>Hours Subtotal</b>               |                                                   | <b>35</b>  |
| <b>Major Requirements</b>           |                                                   |            |
| IEM 3503                            | Engineering Economic Analysis                     | 3          |
| MATH 3013                           | Linear Algebra (Q)                                | 3          |
| MATH 3583                           | Introduction to Mathematical Modeling             | 3          |
| EET 3303                            | Python Programming for Technology and Engineering | 3          |
| EET 4314                            | Elements of Control                               | 4          |
| MET 3803                            | Fundamentals of Mechatronics                      | 3          |
| MET 4223                            | Geometric Dimensioning and Tolerancing            | 3          |
| MERO 3373                           | Programmable Logic Controller Fundamentals        | 3          |
| MERO 4213                           | Industrial Robots                                 | 3          |
| MERO 4833                           | Senior Design                                     | 3          |
| MERO-related specialty <sup>2</sup> |                                                   | 9          |
| Controlled Electives <sup>3</sup>   |                                                   | 3          |
| <b>Hours Subtotal</b>               |                                                   | <b>43</b>  |
| <b>Total Hours</b>                  |                                                   | <b>121</b> |

<sup>1</sup> Minimum grade of "C".

<sup>2</sup> **MERO Related Specialty 9 hours across any of the following:**

**EET Related Specialty:** EET3123, EET 3423, EET 4803, EET 3253, EET 3003, ECEN 3513, 3613, 3723, 4503, EET 4314, EET 4654, EET 4903.

**MET Related Specialty:** MET 3343, MET 3353, MET 3413, MET 3423, MET 3433, MET 3453, MET 3543, MET 3573, MET 4003, MET 4023, MET 4033, MET 4050, MET 4113, MET 4173, MET 4203, MET 4303, MET 4313, MET 4713, MET 4723, MET 4733.

**Other Related Specialty:** IEM 3513, IEM 3013, ENSC 2213, ENSC 3233, ENSC 3313, MATH 3613, MATH 4263, MATH 4343, MATH 4513, MATH 4553, STAT 4033.

<sup>3</sup> A total of 3 credit hours from the following: Accounting, Astronomy, Biology, Chemistry, Computer Science, Engineering, Engineering Technology, Entrepreneurship and Emerging Enterprise, Finance, Geology, Legal Studies in Business, Management, Marketing, Mathematics, Physics and Statistics.

## Additional Requirements

- A grade of "C" or better is required in all courses with an analytical or natural science designation or engineering or engineering technology prefix.

- A grade of "C" or better is required for courses with the prefix EET/MET/MERO, and any course in physics and mathematics that is required in subsequent courses.

## **Additional State/OSU Requirements**

- At least: 60 hours at a four-year institution; 30 hours completed at OSU; 15 of the final 30 or 50% of the upper-division hours in the major field completed at OSU.
- Limit of: one-half of major course requirements as transfer work; one-fourth of hours earned by correspondence; 8 transfer correspondence hours.
- Students will be held responsible for degree requirements in effect at the time of matriculation and any changes that are made, so long as these changes do not result in semester credit hours being added or do not delay graduation.
- Degrees that follow this plan must be completed by the end of Summer 2032.