**ENGINEERING TECHNOLOGY: MECHATRONICS & ROBOTICS, MS**

Requirements for Students Matriculating in or before Academic Year 2023-2024. Learn more about Graduate College Academic Regulation 7.0 ([http://catalog.okstate.edu/graduate-college/#70](http://catalog.okstate.edu/graduate-college/#70)).

**Thesis Option**

**Total Hours: 30**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MERO 5013</td>
<td>Research Design &amp; Methodology</td>
<td>3</td>
</tr>
<tr>
<td>MERO 5023</td>
<td>Project Management</td>
<td>3</td>
</tr>
<tr>
<td>MERO 5033</td>
<td>Principles of Industrial and Process Safety</td>
<td>3</td>
</tr>
</tbody>
</table>

**Hours Subtotal** 9

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MERO 5113</td>
<td>Mechatronic Systems I</td>
<td>3</td>
</tr>
<tr>
<td>MERO 5123</td>
<td>Mechatronic Systems II</td>
<td>3</td>
</tr>
<tr>
<td>MERO 5213</td>
<td>Introduction to Robot Dynamics and Kinematics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Hours Subtotal** 9

**Electives**

Select 6 hours:

- MERO 5060 Emerging Topics in Engineering Technology
- MERO 5070 Directed Studies
- MERO 5133 Mechatronic System Hardware and Software Integration
- MERO 5313 Linear Control Systems for Mechatronics
- MERO 5323 Intelligent Control of Mechatronic Systems
- MERO 5413 Robotic Underwater Vehicles
- MERO 5423 Engineering Acoustics
- MERO 5433 Industrial Noise Control
- MERO 5513 Electrohydraulics
- MERO 5523 Electropneumatics
- MERO 5613 Smart Manufacturing for Mechatronics
- MERO 5633 Multiphysics Computational Modeling and Simulation
- MERO 5713 Advanced CAD for Electro-Mechanical Systems
- MERO 5723 Mechanism Design with CAD
- MERO 5733 Advanced Vibration for Electro-Mechanical Systems
- MAE 5433 Robotics, Kinematics, Dynamics and Control
- MAE 5483 Advanced Mechatronics Design
- ECEN 5233 Embedded Sensor Networks
- ECEN 5283 Computer Vision
- ECEN 5533 Modern Communication Theory

**Electives**

Select 6 hours:

- MERO 5060 Emerging Topics in Engineering Technology
- MERO 5070 Directed Studies
- MERO 5133 Mechatronic System Hardware and Software Integration
- MERO 5313 Linear Control Systems for Mechatronics
- MERO 5323 Intelligent Control of Mechatronic Systems
- MERO 5413 Robotic Underwater Vehicles
- MERO 5423 Engineering Acoustics
- MERO 5433 Industrial Noise Control
- MERO 5513 Electrohydraulics
- MERO 5523 Electropneumatics
- MERO 5613 Smart Manufacturing for Mechatronics
- MERO 5633 Multiphysics Computational Modeling and Simulation
- MERO 5713 Advanced CAD for Electro-Mechanical Systems
- MERO 5723 Mechanism Design with CAD

**Non-Thesis Option**

**Total Hours: 30**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MERO 5013</td>
<td>Research Design &amp; Methodology</td>
<td>3</td>
</tr>
<tr>
<td>MERO 5023</td>
<td>Project Management</td>
<td>3</td>
</tr>
<tr>
<td>MERO 5033</td>
<td>Principles of Industrial and Process Safety</td>
<td>3</td>
</tr>
</tbody>
</table>

**Hours Subtotal** 9

**Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MERO 5113</td>
<td>Mechatronic Systems I</td>
<td>3</td>
</tr>
<tr>
<td>MERO 5123</td>
<td>Mechatronic Systems II</td>
<td>3</td>
</tr>
<tr>
<td>MERO 5213</td>
<td>Introduction to Robot Dynamics and Kinematics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Hours Subtotal** 9

**Electives**

Select 12 hours (minimum 6 hours of MERO courses and 3 hours from ETM/IEM courses):

- MERO 5060 Emerging Topics in Engineering Technology
- MERO 5070 Directed Studies
- MERO 5133 Mechatronic System Hardware and Software Integration
- MERO 5313 Linear Control Systems for Mechatronics
- MERO 5323 Intelligent Control of Mechatronic Systems
- MERO 5413 Robotic Underwater Vehicles
- MERO 5423 Engineering Acoustics
- MERO 5433 Industrial Noise Control
- MERO 5513 Electrohydraulics
- MERO 5523 Electropneumatics
- MERO 5613 Smart Manufacturing for Mechatronics
- MERO 5633 Multiphysics Computational Modeling and Simulation
- MERO 5713 Advanced CAD for Electro-Mechanical Systems
- MERO 5723 Mechanism Design with CAD
- ECEN 5553 Telecommunications Systems
- ETM 5111 Introduction to Strategy, Technology and Integration
- ETM 5143 Strategic Decision Analysis for Engineering and Technology Managers
- ETM 5153 Foundations of Engineering Management
- ETM 5221 Engineering Teaming
- ETM 5241 Strategic Project Management
- ETM 5291 Failure Mode and Effects Analysis in Design
- ETM 5371 Ethics for Practicing Engineers
- ETM 5411 Engineering Economic Analysis
- IEM 5143 Reliability and Maintainability
- ETM 5461 Intellectual Property Management
MERO 5733  Advanced Vibration for Electro-Mechanical Systems

MAE 5433  Robotics, Kinematics, Dynamics and Control

or ECEN 5433  Robotics Kinematics, Dynamics and Control

MAE 5483  Advanced Mechatronics Design

or ECEN 5483  Advanced Mechatronics Design

ECEN 5233  Embedded Sensor Networks

ECEN 5283  Computer Vision

ECEN 5533  Modern Communication Theory

ECEN 5553  Telecommunications Systems

ETM 5111  Introduction to Strategy, Technology and Integration

ETM 5143  Strategic Decision Analysis for Engineering and Technology Managers

ETM 5153  Foundations of Engineering Management

ETM 5221  Engineering Teaming

ETM 5241  Strategic Project Management

ETM 5291  Failure Mode and Effects Analysis in Design

ETM 5371  Ethics for Practicing Engineers

ETM 5411  Engineering Economic Analysis

IEM 5143  Reliability and Maintainability

ETM 5461  Intellectual Property Management

MERO 5070  Directed Studies ¹

<table>
<thead>
<tr>
<th>Hours Subtotal</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Hours</td>
<td>30</td>
</tr>
</tbody>
</table>

¹ The MERO 5070 course is used for a creative component. A report (a "mini-thesis") must be submitted, prepared in the style of an M.S. thesis, but not submitted for Graduate College approval.

**Graduate College Master's Program Requirements**

Learn more about Graduate College 2023-2024 Master's Degree Program Requirements (http://catalog.okstate.edu/graduate-college/). Check the General Graduate College academic regulations for minimal GPA, language proficiency and other general requirements.