# MECHATRONICS ROBOTICS ENGINEERING, B.A. SC. (CLASS OF 2025)

## First Year 2021-2022

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>MREN 103</td>
<td>Mechatronics and Robotics Design I</td>
<td>4.00</td>
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<tr>
<td>MREN 178</td>
<td>Data Structures and Algorithms</td>
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</tr>
<tr>
<td>APSC 101</td>
<td>Engineering Design &amp; Practice</td>
<td>3.50</td>
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<tr>
<td>APSC 102</td>
<td>Experimentation</td>
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<tr>
<td>APSC 111</td>
<td>Physics I</td>
<td>3.30</td>
</tr>
<tr>
<td>APSC 112</td>
<td>Physics II</td>
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</tr>
<tr>
<td>APSC 131</td>
<td>Chemistry of Engineering Materials and Processes</td>
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</tr>
<tr>
<td>APSC 143</td>
<td>Introduction to Computer Programming for Engineers</td>
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<tr>
<td>APSC 162</td>
<td>Engineering Graphics</td>
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<tr>
<td>APSC 171</td>
<td>Calculus I</td>
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</tr>
<tr>
<td>APSC 172</td>
<td>Calculus II</td>
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<tr>
<td>APSC 174</td>
<td>Introduction To Linear Algebra</td>
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<td>APSC 182</td>
<td>Applied Engineering Mechanics</td>
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<td>APSC 199</td>
<td>English Proficiency for Engineers</td>
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**Total Units: 41.00**

## Second Year 2022-2023

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<tbody>
<tr>
<td>MREN 203</td>
<td>Mechatronics and Robotics Design II</td>
<td>4.00</td>
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<tr>
<td>MREN 223</td>
<td>Signals and Systems</td>
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<tr>
<td>MREN 230</td>
<td>Thermodynamics and Heat Transfer</td>
<td>3.75</td>
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<tr>
<td>MREN 241</td>
<td>Fluid Mechanics and Fluid Power</td>
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</tr>
<tr>
<td>ELEC 221</td>
<td>Electric Circuits</td>
<td>4.25</td>
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<tr>
<td>ELEC 252</td>
<td>Electronics I</td>
<td>4.25</td>
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<tr>
<td>ELEC 271</td>
<td>Digital Systems</td>
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<tr>
<td>ELEC 274</td>
<td>Computer Architecture</td>
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<tr>
<td>MECH 221</td>
<td>Solid Mechanics I</td>
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</tr>
<tr>
<td>MECH 228</td>
<td>Kinematics And Dynamics</td>
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</tr>
<tr>
<td>MTHE 228</td>
<td>Complex Analysis</td>
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<tr>
<td>MTHE 237</td>
<td>Differential Equations for Engineering Science</td>
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**Total Units: 46.00**

## Third Year 2023-2024

<table>
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<tbody>
<tr>
<td>APSC 221</td>
<td>Economic And Business Practice</td>
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<tr>
<td>MREN 303</td>
<td>Mechatronics and Robotics Design III</td>
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<tr>
<td>MREN 318</td>
<td>Sensors and Electric Actuators</td>
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<tr>
<td>MREN 320</td>
<td>Introduction to Industrial Automation</td>
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<td>MREN 348</td>
<td>Introduction to Robotics</td>
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<td>ELEC 326</td>
<td>Probability &amp; Random Processes</td>
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<td>ELEC 371</td>
<td>Microprocessor Interfacing and Embedded Systems</td>
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<tr>
<td>ELEC 372</td>
<td>Numerical Methods and Optimization</td>
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<tr>
<td>ELEC 353</td>
<td>Electronics II</td>
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<td>ELEC 373</td>
<td>Computer Networks</td>
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<tr>
<td>MECH 350</td>
<td>Automatic Control</td>
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Plus choose one (1) Complementary Studies course 3.00

**Total Units: 44.00**

## Fourth Year 2024-2025

<table>
<thead>
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<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>MREN 403</td>
<td>Mechatronics and Robotics Design IV</td>
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<td>MREN 410</td>
<td>Intelligent Machines and Autonomous Systems</td>
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<tr>
<td>ELEC 431</td>
<td>Power Electronics</td>
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<tr>
<td>ELEC 423</td>
<td>Introduction To Microsystems</td>
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<tr>
<td>MECH 455</td>
<td>Computer Integrated Manufacturing</td>
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<tr>
<td>ELEC 436</td>
<td>Electric Machines and Control</td>
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<tr>
<td>ELEC 444</td>
<td>Modeling and Computer Control of Mechatronic Systems</td>
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<tr>
<td>ELEC 408</td>
<td>Biomedical Signal and Image Processing</td>
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<tr>
<td>MECH 393</td>
<td>Biomechanical Product Developm</td>
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<tr>
<td>MECH 394</td>
<td>Frontiers in Biomechanical Engineering</td>
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<tr>
<td>MECH 495</td>
<td>Ergonomics And Design</td>
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<tr>
<td>MECH 496</td>
<td>Musculoskeletal Biomechanics</td>
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<tr>
<td>ELEC 421</td>
<td>Digital Signal Processing: Filters and System Design</td>
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<tr>
<td>ELEC 425</td>
<td>Machine Learning and Deep Learning</td>
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**Total Units: 44.00**
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ELEC 472</td>
<td>Artificial Intelligence</td>
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<tr>
<td>ELEC 474</td>
<td>Machine Vision</td>
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<tr>
<td>CMPE 325</td>
<td>Human-Computer Interaction</td>
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