

## Mechanical Engineering and Artificial Intelligence Systems Engineering (Option H)

September 2024 (for students who started first year in 2023 or later)

<p><b>Year 2</b></p> <p><b>Term A</b></p> <p>NMM 2270a Applied Mathematics for Engineering II          AISE 2205a Algorithms and Data Structures          MME 2202a Mechanics of Materials          MME 2204a Thermodynamics I          MME 2260a Industrial Materials          MME 2259a Product Design and Development</p> <p><b>Term B</b></p> <p>NMM 2276b Applied Mathematics for Elec &amp; Mech Eng III          AISE 2251b Software Design for Systems Engineering          MME 2285b Engineering Experimentation          MME 2273b Intro. to Fluid Mechanics and Heat Transfer          MME 2200s Advanced Machine and Safety Training          SS 2143b App Stats &amp; Data Analysis</p> <p><b>Year 3</b></p> <p><b>Term A</b></p> <p>DS 3000a Intro to Machine Learning          AISE 3309a Database Systems          AISE 3350a Cyber-Physical Systems Theory          MME 3348a Manufacturing Processes          MME 3374a Electrical Engineering for MME          One 0.5 non-technical elective (can be in term A or B)</p> <p><b>Term B</b></p> <p>AISE 3010b Data Engineering and Machine Learning          AISE 3351b Digital Systems and Signal Processing          MME 2213b Engineering Dynamics          MME 2221b Computational Methods for Mechanical Engineers          Writing 2130g Building Better (Communication) Bridges: Rhetoric &amp; Professional Communication for Engineers</p> <p><b>Year 4</b></p> <p><b>Term A</b></p> <p>AISE 4010a Deep Learning for Time Series Data          AISE 4430a Introduction to Computer Networking, Security &amp; IOT Systems          MME 3325a Mechanical Vibrations          MME 3381a Kinematics and Dynamics of Machines          MME 3303a Fluid Mechanics II          One 0.5 credit AISE technical electives (can be in term A or B)</p> <p><b>Term B</b></p> <p>AISE 4020b Artificial Intelligence Systems Engineering Design I          MME 3334b Thermodynamics II          MME 3350b System Modelling and Control          MME 3307b Heat Transfer II          MME 3360b FEA in Mechanical Engineering          MME 3380b Mechanical Components Design</p>	<p><b>NOTES:</b></p> <p><b>Important:</b>          Students are responsible for ensuring they have the correct courses required for their degree. If you are unsure which courses you still need or if you see courses listed on the progression sheet that are no longer offered or are not offered in the term you see listed here, please contact your Academic Counsellor.</p> <p><b>*Non-technical Electives:</b>          Please choose a maximum of 1.0 credits (one 1.0 credit course or two 0.5 credit courses) from the 1000 level and a minimum of one 0.5 credit from the 2000 (or higher) level.</p> <p><a href="http://www.eng.uwo.ca/undergraduate/upper_year/electives.html">http://www.eng.uwo.ca/undergraduate/upper_year/electives.html</a></p> <p><b>Technical Electives:</b>  <b>** AISE technical electives</b>          - refer to a list of AI-based technical courses approved by the AISE program committee. The list consists of AI-based courses offered by the Faculty of Engineering and Faculty of Science at Western. The list will be updated every year.</p> <p>Some technical electives may not be offered in a given academic year. Consult the Department for accurate listing.</p> <p><b>MME Technical Electives</b></p> <table border="1"> <tr><td>MME 3379a</td><td>Materials Selection</td></tr> <tr><td>MME 4410</td><td>Mechanical and Materials Engineering Thesis</td></tr> <tr><td>MME 4423A/B</td><td>Internal Combustion Engines</td></tr> <tr><td>MME 4424A/B</td><td>Mechanical Properties of Materials</td></tr> <tr><td>MME 4425A/B</td><td>Mechanical Vibrations</td></tr> <tr><td>MME 4427A/B</td><td>Selected Topics in Mechanical Engineering III</td></tr> <tr><td>MME 4428A/B</td><td>Selected Topics in Mechanical Engineering IV</td></tr> <tr><td>MME 4429A/B</td><td>Nuclear Engineering</td></tr> <tr><td>MME 4435A/B</td><td>Pressure Vessel Design</td></tr> <tr><td>MME 4437A/B</td><td>Advanced CAE: Simulation</td></tr> <tr><td>MME 4446A/B</td><td>Composite Materials</td></tr> <tr><td>MME 4450A/B</td><td>Control Systems: Theory and Practice</td></tr> <tr><td>MME 4452A/B</td><td>Robotics and Manufacturing Automation</td></tr> <tr><td>MME 4453A/B</td><td>Corrosion and Wear</td></tr> <tr><td>MME 4459A/B</td><td>Advanced CAE: Manufacturing Technologies</td></tr> <tr><td>MME 4460A/B</td><td>HVAC II</td></tr> <tr><td>MME 4469A/B</td><td>Biomechanics of the Musculoskeletal System</td></tr> <tr><td>MME 4470A/B</td><td>Medical and Assistive Devices</td></tr> <tr><td>MME 4473A/B</td><td>Computer Integrated Manufacturing (CIM)</td></tr> <tr><td>MME 4474A/B</td><td>Selected Topics in Mechanical Engineering I</td></tr> <tr><td>MME 4475A/B</td><td>Selected Topics in Mechanical Engineering II</td></tr> <tr><td>MME 4480A/B</td><td>Advanced CAE: Reverse Engineering</td></tr> <tr><td>MME 4482A/B</td><td>Fundamentals of MEMS</td></tr> <tr><td>MME 4483A/B</td><td>HVAC I</td></tr> <tr><td>MME 4485A/B</td><td>Fluid Machinery</td></tr> <tr><td>MME 4487A/B</td><td>Mechatronic System Design</td></tr> <tr><td>MME 4490A/B</td><td>Engineering in a Global Context: Advanced Manufacturing <i>*Course with an International Component: see MME office for details</i></td></tr> <tr><td>MME 4492A/B</td><td>Production Management for Engineers</td></tr> </table>	MME 3379a	Materials Selection	MME 4410	Mechanical and Materials Engineering Thesis	MME 4423A/B	Internal Combustion Engines	MME 4424A/B	Mechanical Properties of Materials	MME 4425A/B	Mechanical Vibrations	MME 4427A/B	Selected Topics in Mechanical Engineering III	MME 4428A/B	Selected Topics in Mechanical Engineering IV	MME 4429A/B	Nuclear Engineering	MME 4435A/B	Pressure Vessel Design	MME 4437A/B	Advanced CAE: Simulation	MME 4446A/B	Composite Materials	MME 4450A/B	Control Systems: Theory and Practice	MME 4452A/B	Robotics and Manufacturing Automation	MME 4453A/B	Corrosion and Wear	MME 4459A/B	Advanced CAE: Manufacturing Technologies	MME 4460A/B	HVAC II	MME 4469A/B	Biomechanics of the Musculoskeletal System	MME 4470A/B	Medical and Assistive Devices	MME 4473A/B	Computer Integrated Manufacturing (CIM)	MME 4474A/B	Selected Topics in Mechanical Engineering I	MME 4475A/B	Selected Topics in Mechanical Engineering II	MME 4480A/B	Advanced CAE: Reverse Engineering	MME 4482A/B	Fundamentals of MEMS	MME 4483A/B	HVAC I	MME 4485A/B	Fluid Machinery	MME 4487A/B	Mechatronic System Design	MME 4490A/B	Engineering in a Global Context: Advanced Manufacturing <i>*Course with an International Component: see MME office for details</i>	MME 4492A/B	Production Management for Engineers
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<p><b>Year 5</b></p> <p><b>Term A</b></p> <p>AISE 4050      Artificial Intelligence Systems Engineering Design II          AISE 4450a      Data Driven Control of Cyber-Physical Systems          AISE 3020a      AI: Ethics, Bias and Privacy          ELI 4110f      Engineering Ethics, Sustainable Development &amp; the Law</p> <p>One 0.5 credit from the approved list of MME TEs          One 0.5 credit from the approved list of NTEs</p> <p><b>Term B</b></p> <p>AISE 4050      Artificial Intelligence Systems Engineering Design          Two 0.5 credit from the approved list of MME TEs          One 0.5 credit from the approved list of NTEs          One 0.5 credit AISE technical electives (can be in term A or B)</p>	<p><b>AISE Technical Electives</b></p> <table border="1"> <tr> <td>ECE4445A/B</td> <td>Introduction to Digital Image Processing</td> </tr> <tr> <td>ECE 4438A/B</td> <td>Advanced Image Processing and Analysis</td> </tr> <tr> <td>SE 4455A/B</td> <td>Cloud Computing</td> </tr> <tr> <td>CS3340A/B</td> <td>Analysis Of Algorithms I</td> </tr> </table>	ECE4445A/B	Introduction to Digital Image Processing	ECE 4438A/B	Advanced Image Processing and Analysis	SE 4455A/B	Cloud Computing	CS3340A/B	Analysis Of Algorithms I
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