Mechatronics System Engineering and Artificial Intelligence Systems Engineering (Option E)

September 2025 (for students who started first year in 2023 or later)

Year 2
Term A
NMM 2270a	Applied Mathematics for Engineering II
AISE 2205a	Algorithms and Data Structures
SS 2141a	Applied Probability and Statistics
MSE 2212a	Mechanics of Materials
MSE 2214a	Thermodynamics
MSE 2200q	Engineering Shop Safety Training

Term B
NMM 2276b	Applied Mathematics for Elec & Mech Eng III
AISE 2251b	Software Design for Systems Engineering
MSE 2213b	Engineering Dynamics
MSE 2273b	Intro to heat transfer and fluid mechanics
MSE 2221b	Computational Methods in Mechatronic Systems Engineering
Two 0.5 non-technical electives	

Year 3
Term A
DS 3000a	Intro to Machine Learning
AISE 3309a	Database Systems
AISE 3350a	Cyber-Physical Systems Theory
ECE 2205a	Electric Circuits
MSE 2201a	Introduction to Electrical Instrumentation
One 0.5 non-technical electives	

Term B
AISE 3010b	Data Engineering and Machine Learning
AISE 3351b	Digital Systems and Signal Processing
MSE 2202b	Intro to Mechatronic Design
MSE 2233b	Circuits and Systems (*)
MSE 3360b	Finite Element Methods for Mechatronic Systems Engineering
Writing 2130g	Building Better (Communication) Bridges: Rhetoric & Professional Communication for Engineers

Year 4
Term A
AISE 4010a	Deep Learning for Time Series Data
AISE 4430a	Introduction to Computer Networking, Security & IOT Systems
ECE2277a	Digital Logic Systems
ECE 3330a	Control Systems
MSE 3381a	Kinetics and Dynamics of Machines
MSE 3310a	Electric Motors and Drives

Term B
AISE 4020b	Artificial Intelligence Systems Engineering Design I
ECE 3375b	Microprocessors and microcomputers
MSE 3302b	Sensors and Actuators
ECE 4469b	Applied Control Systems
MSE 3380b	Machine Component Design for Mechatronic Systems
0.5 credit from AISE technical electives (can be in term A or B)**	

NOTES:
Important:
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.

*Non-technical Electives:
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.

http://www.eng.uwo.ca/undergraduate/upper-year/electives.html

Technical Electives:
** AISE technical electives
- 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.

Some technical electives may not be offered in a given academic year. Consult the Department for accurate listing.

MSE Technical Electives
ECE 3380A/B	Advanced Digital Systems
ECE 4429A/B	Advanced Digital Signal Processing
ECE 4438A/B	Advanced Image Processing and Analysis
ECE 4445A/B	Introduction to Digital Image Processing
ECE 4455A/B	Biomedical Systems Analysis
ECE 4468A/B	Systems Optimization
MME 4424A/B	Mechanical Properties of Materials
MME 4425A/B	Mechanical Vibrations
MME 4459A/B	Advanced CAE: Manufacturing Technologies
MME 4469A/B	Biomechanics of the Musculoskeletal System
MME 4470A/B	Medical and Assistive Devices
MME 4473A/B	B Computer Integrated Manufacturing
MME 4480A/B	Advanced CAE: Reverse Engineering
MME 4482A/B	Fundamentals of MEMS
MME 4492A/B	Production Management for Engineers
ECE 3380A/B	Advanced Digital Systems
ECE 4429A/B	Advanced Digital Signal Processing
ECE 4438A/B	Advanced Image Processing and Analysis
ECE 4445A/B	Introduction to Digital Image Processing
ECE 4455A/B	Biomedical Systems Analysis
ECE 4468A/B	Systems Optimization
MME 4424A/B	Mechanical Properties of Materials
MME 4425A/B	Mechanical Vibrations
MME 4459A/B	Advanced CAE: Manufacturing Technologies
MME 4469A/B	Biomechanics of the Musculoskeletal System
MME 4470A/B	Medical and Assistive Devices
MME 4473A/B	B Computer Integrated Manufacturing

Year 5		AISE Technical Electives	
Term A		ECE4445A/B	Introduction to Digital Image Processing
MSE 4499	Mechatronic Design Project	ECE 4438A/B	Advanced Image Processing and Analysis
AISE 4450a	Data Driven Control of Cyber-Physical Systems	SE 4455A/B	Cloud Computing
AISE 3020A	AI: Ethics, Bias and Privacy	CS3340A/B	Analysis Of Algorithms I
MSE 3301A	Materials Selection and Manufacturing Processes	CS 4417A/B	Unstructured Data
MSE 4401a	Robotic Manipulators	SS 4861A/B	Time Series
One 0.5 credit technical elective			

Term B

MSE 4499	Mechatronic Design Project
ECE 4460B	Real Time and Embedded Systems
ELI 4110F	Engineering Ethics, Sustainable Development & the Law

Two 0.5-credit technical elective

One 0.5 credit from AISE technical electives (can be in term A or B)**

The official version of the academic calendar can be found at: www.westerncalendar.uwo.ca