

I. CIVIL ENGINEERING AND ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING, SMART CITIES AND ENVIRONMENTAL ENGINEERING OPTION I (students who entered *first year* in September 2023 or later)

<u>ear 2:</u>	
erm A	
NMM 2270A	Applied Math for Engineering II
AISE 2205A	Algorithms & Data Structure for
	Object-Oriented Design
CEE 2202A	Mechanics of Materials
CEE 2217A	Introduction to Environmental Engineering
CEE 2220A	Introduction to Structural Engineering
CEE 2224	Engineering Fluid Mechanics
D	
erm B	
NMM 2277B	Applied Mathematics for Chem & Civil Eng. III
SS 2143B	Applied Probability and Statistics for Engineers
AISE 2251B	Software Design for Systems Engineering
CEE 2219B	Computation Tools for Civil Engineers
CEE 2221B	Structural Theory and Design
CEE 2224	Engineering Fluid Mechanics
<u>ear 3:</u>	
erm A	
DS 3000A	Introduction to Machine Learning
AISE 3309A	Database Management Systems
AISE 3350A	Cyber-Physical Systems Theory
CEE 3348A	Project Management & Engineering Cases
CEE 4401A	Introduction to Transportation

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Note: CEE 3324a (Surveying). Offered each August (10 days) and must be completed before a student may graduate.

Important:

NOTES:

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 Al-based technical courses approved by the AISE program committee. The list consists of Al-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.

CEE Technical Electives

CEE 3355A/B	Municipal Engineering Design
CEE 4414 A/B	Machine Learning for Water Resources
CEE 4417A/B	Smart Buildings
CEE 4428A/B	Selected Topics in Civil Engineering I
CEE 4429A/B	Selected Topics in Civil Engineering II
CEE 4438A/B	Introduction to Wood Design
CEE 4440	Civil Engineering Thesis (full year course - counts as two technical electives)
CEE 4458A/B	Risk Analysis and Decision Making in Engineering
CEE 4459A/B	Design of Lateral Load Structural Systems
CEE 4465A/B	Environmental Design for Waste Disposal
CEE 4476A/B	Environmental Hydraulics Design
CEE 4480A/B	Wind Engineering: Modelling, Assessment and Mitigation
CEE 4485A/B	Cities: Resilience and Sustainability
Earth Sc. 4440A/B	Hydrogeology: Principles, Processes, and Professional Practice

Year 4:

Term B
AISE 3010B

AISE 3351B

CEE 4412B

Earth Sc.2281B

Writing 2130g

1.0 non-technical electives

Term A

Cilii / C		
AISE 4010A	Deep Learning for Time Series Data	
AISE 4430A	Introduction to Computer Networking, Security	
	& IOT Systems	
CEE 3321A	Soil Mechanics & Hydrogeologic Engineering	
CEE 3369A	Materials for Civil Engineering	
CEE 3362A	Drinking Water Quality and Treatment	
Earth Sc.	Watershed Hydrology	
3340A		

Data Engineering and Machine Learning

Professional Communication for Engineers

Building Better (Communication) Bridges: Rhetoric &

Digital Systems and Signal Processing

Intelligent Transportation Systems

Geology for Engineers

Term B

CEE 3322B	Introduction to Geotechnical Engineering
CEE 3355B	Municipal Engineering Design
CEE 4476B	Environmental Hydraulics Design
CBE 4409B	Wastewater Treatment
CEE 3386B	Numerical Modelling for Environmental Engineers
One 0.5 non-technical elective	

Western **S**Engineering

Year 5: Term A AISE 4050 or Artificial Intelligence Systems Engineering Design II or CEE 4442 Smart Cities Capstone Design Project AISE 4450A Data Driven Control of Cyber-Physical Systems AISE 3020A AI: Ethics, Bias and Privacy AISE 4020A or Artificial Intelligence Systems Engineering Design I or CEE 4420A Data Science in Geotechnical Engineering **CEE 4465A** Environmental Design for Waste Disposal **CEE 4426A** Geotechnical Engineering Design Term B CEE 4416B Digital Water Infrastructures CEE 4463B Watershed Modelling CEE 4478b Case Studies in Civil Engineering CEE 4414B Machine Learning for Water Resources ELI 4110G Engineering Ethics, Sustainable Development and the Law AISE 4050 or Artificial Intelligence Systems Engineering Design II CEE 4442 Smart Cities Capstone Design Project