

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

Y	Year 2:		
T	Term 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	

Term B

NMM 2277B	Applied Mathematics for Chem & Civil Eng. III
AISE 2251B	Software Design for Systems Engineering
CEE 2219B	Computation Tools for Civil Engineers
CEE 2221B	Structural Theory and Design
SS 2143B	Applied Probability and Statistics for Engineers
CEE 2224	Engineering Fluid Mechanics

Year 3:

Term 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 4411A	Introduction to Transportation in Smart Cities
Three 0.5 non-technical electives	

Term B

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	AISE 3010B	Data Engineering and Machine Learning
	AISE 3351B	Digital Systems and Signal Processing
	Earth Sc.2281B	Geology for Engineers
	CEE 4412B	Intelligent Transportation Systems
	Writing 2130g	Building Better (Communication) Bridges: Rhetoric &
		Professional Communication for Engineers

Year 4:

Term A

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	AISE 4010A	Deep Learning for Time Series Data
	AISE 4430A	Introduction to Computer Networking, Security
		& IOT Systems
	CEE 3321A	Soil Mechanics & Hydrogeologic Engineering
	CEE 3340A	Analysis of Indeterminate Structures
	CEE 3347A	Reinforced Concrete Design
	CEE 3369A	Materials for Civil Engineering

Term B

Term b		
	CEE 4413B	Building Information Modelling
	CEE 3322B	Introduction to Geotechnical Engineering
	CEE 3343B	Finite Element Methods & Application to
		Lateral Analysis of Buildings
	CEE 3344B	Structural Dynamics I
	CEE 3346B	Steel Design
	CEE 3358B	Reinforced & Prestressed Concrete Design
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NOTES:

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

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 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 - cour
CEE 4440	as two technical electives)
CEE 4458A/B	Risk Analysis and Decision Making in Engineer
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. 3340A/B	Watershed Hydrology
Earth Sc. 4440A/B	Hydrogeology: Principles, Processes, and
	Professional Practice

AISE Technical Electives

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



<u>Year 5:</u> Term A Artificial Intelligence Systems Engineering Design II or AISE 4050 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 4491A** Structural Dynamics II **CEE 4426A** Geotechnical Engineering Design Term B CEE 4415B Structural Health Monitoring CEE 4478b Case Studies in Civil Engineering ELI 4110G Engineering Ethics, Sustainable Development and the Law **AISE 4050** Artificial Intelligence Systems Engineering Design One 0.5 non-technical elective One 0.5 technical elective