DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
Graduate Programs Office
McConnell Engineering Building, Rm 602
Tel: (514) 398-1406
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MEng PROGRAM REGULATIONS & POLICIES
Non-Thesis

Applied Artificial Intelligence Concentration

MEng Non-Thesis (Course-based) Option – AI Concentration: (45 credits)

The Non-Thesis (Course-based) option, AI Concentration, requires satisfactory completion of 45 graduate level course credits (ECSE 5xx or ECSE 6xx) with a grade of B- or better, of which no more than 16 credits may be taken outside the Department. Courses taken outside the Department must be related to the MEng degree in ECE. Non-departmental courses, other than those listed below, require ECE Departmental approval. Students may be allowed to take more than 16 credits of non-departmental courses; a letter outlining the reason for such an action is required. Please get in touch with the Graduate Office (grad.ece@mcgill.ca) for more information on course selection.

Program Requirements:

Required Courses (14 credits)

ECSE 551 Machine Learning for Engineers (4 credits)	ECSE 679 D1/N1 Project in Applied Artificial Intelligence (3 credits)
ECSE 552 Deep Learning (4 credits)	ECSE 679 D2/N2 Project in Applied Artificial Intelligence (3 credits)

Complementary Courses (18-24 credits)

Group A: Artificial Intelligence Focused
6-8 credits from the following:

ECSE 526 Artificial Intelligence (3 credits)	ECSE 557 Intro. To Ethics of Intelligent Systems (3 credits)
ECSE 555 Advanced Topics in Artificial Intelligence (4 credits)	ECSE 626 Statistical Computer Vision (4 credits)
ECSE 556 Machine Learning in Network Biology (4 credits)	ECSE 683 Topics in Vision and Robotics (4 credits)

Group B: Mathematical Foundations of Artificial Intelligence
3-4 credits from the following:

COMP 540 Matrix Computations (4 credits)	ECSE 509 Probability and Random Signals 2 (3 credits)
ECSE 500 Mathematical Foundations of Systems (3 credits)	ECSE 543 Numerical Methods in Electrical Engineering (3 credits)
ECSE 501 Linear Systems (3 credits)	ECSE 621 Statistic Detection and Estimation (4 credits)
ECSE 507 Optimization and Optimal Control (3 credits)	

Group C: Applications of Artificial Intelligence
9-12 credits from the following:

COMP 545 Natural Language Understanding with Deep Learning (4 credits)	ECSE 506 Stochastic Control and Decision Theory (3 credits)
COMP 549 Brain-Inspired Artificial Intelligence (3 credits)	ECSE 508 Multi-Agent Systems (3 credits)
COMP 558 Fundamentals of Computer Vision (4 credits)	ECSE 541 Design of Multiprocessor Systems -on-Chip (3 credits)

COMP 565 Machine Learning in Genomics and Healthcare (4 credits)	ECSE 544 Computational Photography (4 credits)
COMP 579 Reinforcement Learning (4 credits)	ECSE 546 Advanced Image Synthesis (4 credits)
COMP 585 Intelligent Software Systems (4 credits)	ECSE 554 Applied Robotics (4 credits)
COMP 588 Probabilistic Control and Decision Theory (3 credits)	MECH 599 Engineering Systems Optimization (3 credits)
COMP 685 Machine Learning Applied to Climate Change (4 credits)	

Elective Courses (7-13 credits)
7-13 credits at the 500 or 600 level (excluding ECSE 691-697)

Please note that not all courses are offered each term or every academic year. Students must check the course schedule on Minerva (www.mcgill.ca/minerva) for available courses.

Transfer Credits

No more than a total of 15 credits will be given for graduate level course work undertaken at other universities. Such courses must have received a grade of "B-" or better. Transfer credits may be granted only for courses not used towards a previous degree and must be approved by the Graduate Program Director.

Undergraduate Level Courses

Students who wish to take a 200, 300 or 400 level Departmental and/or non-Departmental courses may do so, but no credits will be granted towards the degree requirements. These courses will be “extra” to the MEng program, and Graduate Program Director approval is required.

Residence Requirement

The residency requirement for the MEng program is three terms of “full-time” status. A registration of 12 credits (minimum) per term is required to obtain full-time status.

Policy Regarding Failures

The accumulation of two failures results in permanent withdrawal from the MEng program. A failure is recorded if a grade of less than B- is obtained in a 500, 600 or 700 level course.

Registration Status and Fees

Full-time students: Students registered for 12 or more credits per term are considered full-time. Tuition is charged per credit and is based on the student’s immigration status.

Part-time students: This status is available only for domestic students with the approval of the Graduate Program Director. If a student registers for less than 12 credits per term, they are considered to be part-time. Tuition is charged per credit. Part-time MEng students must complete their degree within a time limitation of 5 years.