

DEPARTMENT OF COMPUTER SCIENCE

Computer Science Approved Elective Courses for Graduate Students – December 2021

1. Ph. D. Program - Completion of at least four CS courses (within these four, a maximum of one course can be from this list of CS-approved electives).
2. M.Sc. Thesis Route - Completion of five CS courses (a maximum of two courses can be from this list of CS-approved electives).
3. M.Sc. Work-Term Route - Completion of nine CS courses (a maximum of two courses can be from this list of CS-approved electives).

Procedure to register for the CS-approved electives mentioned below:

- 1- If the course can be registered through self-service, self-registration is sufficient.
- 2- If the course cannot be added using self-service, the student will need to obtain permission from the course instructor and then from the Graduate Officer (or Dept Head) of the Department or Faculty which is offering the course. This is done by filling out a [course change form](#), having it signed by the professor of the course teaching the course, and then having it signed by the Graduate officer of the corresponding Department or Faculty.
- 3- After both signatures are obtained, please send an email with the form to the Graduate Secretary (Mrs. Barbara Hynes bjhynes@mun.ca). She will verify the form, add it to the CS records, and send it to Registrar's office.
- 4- Using self-service, the student should verify the registration has taken place, 2-3 working days after the form has been submitted.

Please note that not all courses are offered every year. They may be offered every other year.

Biology Courses

BIOL-7491 Introduction to Bioinformatics

Business Courses

BUSI-9903 Quantitative Methods in Management Research

BUSI-9910 Optimization

BUSI-9911 Data and Process Models in Information Systems Development

BUSI-9912 Probabilistic Models

BUSI-9913 Human-Computer Interaction and Decision Support Systems

BUSI-9915 Electronic Commerce

BUSI-9918 Special Topics in Information Systems

BUSI-8103 Statistical Applications in Management (*MBA priority*)
BUSI-8107 Managing Ethics and Responsibility (*MBA priority*)
BUSI-8205 Information Systems (*MBA priority*)
BUSI-8207 Operations Management (*MBA priority*)
BUSI-9021 Data Management (*MBA priority*)
BUSI-9022 Information Systems Analysis & Design (*MBA priority*)

MBA priority: Interested students must meet the specific courses named as prerequisites (BUSI 8103 and 8107 have no prerequisites), and the [Faculty of Business English language requirements](#). Seat availability will be clear right up to the moment before the term starts.

Engineering Courses

ENGI-9098 Human Factors in Engineering
ENGI-9560 Applied Remote Sensing
ENGI-9804 Industrial Machine Vision
ENGI-9805 Advanced Topics in Computer Vision
ENGI-9807 Computer Security
ENGI-9821 Digital Signal Processing
ENGI-9826 Advanced Control Systems
ENGI-9827 Continuous & Discrete-Event Systems
ENGI-9861 High-Performance Computer Architecture *MASCE priority*
ENGI-9865 Advanced Digital Systems
ENGI-9866 Fault-Tolerant Computing (formerly 9846)
ENGI-9867 Advanced Computing Concepts for Engineering
ENGI-9868 ASIC Design
ENGI-9869 Advanced Concurrent Programming
ENGI-9871 Information Theory & Coding *MASCE priority*
ENGI-9872 Digital Communications
ENGI-9873 Image Communications
ENGI-9874 Software Design & Specification (credit restricted with COMP 6713/6905)
ENGI-9875 Embedded & Real-Time Systems Design
ENGI-9876 Advanced Data Networks
ENGI-9877 Computer & Communications Security
ENGI-9878 Wireless & Mobile Communications
ENGI-9879 Formal Specification & Development
ENGI-9940 Advanced Robotics

MASCE priority: These are required courses for the MASCE program. Students in that program will have priority to register first. Seat availability will be clear right up to the moment before the term starts.

Mathematics Courses

MATH-6202 Nonlinear & Linear Optimization (Credit Restricted with COMP-6933)

MATH-6205 Deep Learning and Deep Reinforcement Learning

MATH-6340 Graph Theory

MATH-6341 Combinatorial Design Theory

MATH-6342 Advanced Enumeration

Scientific Computing Courses

CMSC-6910 Matrix Computations and Applications (Credit Restricted with COMP-6732/6931)

CMSC-6920 Applied Scientific Programming

CMSC-6925 Tools of the Trade for Programming High Performance Computers (2 credit hours)

CMSC-6930 Algorithms for Distributed & Shared Memory Computers

CMSC-6950 Computer Based Tools and Applications (Credit Restricted with CMSC-6940)

Statistics Courses

STAT-6500 Probability (Credit Restricted with former 6586)

STAT-6503 Stochastic Processes

STAT-6530 Longitudinal Data Analysis

STAT-6540 Time Series Analysis

STAT-6545 Computational Statistics

STAT-6561 Categorical Data Analysis