DEPARTMENT OF COMPUTER SCIENCE

Computer Science Elective Courses for Graduate Students - As of September 1, 2020

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 electives).

2. **M.Sc. Thesis Route** - Completion of five CS courses (a maximum of two courses can be from this list of CS electives).

3. **M.Sc. Work-Term Route** - Completion of nine CS courses (a maximum of two courses can be from this list of CS electives).

**Biology Courses**

BIOL-7491 Introduction to Bioinformatics

**Business Courses**

BUSI-8103 Statistical Applications in Management
BUSI-8107 Managing Ethics and Responsibility
BUSI-8205 Information Systems
BUSI-8207 Operations Management
BUSI-9022 Information Systems Analysis & Design
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

**Engineering Courses**

ENGI-9098 Human Factors in Engineering
ENGI-9560 Applied Remote Sensing
ENGI-9804 Industrial Machine 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
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-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