

# COMPUTING - MASTER OF SCIENCE

Applicants with a variety of backgrounds in computing science will be considered. A fully qualified student should have knowledge at the undergraduate level equivalent to having completed the required courses in the B.Sc. program with a major in Computing by Queen's.

The School encourages the enrolment of students from other disciplines in the M.Sc. program. They must have an honours bachelor or equivalent degree with high standing and some computing science or equivalent experience. Such a student is accepted as a preparatory student and undertakes a preliminary year of study that fulfills the background requirements. This is an intensive year of study designed for first- class students who are highly motivated to learn a second discipline. On successful completion of the preliminary year a student may undertake either the research or non-research pattern degree program described below. Applicants whose background is lacking only some of the above-mentioned material will be assigned a program of study on an individual basis.

The degree program is based either on a research or a non-research pattern. The requirements for the research pattern degree are: CISC 897 Research Methods in Computer Science and four half-courses at the 800 level (excluding CISC 810 and CISC 885 ), together with a thesis which is considered to constitute one half of the work for the degree. Students in the ULSS stream take CISC 885 in place of CISC 897 Research Methods in Computer Science.

The non-research M.Sc. program is based either on a project pattern or a course work pattern. Under the project pattern program, a student is required to complete six half course credits at the 800 level (excluding CISC 810 ), one of which may be CISC 897 Research Methods in Computer Science, and a project (CISC 898 Master's Project). At least one course must be chosen from each of the following areas: Computer Systems, Theory of Computation, and Applications. The courses currently offered in these areas are listed below. The project culminates in a written report which will be examined by a board consisting of the supervisor, one other member of the department and the head of the department (or delegate).

The requirements for the course work pattern program are eight half course credits at the 800 level (excluding CISC 810 and CISC 897 Research Methods in Computer Science). At least one course must be chosen from each of the following areas: Computer Systems, Theory of Computation, and Applications.

The selection of courses is subject to School approval and at the beginning of the program the student is required to submit a plan of study to the Coordinator of Graduate Studies.

Programs will be selected in consultation with the Coordinator of Graduate Studies.

## Double Numbered Courses

The following courses are offered jointly with senior undergraduate courses:

Code	Title	Units
CISC 832	Database Management Systems	3.00
CISC 841		3.00
CISC 854	Graphics (A)	3.00
CISC 858	Programming Lang Processors (S)	3.00

## Computer Systems Courses

Code	Title	Units
CISC 825	Paradigms of Wireless and Mobile Networking	3.00
CISC 833		3.00
CISC 834	Topics in Computer Science	3.00
CISC 835	Topics in Computer Systems	3.00
CISC 836	Topics in Software Systems	3.00
CISC 837		3.00
CISC 838		3.00
CISC 841		3.00
CISC 842		3.00
CISC 845		3.00
CISC 846	Software Design Methodologies	3.00
CISC 847		3.00
CISC 848	Software Reliability & Secur	3.00
CISC 853		3.00
CISC 858	Programming Lang Processors (S)	3.00
CISC 860	Topics: Structure & Design of Programming Languages	3.00
CISC 880	Topics in Software Systems II	3.00
CISC 883		3.00
CISC 884		3.00



## Theory of Computation Courses

Code	Title	Units
CISC 865	Semantics of Programming Languages	3.00
CISC 868		3.00
CISC 869		3.00
CISC 870	Cryptography	3.00
CISC 871		3.00
CISC 872	Parallel Algorithms	3.00
CISC 876	Computational Complexity (T)	3.00
CISC 879	Topics in Theoretical Aspects of Computing	3.00

## Applications Courses

Code	Title	Units
CISC 832	Database Management Systems	3.00
CISC 839	Topics in Information Systems	3.00
CISC 850	Topics in Computer Applications and Algorithms I	3.00
CISC 854	Graphics (A)	3.00
CISC 856	Reinforcement Learning	3.00
CISC 857	Image Processing	3.00
CISC 859	Pattern Recognition (A)	3.00
CISC 861		3.00
CISC 866	Introduction to Cybersecurity	3.00
CISC 873	Data Mining (A)	3.00
CISC 874	Neural and Cognitive Computing	3.00
CISC 875	Bioinformatics	3.00
CISC 877	Developing Digital Games	3.00
CISC 878	Topics in Computer Applications and Algorithms II	3.00
CISC 881	Topics in Biomedical Computing I	3.00
CISC 882	Topics in Biomed Computing II	3.00
CISC 888	Advanced Research in Human-Computer Interaction	3.00