



FACULTY OF GRADUATE STUDIES

APPLIED COMPUTER SCIENCE AND SOCIETY (MSc)

The Master of Science (MSc) in Applied Computer Science and Society focuses on issues of technology and ethical/human/social aspects of computing. We offer courses in three core clusters that represent frontiers of the discipline. These are: Information Representation, Search and Management, Intelligent Systems, and Systems Development.

In this program, you will have the opportunity to work with outstanding faculty who have a wide range of research interests including: algorithms and complexity, computational intelligence, computer vision, data warehousing, web and document databases, granular computing, image processing, pattern recognition, software engineering, rough sets, security and privacy, multimedia computing, and wireless communication. Information about specific research topics can be found on the faculty webpages.

We offer both thesis-based and course-based programs. The expected time to graduate is 2 years; the maximum time is 5 years.

SAMPLE CAREERS

Our thesis-based program is designed to provide an excellent basis for a PhD in computer science or other related fields. Our graduates in the course-based program are well-qualified for employment in industry, the public-sector, and academia.

SAMPLE COURSES

ADVANCED DATA STRUCTURES AND ALGORITHMS FOR APPLIED COMPUTER SCIENCE - Students will study methods for designing efficient data structures and algorithms such as binary search trees, red-black trees, priority queues, minimum spanning trees, strongly connected components, maximum flows, string matching and tree matching, bipartite graphs, as well as the algorithm analysis and proof.

WEB AND DOCUMENT DATABASES - Students will gain a good understanding and knowledge of research issues associated with two types and databases. In particular, students will study basic theoretic issues of web and document databases: system architectures, XML data storage and data compression, data retrieval and twig matching, data stream system, as well as the search engine architecture. Another specific methodology related to Graph databases will also be discussed.

PATTERN RECOGNITION - This course gives students an overview of classification techniques. It covers methods from linear classifiers to nonparametric techniques. Feature generation, selection, and extraction techniques are examined. Both supervised and unsupervised learning methods are discussed.

MORE SAMPLE COURSES

- Multimedia Computing and Applications
 - Biometrics
 - Global Software Project Management
 - Current Topics in Computing
 - Theory and Practice of Security and Privacy
 - Graduate Project
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ADMISSION REQUIREMENTS

Students may be admitted if they hold an Honours or 4-year Bachelor of Science degree in Applied Computer Science, Computer Science and/or Engineering, Mathematics or equivalent and if they present a suitable selection of courses. Minimum Entry Requirement: Overall GPA of 3.0. (For the thesis track, the student must also have a supervisor selection prior to admission)

English Requirement (if applicant's first language is not English): Minimum TOEFL score 550 (paper-based), 213 (computer-based), (80) internet-based OR International English Language Testing System **IELTS** (6.5). The test must have been taken within two years of the date a completed application is filed.

Students may be admitted upon successful completion of a pre-Master's program which consists of a set of upper-level undergraduate courses – for details, see <http://www.acs.uwinnipeg.ca/>

HOW TO APPLY

1. Please complete the online application form:
<https://oa2.uwinnipeg.ca/OnlineAdmissions/Account/Login?ReturnUrl=%2fOnlineAdmissions>
2. In addition to the completed application form, the following must also be included with the application:
 - a. Transcripts are required from ALL recognized, post-secondary institutions attended, whether or not a degree has been awarded. For initial assessment purposes only, copies of unofficial transcripts (uploaded to your application) are acceptable and preferred. Official transcripts will only be required if you are recommended for admission. All official transcripts are to be sent directly from the post-secondary institutions. If the final transcript does not show that a completed degree has been conferred, an official/notarized copy of your diploma is also required.
 - b. Supply two letters of recommendation and reference forms from individuals familiar with your academic work.
 - c. Provide English language requirement (where applicable). Official test scores must be forwarded directly to the Graduate Studies Admissions Office from the testing agency. For initial assessment purposes only, copies of test scores (uploaded to your application) are acceptable and preferred.
 - d. Supply statement of interest and/or research proposal.
 - e. Other supporting documents include: scanned copies of name change (if applicable), CV/ resumé and proof of permanent residency (if applicable).
 - f. Official documents should be sent to the Graduate Studies Admissions Office, The University of Winnipeg, 515 Portage Avenue, Winnipeg, MB Canada R3B 2E9.

Start dates for the program are in September and January.

Deadlines to submit a complete application package, including all supporting documents:

Fall (September) Intake – February 1

Winter (January) Intake- July 1

CONTACT US

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Graduate Studies Admissions Office

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E: gradstudies@uwinnipeg.ca

In any case where the University's Academic Calendar and this fact sheet differ, the current Calendar takes precedence
