

Human-Computer Interaction

- **M.A. Human-Computer Interaction**
- **M.A.Sc. Human-Computer Interaction**
- **M.C.S. Human-Computer Interaction**

M.A., M.A.Sc., M.C.S. Human-Computer Interaction

About the Program

The Master of Human-Computer Interaction (HCI) degree is open to students from a wide variety of disciplinary backgrounds in the human, technological, or engineering sciences. It offers students an opportunity to explore their native discipline in more depth while also gaining insight into the language and constraints under which specialists in other disciplines in the HCI field work. The degree prepares all students for direct entry into a career in HCI, bringing cross-disciplinary skills in quantitative and qualitative laboratory and field research that are increasingly sought after in industry and government. While no Ph.D. program is offered in HCI at Carleton as yet, qualified students who wish to continue their studies beyond a Master's degree may apply in the Ph.D. programs of their native discipline.

Admission Requirements

Applicants for the HCI M.A. program will normally hold an Honours degree or equivalent professional degree in Arts, Social Sciences, Business, or related areas with Highest Honours. Applicants for the M.A.Sc. program will normally hold an Honours degree in Engineering, Architecture, Design, or related areas with Highest Honours. Applicants for the M.C.S. degree will normally hold an Honours degree in Computer Science. Applicants with a background in Cognitive Science will be considered for whichever of the three programs is appropriate to their particular academic background.

Applicants judged to be generally acceptable but deficient in some preparation may be asked to complete course-work in addition to the program requirements.

In addition to transcripts and letters of reference, application packages will include a statement of interest outlining the applicant's proposed area of research.

Program Requirements

The HCI program comprises 5.0 credits of which 2.5 credits are devoted to course work, and 2.5 credits to a thesis.

Every student must enroll in one of three streams, Master of Arts, Master of Applied Science, or Master of Computer Science, depending on their native discipline.

M.A. Human-Computer Interaction (5.0 credits)

1. 0.5 credit in:	0.5
HCIN 5100/ PSYC 5105 [0.5]	Fundamentals of HCI Design and Evaluation
2. 0.5 credit in:	0.5

HCIN 5200 [0.5]	Software and User Interface Development	
3. 0.5 credit in:		0.5
HCIN 5300 [0.5]	Emerging Interaction Techniques	
Students in the M.A. stream must also complete one of the following:		0.5
HCIN 5400/ CGSC 5101 [0.5]	Experimental Methods and Statistics	
HCIN 5403/ PSYC 5106 [0.5]	Research methods in HCI	
4. 0.5 credit from	a wide range of available electives with the guidance and permission of the supervisor of graduate studies	0.5
5. 2.5 credits in:		2.5
HCIN 5909 [2.5]	Thesis in Human-Computer Interaction	
Total Credits		5.0

M.A.Sc. Human-Computer Interaction (5.0 credits)

1. 0.5 credit in:		0.5
HCIN 5100 [0.5] & PSYC 5105 [0.5]	Fundamentals of HCI Design and Evaluation and Fundamentals of HCI Design and Evaluation	
2. 0.5 credit in:		0.5
HCIN 5200 [0.5]	Software and User Interface Development	
3. 0.5 credit in:		0.5
HCIN 5300 [0.5]	Emerging Interaction Techniques	
Students in the M.A.Sc. stream must also complete one of the following:		0.5
HCIN 5404/ IDES 5102 [0.5]	Design Research Methods	
HCIN 5405/ SYSC 5104 [0.5]	Methodologies for Discrete-Event Modelling and Simulation	
4. 0.5 credit from	a wide range of available electives with the guidance and permission of the supervisor of graduate studies.	0.5
5. 2.5 credits in:		2.5
HCIN 5909 [2.5]	Thesis in Human-Computer Interaction	
Total Credits		5.0

M.C.S. Human-Computer Interaction (5.0 credits)

1. 0.5 credit in:		0.5
HCIN 5100/ PSYC 5105 [0.5]	Fundamentals of HCI Design and Evaluation	
2. 0.5 credit in:		0.5
HCIN 5200 [0.5]	Software and User Interface Development	
3. 0.5 credit in:		0.5
HCIN 5300 [0.5]	Emerging Interaction Techniques	
4. 0.5 credit in:		0.5
HCIN 5406/ COMP 5104 [0.5]	Object-Oriented Software Development	
5. 0.5 credit from	a wide range of available electives with the guidance and permission of the supervisor of graduate studies	0.5
6. 2.5 credits in:		2.5

Total Credits 5.0

HCIN 5100 [0.5 credit]

Fundamentals of HCI Design and Evaluation

Strategies and practices in HCI design and evaluation. Students will learn to perform studies in user interface analysis and design, read research literature critically, distill important points from readings, summarize, write papers, design user interfaces and present their work. Also listed as PSYC 5105.

HCIN 5200 [0.5 credit]

Software and User Interface Development

Design and development of user interfaces for software systems based on principles for supporting user interaction, with emphasis on frameworks, tools, and processes for user interface development.

HCIN 5300 [0.5 credit]

Emerging Interaction Techniques

Advanced interaction styles and their associated technologies. Topics may include hand held and gestural interactions, ubiquitous computing, deformable user interfaces, physiological computing and tangible user interfaces.

HCIN 5400 [0.5 credit]

Experimental Methods and Statistics

An introduction to the design of experiments and the statistics needed to interpret data. Also listed as CGSC 5101.

HCIN 5403 [0.5 credit]

Research methods in HCI

An introduction to quantitative and qualitative research methods in HCI. Students will acquire skills in collecting and analyzing HCI data, presenting the findings and specifying practical implications. Also listed as PSYC 5106.

HCIN 5404 [0.5 credit]

Design Research Methods

Critical analysis of research methods in design and disciplines contributing to design including anthropology, psychology, sociology, and business. Application areas include advanced materials and manufacturing processes, advanced visualization, product interaction design, extreme environments, sustainable design, design and culture, design management, and human-oriented design. Also listed as IDES 5102.

HCIN 5405 [0.5 credit]

Methodologies for Discrete-Event Modelling and Simulation

Methodological aspects of simulation. Modelling discrete events systems. Modeling formalisms: FSA, FSM, Petri Nets, DEVS, others. Verification and Verification. Cellular models: Cellular Automata, Cell-DEVS. Continuous and hybrid models. Parallel and Distributed simulation (PADS) techniques. PADS middleware: HLA, Parallel-DEVS, Time-Warp. Also listed as SYSC 5104.

HCIN 5406 [0.5 credit]

Object-Oriented Software Development

Issues in modeling and verifying quality and variability in object-oriented systems. Testable models in model-driven and test-driven approaches. System family engineering. Functional conformance: scenario modeling and verification, design by contract. Conformance to non functional requirements: goals, forces and tradeoffs, metrics. Also listed as COMP 5104.

HCIN 5900 [0.5 credit]

Directed Studies

A course of independent study under the supervision of a member of the Human/Computer Interaction faculty. Open only to students in the HCI program. Students are required to obtain their supervisor's written approval prior to registration and are limited to one such course in their program. Prerequisite(s): permission of the Director of the HCI program.

HCIN 5901 [0.5 credit]

Advanced Topics

Topics not ordinarily treated in the regular course program due to their contemporary subject matter. The choice of topics varies from year to year. Details will be available at the time of registration.

HCIN 5909 [2.5 credits]

Thesis in Human-Computer Interaction

Summer session: some of the courses listed in this Calendar are offered during the summer. Hours and scheduling for summer session courses will differ significantly from those reported in the fall/winter Calendar. To determine the scheduling and hours for summer session classes, consult the class schedule at central.carleton.ca

Not all courses listed are offered in a given year. For an up-to-date statement of course offerings for the current session and to determine the term of offering, consult the class schedule at central.carleton.ca