Human-Computer Interaction

This section presents the requirements for programs in:

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

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 enrol 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)

Requirements:

1. 0.5 credit in:		0.5
HCIN 5100 [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 5 [0.5]	Experimental Methods and Statistics	
HCIN 5403 [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)

Requirements:

1. 0.5 credit in:		0.5
HCIN 5100 [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 from:		0.5
HCIN 5403 [0.5]	Research methods in HCI	
HCIN 5404/IDES 51	Design Research Methods	
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
HCIN 5909 [2.5]	Thesis in Human-Computer Interaction	
Total Credits		**5.0**

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

Requirements:

1. 0.5 credit in:		0.5
HCIN 5100 [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 from the following, to be selected with the approval of the supervisor		0.5
HCIN 5400 [0.5]	Experimental Methods and Statistics	
HCIN 5403 [0.5]	Research methods in HCI	
HCIN 5404 [0.5]	Design Research Methods	
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
HCIN 5909 [2.5]	Thesis in Human-Computer Interaction	
Total Credits		**5.0**

Regulations

See the General Regulations section of this Calendar.

Regularly Scheduled Break

For immigration purposes, the summer term (May to August) for the M.A., M.A.Sc., and M.C.S. in Human-Computer Interaction is considered a regularly scheduled break approved by Carleton University. Students should resume full-time studies in September.

Admission

Applicants for the 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.

Human-Computer Interaction (HCIN) Courses

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. Precludes additional credit for PSYC 5105 (no longer offered).

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.
Also listed as ITEC 5204.

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.
Precludes additional credit for PSYC 5106 (no longer offered).

HCIN 5404 [0.5 credit]
Design Research Methods
Critical review of qualitative and quantitative research methods to support interdisciplinary design. Methods used by collaborators from the sciences and humanities as well as methods designers bring to interdisciplinary collaborations are introduced. Research for design, research through design and theoretical frameworks are discussed.
Includes: Experiential Learning Activity
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. Continous 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 5501 [0.5 credit]
Virtual and Augmented Reality Technology
Research in and design of virtual/augmented reality systems. Applications, history, human factors, display and input hardware, and interaction techniques for navigation, selection and manipulation. Students develop and evaluate a VR/AR system using modern game engines and 3D hardware devices such as head-mounted displays.
Includes: Experiential Learning Activity
Also listed as ITEC 5208.

HCIN 5900 [0.5 credit]
Directed Studies
Independent study under supervision of a member of the Human/Computer Interaction faculty. 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): Enrolment in the HCI program and permission of the program Director.

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