

# HUMAN-COMPUTER INTERACTION

For more information contact:

Rochester Institute of Technology  
Department of Information Sciences & Technologies  
152 Lomb Memorial Drive  
GOL-2100  
Rochester, NY 14623-5603  
(585) 475-2700  
(585) 475-6584 (fax)

# TABLE OF CONTENTS

PROGRAM OVERVIEW .....	2
PROGRAM RATIONALE AND BACKGROUND .....	2
ADMISSIONS REQUIREMENTS .....	5
PREREQUISITE BACKGROUND .....	5
STARTING YOUR PROGRAM OF STUDY .....	6
Application Deadlines.....	6
CURRICULUM.....	8
Advanced Program Electives.....	9
Application Domain Courses.....	9
MS Capstone.....	11
PLANS OF STUDY .....	11
PROGRAM COST.....	12
Financial Aid.....	12
RIT POLICIES AND REGULATIONS.....	12
Transfer of Credit.....	12
RIT's 7-Year Degree-Completion Rule.....	13
Academic Honesty .....	13
CONTACT INFORMATION.....	13
COURSE DESCRIPTIONS.....	14
School of Informatics Courses.....	14
Courses from Other Departments .....	14
2011-2012 Academic Calendar.....	15
2012-2013 Academic Calendar.....	16
MS/Human-Computer Interaction Worksheet.....	17

*“Usability is like oxygen -- you never notice it until it is missing ...”*

*-- Unknown*

# **Rochester Institute of Technology**

## **Master of Science in Human-Computer Interaction**

Department of Information Sciences & Technologies

### **PROGRAM OVERVIEW**

The MS in Human-Computer Interaction (MS/HCI), offered by the Department of Information Sciences & Technologies (IST) at RIT, is designed to equip students with the knowledge and skills for conceptualizing, designing, implementing, and evaluating either new or existing applications and technologies for the benefit of the user – whether an individual, a group, an organization, or society at large. Throughout this curriculum human, technological, and organizational concerns are interwoven and practiced through team and project-based learning.

This is a 52 quarter-credit hour graduate program comprised of a set of core courses, advanced electives for depth, and application domain study – all anchored on an eight-credit capstone experience. The core courses provide foundation knowledge and skills in the conceptual and methodological frameworks of HCI practice and research. Fundamental to this is an understanding of human cognition as it applies to information systems, along with interface design, prototyping, and evaluation skills. The depth electives give exposure to cutting-edge research and applications in the HCI discipline. Application domain courses provide foundational knowledge in a computing domain to which HCI theories and practice may be applied during the capstone experience. The program is offered on-campus, with selected electives and application domains, in online learning format. Students may study either full- or part-time.

The MS capstone is either a thesis, that provides a strong research experience, or a project, that involves a significant development experience. It could be an empirical study of an HCI problem or the development of a software product through user-centered design processes. This experience is geared towards the individual interests of the student. Students receive guidance from their capstone faculty in choosing an appropriate project or topic or in developing an experimental design. All work is expected to be suitable for publication in a peer-reviewed journal or otherwise disseminated in an appropriate public venue.

All RIT academic programs are identified by a 4-letter code. The code for the MS/HCI program is VKSI.

### **PROGRAM RATIONALE AND BACKGROUND**

As computing devices have become smaller, more portable, more powerful and ultimately ubiquitous, the need to study the relationship between human beings and computing devices has escalated. The ensuing investigation has attracted interest from a variety of academic fields. Human-Computer Interaction (HCI) is a multifaceted discipline that includes concepts from science, engineering, and design. It also merges concepts and methodologies from psychology, anthropology, sociology, and industrial design with the technical concerns of computing. From the perspective of computing, these other fields play a supporting role as technology is applied

within a multitude of domains (e.g. game design and development, enterprise computing, the Web and ecommerce, learning environments, industrial design, bio-medical informatics, etc.).

*“Human-computer interaction is a discipline concerned with the design, evaluation and implementation of interactive computing systems for human use and with the study of [the] major phenomena surrounding them.”<sup>1</sup>*

The fundamental purpose of HCI is to understand human needs and to create software and other technologies that are “usable,” i.e. that people will want to use, will be able to use, and will find effective to use.<sup>2</sup> Usability is the fundamental concept in HCI. It is concerned with system acceptability, in its narrowest sense, and more broadly with functional use. Usability directly addresses the vital question of whether or not a system satisfies all of the needs and tasks of its users.<sup>3</sup>

The two factors central to building usability into computing applications and devices — and which form the foundations of this curriculum — are interaction design and usability testing.

*“Both practices seek to ensure that the user's experience with the software is consistent with expectations; that the use of the software is intuitive; and that there's no needless obstacle to successful completion of the transaction.”<sup>4</sup>*

Similarly, there are two main branches of the usability profession: user research and interaction design. User research encompasses more than research in the traditional sense. It includes a user-centered requirements-gathering process and qualitative analysis processes based upon observations and interviews, among other methods. User research also involves evaluating products and designs after they have been created, an activity known as usability evaluation or usability testing. These tasks require skills in the synthesis and distillation of large amounts of user feedback data into meaningful information.

Interaction design, which is more than just interface design, incorporates the end user and the objectives of the end user (and the organization) into the design process.<sup>5</sup> Usability designers use the data provided by usability research to improve an existing product or to develop new solutions. These designers are problem solvers who create the interfaces that meet end-user needs.

The HCI field has its roots in more than 50 years of computer science theory as well as in the applied social and behavioral sciences. The field has greatly matured in the last 10-15 years, due in part to the explosive growth of the World Wide Web and the use of computing technologies in daily life. Today HCI research is driven by technological advances and the increasing pervasiveness of computing. With its emphasis on understanding user needs and in making computer technologies more “user-friendly,” HCI has emerged as one of computing’s most dynamic and important disciplines.

---

<sup>1</sup> Hewett, Baecker, Card, Carey, Gasen, Mantei, Perlman, Strong & Verplank ACM SIGCHI Curricula for Human-Computer Interaction, 1996.

<sup>2</sup> Rozanski, E.P. and Haake, A.R. “The Many Facets of HCI,” Conference for Information Technology Curriculum (CITC4 2003), Purdue University, West Lafayette, IN, October 16-18, 2003.

<sup>3</sup> Nielsen, J. *Usability Engineering*. AP Professional, 1993.

<sup>4</sup> Binstock, A. “New mantra: Usability.” *InformationWeek*. 751:1A-3A, 1999.

<sup>5</sup> Cooper, A. *The inmates are running the asylum*. Indianapolis, IN: SAMS Publishing, 1999.

Industry recognizes a growing need for employees with the in-depth knowledge and skills afforded by advanced HCI study. Companies such as Microsoft, eBay, Google, Yahoo, Adobe, and Oracle among others understand the value of a positive user experience, evaluation, and innovation. These companies realize that there is a return on investment from adopting user-centered design and usability testing practices. Products with poor usability are costly in terms of errors, unfinished tasks, frustration and even safety. Beyond the interface, an understanding of social and organizational concerns is now seen as an important aspect of the user experience.

There is growing demand from industry and government for computing professionals with HCI knowledge and experience; and experts predict that, as computing becomes even more ubiquitous, the HCI field will continue to grow for the foreseeable future.<sup>6</sup>

- As Jakob Nielsen, a principal at the Nielsen Norman Group and author of several usability and Web design books, stated in 2004, “in the U.S. today, we have 2.3 million programmers. Current best practices call for allocating 10% of development staff to usability, meaning that we ought to have 230,000 usability professionals. I doubt that there are even 30,000 people in the U.S. who are remotely qualified to call themselves usability professionals. We thus need 200,000 new usability jobs to achieve the minimum standards for good design.”<sup>7</sup>
- Jakob Nielsen also points out that consulting firms are adding usability to their standard practices and that those skills are highly transferable. In HCI “[y]ou can't specialize in the wrong thing,” says Nielsen. “If you understand how humans use technology, that knowledge will transfer to any platform.”<sup>8</sup>
- As the “largest single producer, collector, consumer, and disseminator of information in the United States,” the federal government (<http://www.usability.gov>) has adopted usability as a best practice to ensure easy and useful access to information online.
- Furthermore, according to the U.S. Department of Labor’s Bureau of Labor Statistics (<http://www.bls.gov>), employment opportunities and salaries for individuals with a master’s degree in HCI are comparable to those in software engineering.
- Professional organizations, the Usability Professionals Organization (<http://www.usabilityprofessionals.org/>) and ACM Special Interest Group in Computer Human Interaction (<http://www.sigchi.org>), offer a venue for professionals to network and promote best practices in the field; and they have developed curricular recommendations and a code of conduct for the profession.

There is clear recognition in academia, government, and industry of the need for trained practitioners and researchers in this area. The long-term prognosis for careers in HCI is excellent; there are increasing opportunities in almost every industry as new products and technologies continue to be developed.<sup>9</sup> Graduates of this program will be prepared to seek positions as usability specialists, usability engineers, user experience designers, interface or interaction designers, information architects, human-factors specialists, web designers, or requirements analysts.

---

<sup>6</sup> Canny, J. The future of human-computer interaction. *Queue* 4(6), 24-32, 2006.

<sup>7</sup> <http://www.useit.com/alertbox/20040329.html>

<sup>8</sup> [http://www.computerworld.com/action/article.do?command=viewArticleBasic&articleId=73509&intsrc=article\\_pots\\_bot](http://www.computerworld.com/action/article.do?command=viewArticleBasic&articleId=73509&intsrc=article_pots_bot)

<sup>9</sup> <http://www.humanfactors.com/home/careers.asp#industry>

## **ADMISSIONS REQUIREMENTS**

Applicants must have a four-year baccalaureate degree or equivalent degree from a regionally accredited institution with a minimum cumulative grade-point average (GPA) of 3.0 out of 4.0 ('B' average). Prior academic study or employment experience in computing is required; study in other disciplines will also be given consideration. Applicants with a GPA that is less than 3.0 may be considered, but are required to submit standard Graduate Record Exam<sup>10</sup> (GRE) scores.

International applicants must have prior academic performance equivalent to a 3.0 grade-point average or a first-class diploma from an accredited four-year program. Applicants must submit official transcripts of undergraduate or graduate study in original form. If these are not originally in English, official transcripts and a certified English translation must be included. The GRE (standard examination) is required for all foreign applicants.

Strong English language skills are required. Applicants whose native language is not English must submit a TOEFL<sup>10</sup> score or other recognized English evaluation. A score equivalent to at least a TOEFL score of 570 (paper-based), 230 (computer-based), or 88 (internet-based) is required. Other evidence of language proficiency, such as writing samples and GRE scores, may also be evaluated to assess functional English ability.

Entering students are expected to have background in computer programming, interactive multimedia development, and statistics. These competencies may be demonstrated by previous course work, technical certifications, or comparable work experience. Additional details are discussed in the "Prerequisite Background" section later in this document.

All applicants are required to submit the following:

- An electronic or paper application with a well-written statement of purpose that discusses your background and your personal goals relevant to this degree
- Current résumé
- Valid transcripts from all universities listed on the application
- Two (2) letters of recommendation from educational or professional sources

An electronic graduate application is available at the URL [http://www.rit.edu/~w-ptgrd/grad\\_admission.html](http://www.rit.edu/~w-ptgrd/grad_admission.html). Note that there is an underscore, '\_', between "grad" and "admission". Requests for information can also be made from this website.

## **PREREQUISITE BACKGROUND**

This program requires both strong technical and social science skills. Since individuals in this discipline are involved with all stages of the software development lifecycle, students must show evidence of solid object-oriented programming skill *before* entering the program. This can be demonstrated through a standard two-course object-oriented computer programming sequence, or equivalent work experience. Satisfactory programming sequences are available at RIT and at any other colleges and universities. No specific object-oriented programming language is required; however, the Java language is currently recommended.

---

<sup>10</sup> RIT's reporting number for ETS's GRE and TOEFL examinations is 2760.

The following introductory programming courses, in the Java programming language, are available from RIT in on-campus format (prerequisites are shown in parenthesis):

- 4002-217 Programming for Information Technology I (computer literacy)
- 4002-218 Programming for Information Technology II (4002-217)
- 4002-219 Programming for Information Technology III (4002-218)

In addition, students also need to have background in interactive-multimedia programming. This can be accomplished through the following course at RIT, which focus on fundamental interactive media concepts with Adobe Flash (prerequisites are shown in parenthesis):

- 4004-730 Interactive Media Implementation (web development experience equivalent to 4004-741, and a 2-course object-oriented programming sequence; on-campus)

Knowledge of quantitative statistical methodologies, with a social science focus, is critical for this program, since students will be reviewing research studies in the literature – as well as analyzing the results of their own usability evaluations. The following course is available at RIT to provide this background (prerequisite shown in parenthesis):

- 0514-784 Graduate Statistics (none)

Finally, individuals in this field interact with end users as well as with other computing professionals at every stage of the software development lifecycle. As a result, this program emphasizes both design and writing. Therefore, solid writing and verbal communication skills are vital.

All prerequisite study must be completed with a ‘B’ grade or better. If you have completed prerequisite work at another college or university, please have an official transcript sent to RIT. If you have equivalent work experience relevant to any prerequisite, information relevant to this should be provided in the personal statement. Please provide sufficient detail so that the depth of experience and knowledge can be determined. Some form of verification, such as copies of training certificates, should also be included.

## **STARTING YOUR PROGRAM OF STUDY**

Full-time students may begin their program of study in the fall term. Applications for part-time study are accepted for fall and spring terms. The department currently offers a very limited selection of courses in the summer term; however, it is typically not possible to obtain a full-time course load during this term.

### **Application Deadlines**

The application process typically takes four (4) weeks *after* RIT receives a complete application. However, foreign applications may take longer due to slow mail service and visa issues. The department faculty evaluates applicants only after all of the information has been submitted and is verified by a counselor in RIT's office of Graduate Enrollment Services.

The RIT calendar is based upon a 10-week academic term called a “quarter.”<sup>11</sup> Students are admitted for the fall or spring quarters only, as shown in the following table:

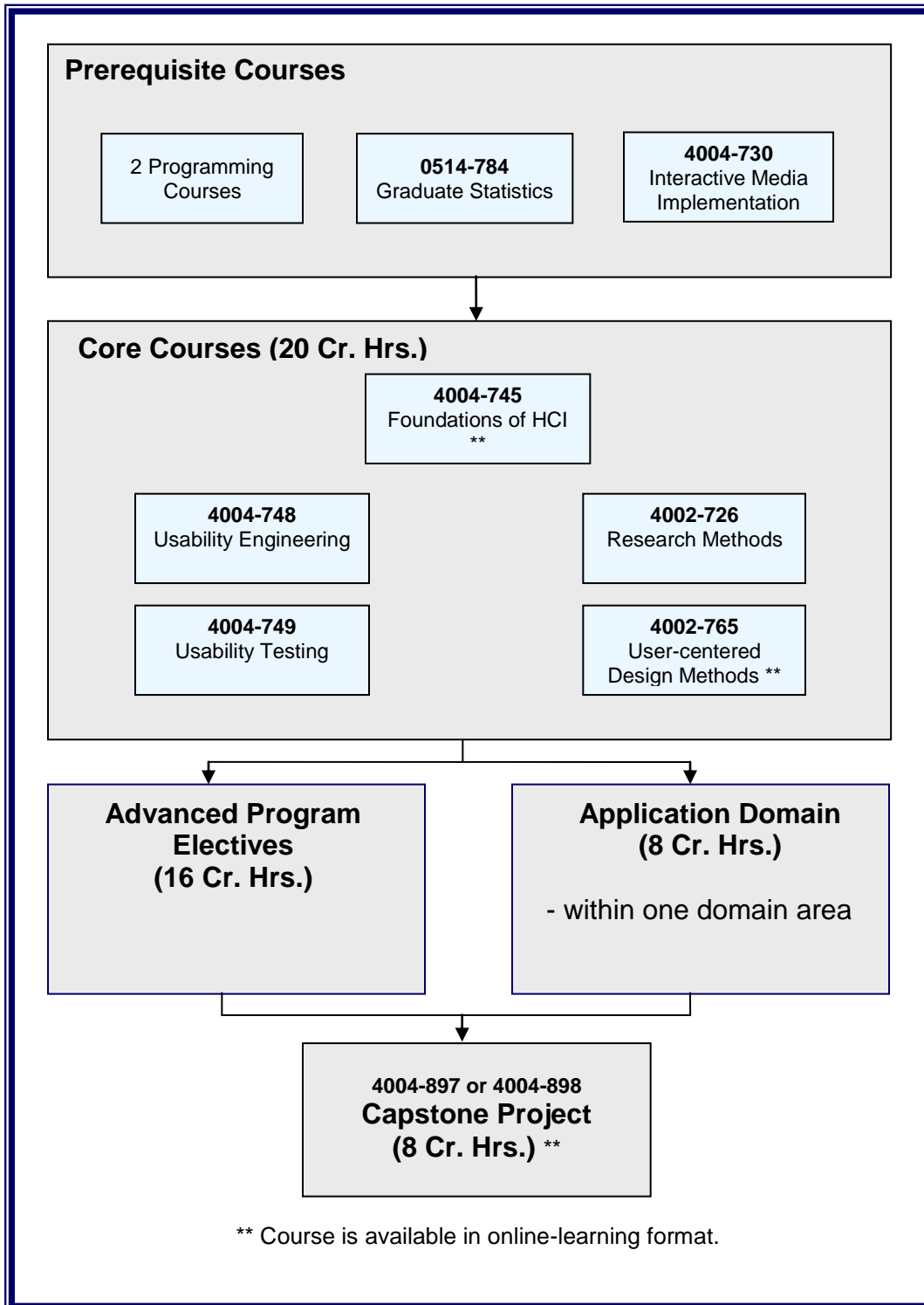
<b>Quarter</b>	<b>Typical Starting Date of Quarter</b>	<b>Domestic Application Deadline (Part Time)</b>	<b>International Application Deadline (Full Time)</b>
Fall	~ September 3	August 1	July 1
Winter	~ December 1	Not Permitted	Not Permitted
Spring	~ March 7	February 1	Not Permitted
Summer	~ June 1	Not Permitted	Not Permitted

---

<sup>11</sup> The RIT academic calendar consists of four 10-week terms called “quarters,” identified as: fall, winter, spring and summer. Each quarter is designated by a 5-digit, numeric code consisting of the calendar year in which the academic year started (e.g. academic year 2011-12 begins September 2011; so 2011 plus a 1-digit quarter identifier (fall = 1; winter = 2; spring = 3; summer = 4). For example, fall of academic year 2011-12 is quarter 20111; winter 2011-12 is quarter 20112, spring 2011-12 is quarter 20113, and summer 2011-12 is quarter 20114.

## CURRICULUM

MS/HCI is a 52 quarter-credit MS degree composed of eleven (11) courses plus an 8-credit MS capstone experience. Course requirements are shown below.



## Program Core

All students complete five (5) courses (20 credits) for the program core. Some of these courses are offered in both on-campus and online formats. The required courses for the core are shown below. Prerequisites and other requirements are shown in parenthesis after the course name.

<b>Required Core Courses: Number and Title</b>	<b>Credits</b>
4002-726 Research Methods **	4
4004-745 Foundations of Human-Computer Interaction **	4
4004-748 Usability Engineering (4004-745, 4004-730)	4
4004-749 Usability Testing (4004-748)	4
4002-765 User-centered Design Methods (4004-745) **	4
<b>Total credits required</b>	<b>20</b>

\*\* designates a course available in online format

## Advanced Program Electives

To gain depth in this technical field, MS/HCI students select four (4) courses (16 credits) of upper-level electives within the domains of interface and interaction design, usability engineering, or interface architecture. Students are encouraged to consult with their advisor or the graduate coordinator on course selection. Course options are shown below.

<b>Advanced Program Elective Course Options</b>	<b>Credits</b>
4002-892 CSCW and Groupware ** (4004-745) (offered periodically)	4
4002-823 Agent-Based Modeling ** (4004-730 and 0514-784)	4
4004-755 Advanced Topics in HCI ** (4004-745)	4
4004-774 Eye Tracking: Theory, Methods, and Applications (4004-745 and Statistics)	4
4004-780 Application Domains in HCI (4004-745)	4
4004-781 Usability Economics ** (4004-745 and 4004-748)	4
4085-757 Graphical Elements of the User Experience (4004-730)	4
4085-855 Innovation and Invention (advanced technical/creative skills)	4
0514-785 Advanced Perception ‡	4
0514-787 Advanced Cognition ‡	4
<b>Total credits required</b>	<b>16</b>

\*\* designates a course available in online format

‡ offered by the Department of Psychology; on-campus only

## Application Domain Courses

To provide breadth in a subject area relevant to human-computer interaction, students choose two (2) courses (8 credit hours) from one of the application domains below. Prior approval from the graduate coordinator or student's advisor is required. Depending upon the area chosen and the student's background, this may require the fulfillment of additional prerequisites.

<b>Domain Course Options</b>	<b>Credits</b>
<b>Game Design</b>	
4085-791 History of Computing Games	4
4085-794 Online Identity, Community & Social Behavior	4
4085-744 Building Online Communities (4085-794)	4
<b>Interactive Multimedia Development</b>	
4085-746 Programming for Interactive Multimedia (4004-730)	4
4085-738 Multi-User Media Spaces (4004-746)	4
4085-727 Digital Audio and Computer Music (4004-730)	4
<b>Web Development</b>	
4004-737 Web Site Design and Technology (4004-741)	4
4002-736 Web Client-Side Programming (4004-737)	4
4004-739 Web Server-Side Programming (4004-737 and 2-course OOP sequence)	4
<b>Application Development</b>	
4002-710 Object Technologies (4002-714) **	4
4002-720 Data Modeling and Database Implementation (2-course OOP sequence) **	4
4002-725 Component Development (4002-710) **	
<b>Learning &amp; Human Performance</b>	
4002-722 Fundamentals of Instructional Technology **	4
4002-723 Interactive Courseware (4002-722) **	4
4002-724 Performance Support Systems Design (4002-722) **	4
<b>Bioinformatics</b>	
4002-763 Advanced Bioinformatics Computing (4002-762)	4
(another bioinformatics course: 1001-xxx; with faculty approval)	4
<b>Ergonomics and Safety</b>	
0303-731 Advanced Topics: Ergonomics/Human Factors (0303-730) †	4
0303-734 Systems Safety Engineering †	4
<b>Special Topics</b>	
Students can use this option to design a concentration from other courses offered by the IST department or from graduate-level coursework offered by other departments at RIT or other universities. The Graduate Program Coordinator must approve the concentration before the courses are taken.	<b>8</b>
<b>Total credits required</b>	<b>8</b>

\*\* designates a course available in online format

† offered by the Industrial and Systems Engineering Department

The RIT course schedule is available at <http://register.rit.edu/courseSchedule/>. An academic planning site is available at <https://infocenter.rit.edu/> (Public section with orange header) to help you plan your studies.

In situations in which a student can demonstrate that he or she has already attained the skills provided by a course, either through other study or work experience, an alternative course may be substituted. This substitution must be approved *in advance* by the Graduate Coordinator.

### MS Capstone

Each student completes an eight-credit (8) graduate capstone investigation as the culminating experience for this MS degree. The capstone is an empirical study of a HCI problem or the development of a software product through user-centered design processes. The student works with a committee of faculty to develop a plan of study that investigates an HCI area of interest in depth. Students receive guidance from their committee faculty in choosing an appropriate topic and in developing an experimental design, where appropriate. This capstone is a significant scholarly effort. Students will either participate in research that is suitable for publication in a peer-reviewed journal or will develop a project that will be disseminated in an appropriate public venue. It may be completed either on-campus or online.

Required Capstone Courses	Credits
4004-897 MS HCI Thesis	8
4004-898 MS HCI Project	8
<b>Total credits required</b>	<b>8</b>

There are no other options for completing the capstone requirement for this MS degree.

### PLANS OF STUDY

The following charts show the standard degree plan for full- and part-time study. Full-time students are expected to take three (3) courses each quarter. Under this plan and assuming that all prerequisites have been completed, the program can be completed in six (6) consecutive quarters of study. However, students should be aware that depending upon the area of investigation, the HCI capstone may take longer than two terms (six months) to complete.

#### Full-Time Study

Quarter	Course #1	Course #2	Course #3
<b>Year #1</b>			
<b>Fall</b>	<b>4004-745</b> Fundamentals of HCI	<b>4002-726</b> Research Methods	Application Domain Course
<b>Winter</b>	<b>4004-748</b> Usability Engineering	Advanced Program Elective	Application Domain Course
<b>Spring</b>	<b>4004-749</b> Usability Testing	<b>4002-765</b> User-Centered Design Methods	Advanced Program Elective
<b>Year #2</b>			
<b>Fall</b>	Advanced Program Elective	<b>4004-897</b> or <b>4004-898</b> HCI Capstone	-
<b>Winter</b>	Advanced Program Elective	<b>4004-897</b> or <b>4004-898</b> HCI Capstone	-

The department offers a limited selection of courses in summer terms; therefore, it is typically not possible to obtain a full-time course load during this quarter.

The program can be completed part-time at either one or two courses per quarter. Below is a general plan for part-time study at two (2) courses per term. Availability of courses for the advanced program electives and application domain study varies with the area chosen.

### **Part-Time Study**

<b>Quarter</b>	<b>Course #1</b>	<b>Course #2</b>
<b>Year #1</b>		
<b>Fall</b>	<b>4004-745</b> Fundamentals of HCI	<b>4002-726</b> Research Methods
<b>Winter</b>	<b>4004-748</b> Usability Engineering	Advanced Program Elective
<b>Spring</b>	<b>4004-749</b> Usability Testing	<b>4002-765</b> User-Centered Design Methods
<b>Year #2</b>		
<b>Fall</b>	Advanced Program Elective	Application Domain Course
<b>Winter</b>	Advanced Program Elective	Application Domain Course
<b>Spring</b>	Advanced Program Elective	<b>4004-897</b> or <b>4004-898</b> HCI Capstone
<b>Summer</b>	<b>4004-897</b> or <b>4004-898</b> HCI Capstone	-

### **PROGRAM COST**

The cost of graduate tuition at RIT is at <http://finweb.rit.edu/sfs/billing/tuitionandfees/1112/>. See <http://www.rit.edu/emcs/financialaid/costs1112.html> for estimates of the full cost of graduate study at RIT.

### **Financial Aid**

The Department of Information Sciences & Technologies can offer an Institute Merit Scholarship to qualified students who are not receiving full financial support from other sources, such as from an employer, etc. The merit scholarship is awarded initially for one (1) academic year (three academic terms) from the term in which the student is admitted. For terms beyond the initial award, the student must submit an application to request continuation of the scholarship. The award will, in general, be extended if the student has made continual progress and has maintained at least a 3.0/4.0 ('B' average) grade-point average (the minimum required to graduate from a MS program at RIT).

RIT financial aid information is available at <http://www.rit.edu/emcs/financialaid/>.

### **RIT POLICIES AND REGULATIONS**

#### **Transfer of Credit**

The student may request to transfer up to twelve (12) quarter-credit hours into this program. The courses must be directly related, at the graduate level, and have been taken at a regionally accredited university within the past 5 years with a grade of 'B' or better. Undergraduate courses cannot be approved. A written proposal should be submitted that addresses the relevance of the course(s) to this degree program. The Graduate Coordinator will evaluate each

proposal and approve transfer credit. For currently enrolled students, the proposal must be submitted and approved before the course(s) are taken.

### **RIT's 7-Year Degree-Completion Rule**

A student must successfully complete all of the requirements for his/her MS program within seven (7) years of the date of the first (oldest) course counted towards the student's degree. This requirement includes courses transferred into the program from other RIT departments or other universities, but excludes any prerequisite courses. For example, if the first course was completed in the fall quarter of 2011 (20111), September 2011, then the program must be completed by the end of the quarter fall quarter of 2018 (20181), mid-November 2018. Please contact the graduate coordinator immediately if you find that you are coming close to the 7-year deadline.

### **Academic Honesty**

Academic honesty is an expectation of all students at RIT. Any act of improperly representing another person's work as one's own is an act of academic dishonesty. The RIT code of academic conduct is documented in the university's Policies and Procedures manual:

- <http://www.rit.edu/academicaffairs/policiesmanual/sectionD/D8.html>
- <http://www.rit.edu/academicaffairs/policiesmanual/sectionC/C0.html>

The IST department's academic honesty policy is also posted on the departmental website (<http://ist.rit.edu/?q=node/108>). Additional details of the ramifications of violating these policies are available in the Graduate Student Handbook.

### **CONTACT INFORMATION**

Please visit the Department of Information Sciences & Technologies' web site at <http://www.ist.rit.edu> for more information and the main RIT web site at <http://www.rit.edu> for general information on RIT and links to all programs. More information on the Distance Learning program can be found at the web site <http://online.rit.edu/>.

For additional information on this program or to schedule an appointment (office, phone or chat) with the Graduate Program Coordinator, our contact information is shown below.

**US Mail:**

Graduate Program Director  
School of Informatics  
Golisano College of Computing & Information Sciences  
Rochester Institute of Technology  
152 Lomb Memorial Drive  
Rochester, New York 14623-5603

**Program Director:**

Prof. Michael Yacci  
[may@rit.edu](mailto:may@rit.edu)

**E-mail:** [InformaticsGrad@rit.edu](mailto:InformaticsGrad@rit.edu)

**Telephone:** (585) 475-2700

**FAX:** (585) 475-6548

## **COURSE DESCRIPTIONS**

### **School of Informatics Courses**

Descriptions of the courses in the MS/HCI degree offered through the School of Informatics are available at <http://www.ist.rit.edu/?q=node/187>. Note that courses can have either the 4002-xxx (general IT), 4004-xxx (interactive multimedia), or 4085-xxx (Interactive Games & Media department courses) course number stub. Be sure to select the appropriate department name in the department drop-down box.

### **Courses from Other Departments**

#### **0303-731 Advanced Topics: Ergonomics/Human Factors**

Advanced topics are selected based on current ergonomic and human factors issues and interests of students. Taught in a seminar format. (Offered in winter terms in even years.)

Credit: 4; Class 4

Prerequisites: 0303-730 or equivalent

#### **0303-734 Systems Safety Engineering**

This course acquaints students with practical aspects of safety engineering. Students acquire a working knowledge of legal and technical aspects of safety. Focus is on a systems approach to safety engineering. Topics include Workers Compensation, OSHA, Consumer Product Safety Commission and various hazard analysis and utilization techniques. Students also are exposed to various theories of accident causation, research methodology and ways of evaluating safety programs and related research. (Offered in winter terms in odd years.)

Credit: 4; Class 4

Prerequisites: None

#### **0514-784 Graduate Statistics**

This course introduces students to advanced inferential parametric and non-parametric data-analysis techniques commonly used in psychological research. The focus is on the conceptual understanding of these statistics, how different statistical procedures are applied in different research methods, how to perform analyses, how to interpret the results in the context of the research question, and how to communicate these results.

Credit: 4; Class 3, Lab 1

Prerequisites: None

#### **0514-785 Advanced Perception**

This course is organized so students will work in groups on various projects as well as covering topics through readings and classroom instruction. The course is designed to provide students with a deeper understanding of topics in perception. The course will examine: temporal and spatial frequency perception; after effects, visual illusions and their relationship to cortical function and pattern perception; color perception; depth and motion perception; higher order perception such as face and object recognition; and music and speech perception. The goal is to cover current research and theories in perception, looking at current developments and their antecedents. There will be lab time for students where they will examine empirical findings in perception and develop their research skills in the field.

Credit: 4; Class 3, Lab 1

Prerequisites: None

#### **0514-787 Advanced Cognition**

This course will survey theoretical and empirical approaches toward understanding the nature of the mental processes involved in attention, learning and memory, problem solving and decision making, language, planning, and motor control. The course attempts to present a balance between historically significant findings and current "state-of-the-art" research. Toward this end, fundamental readings and modern augments have structured the nature and direction of scientific debate in these fields will be discussed. Critical evaluation of the research at the crux of each debate will be emphasized. Students will be guided in critical thinking about possible new cognitive experiments that would put current theories to the test and provide grounds for supporting, modifying, or rejecting them. The course also interweaves material on laboratory research and practical applications in these areas.

Credit: 4; Class 3, Lab 1

Prerequisites: None

# **2011-2012 Academic Calendar**

(not included)

# **2012-2013 Academic Calendar**

(not included)

# **MS/Human-Computer Interaction Worksheet**

(not included)