

MHCIHF

Master's Graduate
Student Handbook

*Rice University
Department of Psychological
Sciences*

Rice University
The Department of Psychological Sciences
Master of Human-Computer Interaction & Human Factors
Program

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Introduction

Human-Computer Interaction & Human Factors (HCIHF) is the scientific study of people in the design of products, services, and systems. The Master of Human-Computer Interaction & Human Factors (MHCIHF) program trains students to understand, design, and assess complex technological systems, with an emphasis on how human perceptual, cognitive, and physical abilities inform those designs. As advancing technology becomes more ubiquitous, it will change the way we work and interact. Failure to consider the human side of technology will have ever-increasing costs. Thus, HCIHF professionals will be integral in helping to design technologies of the future in areas such as autonomous vehicles, augmented reality, advanced medical systems, mobile computing, and other information/communication technologies.

As the home of Rice University, the city of Houston offers key advantages to our students. Houston is a vibrant, technologically sophisticated metropolis, making it an ideal place in which to study human-computer interaction and human factors. As a student, you will have unparalleled access to industries, people, and other institutions of higher learning that will enhance your educational experience here at Rice. Among these industries is the Johnson Space Center, home of NASA's famed Mission Control. Because 14 astronauts and many HCIHF professionals on-site are Rice graduates, we maintain a special relationship with NASA's JSC through the Rice Space Institute. In the energy sector, Houston is widely considered to be the energy capital of the world, with over 5,000 energy firms locally. Houston is also home to the Texas Medical Center, the largest medical center in the world, with 21 hospitals, 9 medical/nursing schools, and 8 research institutes. As the most ethnically and racially diverse city in the United States, Houston offers excellent opportunities to study a wide range of different populations, and the Texas Medical Center provides easy access to patient and medical provider populations as well.

The MHCIHF program is designed for students from a variety of backgrounds, including psychology and engineering. Students will complete 36 hours across 11 courses, including a summer internship and a capstone project. The program is designed for a student to complete in 2 academic years. Upon graduation, students will have the skills to:

- Understand fundamental human perceptual, cognitive, and physical capabilities.
- Understand the interplay between technology and human behavior.
- Be able to collect human performance data and have the statistical skill to analyze and explain those data.
- Apply all of this knowledge to the design and assessment of any system.

Academic Requirements

The MHCIIHF degree is a full-time non-thesis master's degree. For general university requirements, please see [Non-Thesis Master's Degrees](#). For additional requirements, regulations, and procedures for all graduate programs, please see [All Graduate Students](#). Students pursuing the MHCIIHF degree must complete:

- A minimum of 11 courses (36 credit hours) to satisfy degree requirements.
- A minimum of 36 credit hours of graduate-level study (coursework at the 500-level or above).
- A minimum of 24 credit hours must be taken at Rice University.
- A minimum overall GPA of 2.667.
- A minimum GPA of 3.000 in required coursework.
- A maximum of 2 courses (6 credit hours) from transfer credit.
- An internship.* All students in the Master's program are required to intern in the summer between their two years of study.
- A capstone design course (this is a project course, supervised jointly by the MHCIIHF faculty, and should be taken in the second semester of the second year).

Course Requirements

Core Requirements

- PSYC 502 – Advanced Psychological Statistics I
- PSYC 503 – Advanced Psychological Statistics II
- PSYC 520 – Foundations of Cognitive Psychology
- PSYC 531 – HF/HCI Research Seminar (Fall Semester I)
- PSYC 531 – HF/HCI Research Seminar (Spring Semester I)
- PSYC 531 – HF/HCI Research Seminar (Fall Semester II)
- PSYC 531 – HF/HCI Research Seminar (Spring Semester II)
- PSYC 540 – Foundations of Engineering Psychology
- PSYC 541 – Human-Computer Interaction
- PSYC 561 – Teaching in Psychology
- PSYC 609 – Methods in Human-Computer Interaction

Internship Requirement

- PSYC 595 – Human-Computer Interaction & Human Factors Professional Master’s Internship*

Elective Requirements

select 2 from the following:

- PSYC 504 – Computer Applications in Technology
- PSYC 521 – Psychology of Perception
- PSYC 522 – Information Processing and Attention
- PSYC 524 – Memory
- PSYC 525 – Psycholinguistics
- PSYC 527 – Reasoning, Decision Making, and Problem Solving
- PSYC 530 – Foundations of I-O Psychology
- PSYC 535 – Human Factors/Ergonomics
- PSYC 543 – Computational Modeling of Cognitive Processes
- PSYC 581 – Vision Science
- PSYC 601 – Multivariate Statistics
- PSYC 602 – Psychometrics
- PSYC 630 – Advanced Topics in I-O
- PSYC 634 – Personnel Psychology
- PSYC 640 – Topics in Human-Computer Interaction
- PSYC 662 – Non-traditional Interfaces
- PSYC 663 – Medical Human Factors
- PSYC 664 – Usability Assessment
- PSYC 667 – Cyber Security Human Factors
- PSYC 668 – Human Factors of A.I.

Capstone Requirement

- PSYC 600 – Human-Computer Interaction & Human Factors Professional Master’s Capstone Project**

* All students in the Master’s program are required to intern in the summer between their two years of study. That internship is reflected in the student's course of study as PSYC 595, and students should register for that summer course. Faculty in the MHCIFH area have relationships with multiple local and national companies and government labs that would be suitable. Students sponsored by their employer may return to that company for the summer internship, provided that the work is classified as human factors-related. In exceptional circumstances, the Director of the MHCIFH program may allow a student to substitute research conducted with a member of the Rice faculty for the internship.

** The capstone requirement, PSYC 600, is a project course supervised jointly by the MHCiHF faculty, and should be taken in the second semester of the second year.

Proposed Plan-of-Study

The following plan-of-study represents an example five-semester sequence in which students pursuing the MHCiHF degree complete the required coursework. Schedules will be based on course availability each semester.

1st Semester (Fall) – 11 Credit Hours

Course Number	Course Title	Credit Hours
PSYC 531	HF/HCI Research Seminar	1
PSYC 502	Advanced Psychological Statistics I	4
PSYC 541	Human-Computer Interaction	3
PSYC 609	Methods in Human-Computer Interaction	3

2nd Semester (Spring) – 10 Credit Hours

Course Number	Course Title	Credit Hours
PSYC 531	HF/HCI Research Seminar	3
PSYC 503	Advanced Psychological Statistics II	4
PSYC 540	Foundations of Engineering Psychology	3

Summer – 1 Credit Hour

Course Number	Course Title	Credit Hours
PSYC 595	HCIHF Professional Master’s Internship	1

3rd Semester (Fall) – 10 Credit Hours

Course Number	Course Title	Credit Hours
PSYC 531	HF/HCI Research Seminar	1
PSYC 520	Foundations of Cognitive Psychology	3
PSYC 561	Teaching in Psychology	3
PSYC XXX	Elective One	3

4th Semester (Spring) – 10 Credit Hours

Course Number	Course Title	Credit Hours
PSYC 531	HF/HCI Research Seminar	1
PSYC 600	HCIHF Professional Master’s Capstone Project	6
PSYC XXX	Elective Two	3

Academic Progress and Expectations

Expectations

The program aims to train students to acquire the skills and knowledge needed to be a successful professional in Human-Computer Interaction & Human Factors. This means that students will be trained in both research and the application of that research to practical concerns. We expect that students will embrace not only the practical aspects, but the research and knowledge of human behavior that lies behind these tools and techniques.

All graduate students are expected to perform well in classes and in conducting research throughout their time in the program. We encourage students to become involved in a faculty mentor's research laboratory and to present and publish this research at professional venues as appropriate.

Students whose cumulative grade point average or the average for the most recently completed semester (including the summer semester) falls below 3.0 are placed on probationary status. Grades of B- reflect marginal but passing performance, and grades below B- are considered failing. Students making below a B- in a required course are typically required to retake the course. Given the restricted timeline of the program, the course may not be offered again before the 2-year time limit is reached. In these cases, the faculty may allow a student with a grade of C+ to retake the final or do other work demonstrating mastery of the material in order to satisfy the requirement. Only one make-up chance will be granted.

For the university's policies on academic probation and dismissals, please refer to the General Announcements: <https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/>.

The student must complete an internship in the summer following their first year in the program. This internship may be performed at the student's home employer, or the student may obtain professional-level employment elsewhere. The work must be related to human-computer interaction and human factors.

The student must serve as a Teaching Assistant (TA) for one course in the fall semester of their second year. This may consist of being an assistant to a professor in an undergraduate or graduate course, and may involve grading, some tutorial work, and/or guest lecturing. The student will most often be assigned to an HCIHF course, but may instead be assigned where he/she is needed in lower-level undergraduate courses.

During the final semester of the program, students are required to take the capstone project course. This course allows students to integrate all of the knowledge they have gained in their MHCIF coursework in the form of a capstone project in the area of human-computer interaction and human factors. The capstone may be either research-focused or application-focused. Research-focused projects will conduct original research in an area that has been mutually agreed upon by the student and the MHCIF faculty. Application-focused projects will

apply fundamental user-centered design principles in the design, iteration, and evaluation of product, service, or system that has been mutually agreed upon by the student and the MHCIIHF faculty. Both research and application capstones include a written component, consisting of an APA-compliant report of sufficient length to cover the material, and a presentation component, in which the student presents the work to the HCI/HF seminar course (PSYC 531). This requires the proposal be approved in the semester prior to enrolling in the capstone course. A first draft of the proposal is due halfway through the fall semester (exact date will vary with the academic calendar) and it must be approved by the end of the semester.

Petitions and Appeals

Petitions and appeals involve exceptions to academic requirements, regulations, and judgments.

Course Substitutions

A student wishing to substitute a course for a required course must obtain the approval of the MHCIIHF faculty. The faculty will then recommend the substitution to the Director of Graduate Studies, who decides whether or not to approve the recommendation. If the course to be used as a substitute is on the same topic as the required course, then the advice of the current instructor of the required course will be sought. If the recommendation is not approved by the Director of Graduate Studies, the MHCIIHF faculty can appeal the decision, first to the graduate committee and then to the whole faculty. If the recommendation is approved, the student will need to submit a Graduate Request for Transfer Credit form to the Registrar with a copy of the transferred course's syllabus.

Petitions seeking exceptions to academic requirements or regulations should be submitted in writing at least 30 days before the requirement or regulation takes effect.

Academic Decisions

Petitions regarding the reconsideration of an academic decision must be submitted in writing within 15 days from the time that the student knew or should reasonably have known of the decision being petitioned, or within 15 days after an unsuccessful effort to resolve the situation informally. Petitions should include all relevant information that may impact the decision. If a student wishes to appeal an academic decision made by an individual faculty member, he or she should present, in writing, an appeal to the standing graduate committee, who will reconsider the decision in view of the information provided in the petition and consult with the Department Chair when appropriate. This committee may choose to return the matter to the faculty member, acting as a committee of the whole, for further consideration. Appeals should include all relevant information that may impact the appeal.

Academic decisions are afforded one level of appeal. Departmental decisions, such as dismissal, are appealed to the Dean of Graduate and Postdoctoral Studies as described in the General Announcements.

Student Wellbeing

Graduate Travel

Thanks to joint support from the School of Social Sciences (SoSS), the Department of Psychological Sciences is able to provide \$1000 to each graduate student per academic year (07/01 – 06/30) for travel-related professional development.

- Graduate students are eligible: (a) if they are registered to attend a conference, workshop, or other developmental activity requiring travel that is approved by their advisor (or Program Director(s), for the Master's students), or (b) they have first applied other available funds before using these departmental funds (e.g., grant funding from their advisor, other internal funding, travel awards, etc.).
- Graduate students can apply these funds for multiple travel-related professional development activities throughout the current academic year (07/01 – 06/30), until they have spent the full amount available to them.
Here is an example: A student submits \$1400 in receipts for a conference (airfare, hotel, taxi), and will be reimbursed \$500 from their advisor's grant funds. Then the student is reimbursed an additional \$900 to pay for the full cost of the conference (leaving \$100 that remains unspent -- unless the student takes another trip and requests this \$100).
- All travel accommodations must be typical and appropriate (e.g., rooming with others when possible; traveling in economy class).
- Submit all travel receipts for reimbursement to Carrie Hodgeson as soon as you return from your trip. Please make sure each receipt shows the full amount of the purchase and the last 4 digits of the credit card used to make the purchase - Rice Payables will not accept them otherwise. All receipts must be in PDF format.
- The Department cannot reimburse any expenses prior to the completion of your travel, including hotel deposits or conference registrations. If advance expenses cause a problem, talk with Carrie and the admin team will look at options.

Travel funds are limited to the use stated above. Other questions should be brought to the department's Director of Graduate Studies.

Title IX

Rice encourages any student who has experienced an incident of sexual, relationship, or other interpersonal violence, harassment, or gender discrimination to seek support. There are many options available both on and off campus for all graduate students, regardless of whether the perpetrator was a fellow student, a staff or faculty member, or someone not affiliated with the university.

Students should be aware when seeking support on campus that most employees are required by Title IX to disclose all incidents of non-consensual interpersonal behaviors to Title IX professionals on campus who can act to support that student and meet their needs. The therapists at the Rice Counseling Center and the doctors at Student Health Services are confidential, meaning that Rice will not be informed about the incident if a student discloses to one of these

Rice staff members. Rice prioritizes student privacy and safety, and only shares disclosed information on a need-to-know basis.

If you are in need of assistance or simply would like to talk to someone, please call Rice Wellbeing and Counseling Center, which includes Title IX Support, at x3311 (713-348-3311).

Policies, including Sexual Misconduct Policy and Student Code of Conduct, and more information regarding Title IX can be found at <https://safe.rice.edu>.

Grievances and Problem Resolution

The Department of Psychological Sciences takes grievances and problems seriously as soon as they are raised, and it handles them through the appropriate channels and policies that reflect expertise and experience in handling them appropriately.

In addition to being in agreement with the regulations stated in this Master's Graduate Student Handbook, students must also be in agreement with the university's General Announcements and the Code of Conduct. If there ever is conflicting information or conflicting implications given the grievance or problem at hand, university-wide regulations always take precedence over department-wide regulations, and department-wide regulations take precedence over MHCIFH-wide regulations.

Whenever in doubt, students should seek help first at the department level (Graduate Coordinator, Program Director, Director of Graduate Studies, and/or Department Chair) and then at the central administration level (Office of Graduate and Postdoctoral Studies).

It is always helpful to be informed of the university's policies on grievances and problem resolution, before any grievances and problems arise. Therefore, please refer to the General Announcements: <https://ga.rice.edu/graduate-students/rights-responsibilities/dispute-resolution/>.

The Department of Psychological Sciences is resolutely committed to an environment that promotes deep intellectual engagement and high research productivity, as supported by strong mentorship, teamwork, and collegiality. Ultimately, the department—faculty, staff, graduate students, and alumni—seek to strongly support and celebrate the academic and professional successes of its graduate students.
