

University of Houston  Clear Lake
School of Human Sciences & Humanities

**INFORMATION AND
APPLICATION**

**General Psychology
Master of Art's Program**

**Applied Cognitive Psychology
Sub-plan**

and

**Human Factors/Ergonomics
Certificate**

April 2009

UHCL General Psychology Master's Program
Applied Cognitive Psychology Sub-Plan
And
Certificate in Human Factors and Ergonomics

What is Applied Cognitive Psychology?

Applied Psychology, generally speaking, is the application of principles and techniques of Psychology to a real world problem. In Applied Cognitive Psychology (ACP), principles and methods associated with Cognitive Psychology are applied to the Human-Machine Interface to improve the usability and effectiveness of the interface. There are many terms used to refer to the areas of research and practice associated with applied cognitive psychology: Usability, Human-Computer Interaction, Experience Design, User Centered Design, Ergonomics, among others. Human Factors is an “umbrella” term that can be used to refer to any of these. The Dictionary for Human Factors/Ergonomics by James H. Stramler (Boca Raton, LA: CRC Press, 1993) defines Human Factors as follows:

“Human Factors is that field which is involved in conducting research regarding human psychological, social, physical, and biological characteristics, maintaining the information obtained from that research, and working to apply that information with respect to the design, operation, or use of products or systems for optimizing human performance, health, safety, and/or habitability.”

Thus is by its nature, Human Factors is interdisciplinary and can be applied to software engineering, interface design, industrial engineering, instructional technology, industrial hygiene, architecture, medical technology, etc. The keystone of the application of Human Factors to these industries is the utilization and implementation of User Centered Design, a process that insures that the requirements of the ultimate user of the technology (the human) are integrated into the design and construction of the technology. The proliferation of technology in industry has generated an increased demand for professionals with knowledge of the process and methods associated with the User Centered Design Process. Further, many interdisciplinary academic programs needs researchers and instructors to build the knowledge base necessary for the continued development of efficient and usable technology.

Human Factors and Ergonomics at UHCL

Through an integrated sequence of coursework, practicum, research, and hands on activities, UHCL’S **Applied Cognitive Psychology Sub-plan** is designed to focus on Human Factors and thus provides students with a well-rounded foundation in: psychology, the user centered design process, and the methods used to evaluate human-machine interfaces. Students will obtain basic competency in perception, cognition, and information processing systems as well as how to apply this knowledge to the design of the Human-Machine interface. Practicum and research experiences will be provided in laboratory and industrial settings. All students will complete a major research project prior to graduation. The sub-plan includes a course sequence that has can prepare the student to take the exam to become a Certified Professional Ergonomist (CPE) or Certified Human Factors Professional (CHFP). Furthermore, graduates will be prepared to pursue doctoral degrees in psychology with a focus on the human machine interface. The **Human Factors/Ergonomics Certificate** is designed for individuals who have already earned a master’s degree in Psychology or a related discipline and who would like to complete the coursework that would prepare them for the CPE or CHFP exam. UHCL has one of the few Master’s program in the state of Texas explicitly designed to prepare people to work in industry upon graduation. Some of the industry partners with this program include: Schlumberger, Exxon, Chevron, Lockheed, and United Space Alliance.

M.A. General Psychology/Applied Cognitive Psychology Sub-Plan Requirements

Students enrolled in the M.A. General Psychology Program and the Applied Cognitive Psychology sub-plan complete the following requirements:

General Psychology Requirements

PSYC 6036/6037	Research Design & Statistical Measurement I & II
Select 3 of the 5 below	
PSYC 5235	Learning Principles
PSYC 5532	Advanced Social Psychology
PSYC 6134	Biological Basis of Behavior
PSYC 5031	Human Growth and Development
PSYC 5332	Organizational Psychology

ACP Requirements

PSYC 6832	Advanced Cognitive Psychology <i>An empirical and theoretical examination of human cognitive processes. Possible topics include perception, memory, problem solving and artificial intelligence.</i>
PSYC 6434/ INDH 5334	Human Factors Engineering <i>An analysis of the principles of human factors, along with an introduction and overview of the HF/E disciplines</i>
PSYC 6431	User Centered Design <i>How users should be included in the design process including needs analysis, requirements writing (so it is interpretable to other disciplines!), iterative testing of low/medium/high fidelity prototypes, implementation of requirements, and evaluation.</i>
PSYC 5931	Research Topic: Human Factors Methods and Analysis <i>Human Factors methods necessary for developing and testing human-machine interfaces and systems that support efficient and effective performance.</i>
PSYC 5911	Research Topic: Human Factors & Ergonomics Seminar <i>Ethnography, Safety, Warnings, Ethics, Career options, Networking, Vita development, Grant writing (1 hour class taken every semester enrolled in the program)</i>
PSYC 5931	Research Topic: Practicum in Human Factors/Ergonomics (6 hours)

Sub-Plan Electives (select 1)

PSYC 5339	Training and Development
CSCI 3131	Programming with Visual Basic
INDH 4231	Ergonomics and Workplace Design
INDH 5335	Ergonomics Methods and Analysis
DMST 5039	Web Design
DMST 5232	Technical Foundation of Digital Media

Master's Option

Internship	PSYC 6739	Graduate Internship (6 hours)
Thesis	PSYC 6939	Master's Thesis (6 hours)

Sample Schedule (M.A. Program)

Year 1	Fall	Research & Stats I, Cognitive Psychology, User Centered Design, HF/E Seminar
	Spring	Research & Stats II, HF Engineering, PSYC Core, HF/E Seminar
Year 2	Fall	PSYC Core, Sub-Plan elective, Practicum in HF/E, HF/E Seminar
	Spring	HF Methods & Analysis, Practicum in HF/E, PSYC Core, HF/E Seminar
Year 3	Fall & Spring	Internship/Thesis, HF/E Seminar

Human Factors/Ergonomics Certificate-Only Program

Students enrolled in the Human Factors/Ergonomics Certificate Program complete the following courses:

PSYC 6036/6037 Research Design and Statistics I and II	6 hours
PSYC 6434/ INDH 5334 Human Factors	3 hours
PSYC 6431 User Centered Design	3 hours
PSYC 5931 Research Topic: Human Factors Methods and Analysis	3 hours
INDH 5335 Ergonomics Methods and Analysis	3 hours

Applied Cognitive Psychology Faculty

Full Time Faculty

Akladios, Magdy, Assistant Professor (Ph.D., West Virginia University)
Biomechanics, safety, industrial hygiene

Hart, Stephanie, Assistant Professor (Ph.D., University of Iowa)
Cognitive psychology, memory

Peres, S. Camille, Assistant Professor (Ph.D., Rice University)
Research design, statistics, cognitive psychology, user-centered design, HCI methods

Adjunct Faculty

Holden, Kritina, Adjunct Professor (Ph.D., Rice University)
Human Computer Interaction, Human Factors in Aerospace

Vos, Gordon, Adjunct Professor (Ph.D., Texas A&M University)
Usability

Applying to the Program

Students wishing to enroll in the Applied Cognitive Psychology Sub-plan or Human Factors/Ergonomics Certificate Program must formally apply. Additional information can be obtained by contacting the faculty coordinator, Camille Peres (281-283-3412; PeresSC@uhcl.edu).

Application requires both **1** and **2** below be completed.

1. Application for admission to the university:

Applicants must complete a university Application for Admission and forward it and all required fees and documents to the university Office of Admissions. Currently there is a \$35 fee for the university admission application. Forms and instructions may be requested from the UHCL Office of Admissions as listed below. The university application should be completed as early as possible before the admissions deadline to allow adequate time for the Office of Admissions to process the application and evaluate transcripts. For further information regarding university admission and to request the necessary forms contact:

Office of Admissions

University of Houston-Clear Lake

2700 Bay Area Blvd.

Houston, Texas 77058-1098

(281) 283-2500

<http://www.uhcl.edu/admissions/index.html>

2. There are 5 components to the application for the Applied Cognitive Psychology Sub-Plan:

- a. An application form (available in the back of this brochure).
- b. A Curriculum Vitae (an expanded resume describing previous education; all work experience; relevant course work and relevant volunteer activities; any honors, presentations, papers, avocations or other relevant life experiences).
- c. A brief essay of purpose and goals stating reasons for wanting this degree and how it fits into career goals.
- d. Two letters of recommendation, at least one from an academic source. The applicant should collect all recommendations and return them in the application envelope along with other application documents. The recommender should place the form in a sealed envelope; sign his/her name across the envelope flap and onto the body of the envelope before returning the envelope to the applicant. Recommendations from academic faculty and/or work supervisors who know the applicant well are especially solicited.
- e. Transcripts from all colleges and universities previously attended (except University of Houston-Clear Lake transcripts which will be generated internally). These transcripts are in addition to the transcripts sent directly to the university Office of Admissions. The applicant should collect all transcripts and include them in the application envelope.
- f. **The Graduate Record Examination (GRE) must reflect scores from the GRE test taken within the past five years.** Official scores are reported to the university through the standard GRE process. The applicant also enters GRE scores onto the plan application form as indicated.

ALL DOCUMENTS MUST BE SENT IN A SINGLE ENVELOPE TO:

Applied Cognitive Psychology Admissions Committee

University of Houston-Clear Lake

Box 307

2700 Bay Area Blvd.

Houston, TX 77058-1098

3. Deadline for Application and Notification of Admissions Decision:

Application to the Applied Cognitive Psychology sub-plan can be made at any point during the year. Currently, admission to the sub-plan only occurs for the Fall semester and the deadline to have an application reviewed for admission is March 15th. It is the applicant's responsibility to insure that his/her application for university admission and supporting transcripts are received by the university **Office of Admissions** and the application envelope containing all required documents is received by the **Applied Cognitive Psychology Admissions Committee** by the dates given.

4. Additional information regarding Applications:

Any evidence of tampering with recommendations or transcripts could result in disqualifying the applicant from admission. Applicants should note that admission to graduate status at the university and to the Master of Arts in Behavioral Sciences-Psychology is not equivalent to admission to the Applied Cognitive Psychology Sub-Plan. In some cases, applicants may be notified of admission to the university and to the M.A. General Psychology Program by the School of Human Sciences and Humanities Advising Office. Any such communication refers only to acceptance into graduate status at the university and to the Behavioral Sciences-Psychology plan. Applicants are not admitted into the Applied Cognitive Psychology Sub-Plan until they receive formal notice from the Applied Cognitive Psychology Admissions Committee that they have been accepted. Students may take master's courses before being formally accepted into Applied Cognitive Psychology sub-plan or Certificate Program; however, certain courses (Practicum and Internship) will be restricted to those students who have been formally admitted into the Applied Cognitive Psychology sub-plan Program.

University of Houston-Clear Lake
APPLIED COGNITIVE PSYCHOLOGY SUB-PLAN
and
HUMAN FACTORS/ERGONOMICS CERTIFICATE-ONLY PROGRAM
Application for Admission

***Applicants are responsible for insuring that the following materials are submitted in a single envelope by the application deadline (March 15):**

- 1) application form
- 2) curriculum vitae
- 3) 1-2 page essay/statement of goals
- 4) two recommendations (at least 1 academic)
- 5) transcript(s)
- 6) GRE scores must also be submitted to the university by the official GRE reporting procedure.

State law requires that you be informed of the following: (1) you are entitled to request to be informed about the information about yourself collected by use of this form (with a few exceptions as provided by law); and (2) you are entitled to receive and review that information.

DATE: _____

NAME: _____

ADDRESS: _____

CITY/STATE/ZIP: _____

TELEPHONE (Home): _____ (Work): _____

Permanent Telephone (if different from above): _____

EMAIL: _____

1. Please check if you are applying to the HF/E certificate-only option (applicants must have already earned a Master's degree in psychology or related discipline): _____

2. Indicate what degree(s) you hold or are completing.

Undergraduate

Major _____ degree from _____ (College or University)

Date (or date expected) _____

Graduate

Major _____ degree from _____ (College or University)

Date (or date expected) _____

3. Please indicate your last 60 hours GPA.

Undergraduate _____ Graduate _____

4. Please indicate your GRE scores. Also indicate when you took the GRE

Date _____ Verbal _____ Quantitative _____ Analytical Writing _____ Date of Exam _____

5. Are you currently enrolled in the UHCL M.A. General Psychology Program? If not, have you submitted a university Application for Admission and transcripts to the UHCL Admissions Office?

Yes No [You must apply for university admission in addition to and separate from this application]

6. From whom are you requesting recommendations?

RETURN THIS FORM ALONG WITH ALL OTHER DOCUMENTS IN A SINGLE ENVELOPE TO:

Applied Cognitive Psychology Admissions Committee

University of Houston-Clear Lake

Box 307

2700 Bay Area Blvd.

Houston, TX 77058-1098