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# HUMAN-COMPUTER INTERACTION AND HUMAN FACTORS

# **Contact Information**

**Psychological Sciences** 

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The Department of Psychological Sciences offers the Master of Human-Computer Interaction and Human Factors (MHCIHF) degree, which examines the scientific consideration of people in the design of products, services, and systems.

Human Factors is responsible for ensuring that systems meet the needs and expectations of the user, and more importantly, conform to the capabilities and limitations of those users. Human Factors can increase the ability of users to use effectively complex systems and enhance the safety of those systems. Human Factors focuses much of its efforts to the study of complex human-machine interfaces such as automobile controls, aircraft cockpits, medical devices, and many others.

Human-Computer Interaction is the subarea within Human Factors particularly concerned with computer systems. Human-Computer Interaction and Human Factors is particularly concerned with issues of usability, that is, how the design of technological systems impacts how efficiently and effectively people can use those systems.

Human-Computer Interaction and Human Factors does not currently offer an academic program at the undergraduate level.

# **Master's Program**

Master of Human-Computer Interaction and Human Factors
 (MHCIHF) Degree (https://ga.rice.edu/programs-study/departments-programs/social-sciences/human-computer-interaction-human-factors/human-computer-interaction-human-factors-mhcihf/)

# Chair, Department of Psychological Sciences

Eduardo Salas

# **Professors**

Michael D. Byrne Patricia DeLucia Eduardo Salas

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For Rice University degree-granting programs:

To view the list of official course offerings, please see <u>Rice's</u> <u>Course Catalog</u> (https://courses.rice.edu/admweb/!SWKSCAT.cat? <u>p\_action=cata</u>)

To view the most recent semester's course schedule, please see <u>Rice's Course Schedule</u> (https://courses.rice.edu/admweb/!SWKSCAT.cat)

# **Psychological Studies (PSYC)**

PSYC 101 - INTRODUCTION TO PSYCHOLOGY Short Title: INTRODUCTION TO PSYCHOLOGY

**Department:** Psychological Sciences **Grade Mode:** Standard Letter

Course Type: Lecture

Distribution Group: Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Lower-Level

**Description:** Survey of topics, problems, and approaches in contemporary psychology. Includes the biological basis of behavior, sensation, perception, attention, learning and memory, thinking, language, abnormal behavior and therapies, personality, and individual differences. Required for psychology majors.

# PSYC 102 - QUANTITATIVE ANALYSIS FOR SOCIAL SCIENCES: PSYCHOLOGY LAB

Short Title: PSYCHOLOGY STATISTICS LAB

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Laboratory

Credit Hours: 0

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Lower-Level

**Description:** This lab companion course to SOSC 302: Quantitative Analysis for the Social Sciences involves psychology-specific applications of statistical analysis. The lab focuses on the use of software to analyze data from research in psychological sciences. Students who enroll in this lab section must also enroll in SOSC 302 during the same semester.

#### **PSYC 202 - INTRODUCTION TO SOCIAL PSYCHOLOGY**

Short Title: INTRO TO SOCIAL PSYCHOLOGY Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture

**Distribution Group:** Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Lower-Level

Prerequisite(s): PSYC 101

**Description:** Overview of topics in social psychology. Includes conformity and social influence, attitude formation and change, aggression, altruism, relationships, liking and loving, and prejudice and stereotyping, as well as applications to other disciplines (e.g. law, marketing, the workplace, etc.). Required for psychology majors.

PSYC 203 - INTRODUCTION TO COGNITIVE PSYCHOLOGY

Short Title: INTRO TO COGNITIVE PSYCHOLOGY

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture

**Distribution Group:** Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Lower-Level

**Description:** An introduction to topics in cognitive psychology, including perception, attention, language, memory, and decision making. Required

for psychology majors.

PSYC 231 - INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY

Short Title: INDUS & ORGANIZATIONAL PSYC Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture

Distribution Group: Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Lower-Level

Prerequisite(s): PSYC 101

Description: An overview of the principles, techniques, and theories of

psychology applied in the industrial setting.

PSYC 238 - SPECIAL TOPICS Short Title: SPECIAL TOPICS Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Internship/Practicum, Laboratory, Lecture, Seminar,

Independent Study
Credit Hours: 1-4

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Lower-Level

**Description:** Topics and credit hours may vary each semester. Contact department for current semester's topic(s). Repeatable for Credit.

PSYC 260 - UNDERGRADUATE PROFESSIONAL ISSUES IN PSYCHOLOGY

Short Title: UNDERGRAD PROF ISSUES IN PSYC

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hour: 1

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Lower-Level

**Description:** This seminar will provide students interested in psychology with an opportunity to explore psychology as a major and a career. Through guest lecturers, group discussions, and class projects, students will learn about diverse fields and potential career paths in psychology. Instructor Permission Required.

PSYC 308 - MEMORY Short Title: MEMORY

**Department:** Psychological Sciences **Grade Mode:** Standard Letter

Course Type: Lecture

Distribution Group: Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 203

**Description:** Critical review of traditional and contemporary approaches to the study of remembering and forgetting. Graduate/Undergraduate

Equivalency: PSYC 524.

PSYC 309 - PSYCHOLOGY OF LANGUAGE Short Title: PSYCHOLOGY OF LANGUAGE Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture

Distribution Group: Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 203

**Description:** Study of human and other animal communication. Includes the structure of human language, word meaning and semantic memory, psychological studies of syntax, bilingualism, language and thought, and

language errors and disorders. Cross-list: LING 309.

PSYC 310 - PSYCHOLOGY OF AGING Short Title: PSYCHOLOGY OF AGING Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

**Course Level**: Undergraduate Upper-Level **Prerequisite(s)**: PSYC 202 or PSYC 203

**Description:** This course focuses on the psychology of aging through a biological, cognitive, and socio-emotional framework. Topics to be covered include how mental capacities change over time, especially memory processing, differences between normal and pathological aging, neurobiological changes with age, dementias such as Alzheimer's disease, and individual differences in aging. There will be an emphasis on discussion of recent literature and developing research ideas in the field

of psychology of aging.

PSYC 311 - VISUAL COGNITION Short Title: VISUAL COGNITION Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 203

**Description:** This course provides an overview of how visual perception intersects with attention, memory, and concepts. Topics may include: object recognition, face recognition, scene recognition and reading; visual attention; visual working memory; applied visual cognition (e.g., interface design, TSA screening).

PSYC 315 - INTRODUCTION TO SEMANTICS Short Title: INTRODUCTION TO SEMANTICS Department: Psychological Sciences

**Grade Mode:** Standard Letter **Course Type:** Lecture

**Distribution Group:** Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Description:** Introduction to basic approaches to the study of meaning in linguistics and related fields. Includes the cognitive representation of meaning, lexical categorization, conceptual structures, metaphor/metonymy, meaning change, pragmatic inference, and the relation of language and mind. Cross-list: LING 315. Recommended Prerequisite(s): LING 200 or ANTH 200.

PSYC 321 - DEVELOPMENTAL PSYCHOLOGY Short Title: DEVELOPMENTAL PSYCHOLOGY

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture

**Distribution Group:** Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level Prerequisite(s): PSYC 202 or PSYC 203

**Description:** Study of behavioral changes with age in both human and nonhuman species. Recommended Prerequisite(s): PSYC 202 and

PSYC 203.

PSYC 325 - LANGUAGE ACQUISITION Short Title: LANGUAGE ACQUISITION Department: Psychological Sciences

**Grade Mode:** Standard Letter **Course Type:** Lecture **Credit Hours:** 3

**Restrictions:** Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level Prerequisite(s): PSYC 202 or PSYC 203

**Description:** The aim of this course is to explore language development closely through a variety of theories and research findings. Students will become familiar with different theories concerning language development, and develop an understanding of relevant issues, theoretical positions and relevant methodologies in language development using critical thinking skills. Cross-list: LING 325.

**PSYC 329 - PSYCHOLOGICAL TESTING** 

Short Title: PSYCHOLOGICAL TESTING Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture

Distribution Group: Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

**Course Level**: Undergraduate Upper-Level **Prerequisite(s)**: PSYC 339 or SOSC 302

**Description:** Offers a detailed examination of psychological test development and analysis. Topics include an exploration of different forms of psychological tests (e.g. intelligence, attitudes, personality, clinical), reliability and validity of tests, and practical issues in testing

such as test bias (e.g. gender differences).

PSYC 330 - PERSONALITY THEORY AND RESEARCH Short Title: PERSONALITY THEORY & RESEARCH

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture

Distribution Group: Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 340

Description: Examination of those aspects of personality emphasized by

major theorists past and present.

PSYC 331 - PSYCHOLOGY OF GENDER Short Title: PSYCHOLOGY OF GENDER Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture

Distribution Group: Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Description: Overview of research and theory on gender in psychology.

Cross-list: SWGS 331.

PSYC 332 - PSYCHOPATHOLOGY Short Title: PSYCHOPATHOLOGY Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture

Distribution Group: Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level Prerequisite(s): PSYC 202 or PSYC 203

Description: Study of the diagnosis and treatment of mental disorders.

PSYC 333 - MULTICULTURAL PSYCHOLOGY Short Title: MULTICULTURAL PSYCHOLOGY Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 101

**Description:** This seminar examines psychological research and theories that address important issues in the lives of diverse individuals. Readings, discussions, and films will be used to explore the acculturation process; stereotyping, prejudice, discrimination and racism; racial/ethnic identity development; and multicultural competence. Students are required to participate in a service learning project. Recommended Prerequisite(s): PSYC 202 and PSYC 321.

PSYC 339 - STATISTICAL METHODS-PSYCHOLOGY Short Title: STATISTICAL METHODS-PSYCHOLOGY

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture/Laboratory

**Credit Hours: 4** 

**Restrictions:** Enrollment is limited to students with a major in Cognitive Sciences or Psychology. Enrollment is limited to Undergraduate, Undergraduate Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level Prerequisite(s): PSYC 101 or PSYC 203

**Description:** Introduction to quantitative and computer methods applicable to the analysis of experimental and correlational data. Required for psychology majors. Psychology and Cognitive Science

Majors only or Permission of Instructor(s).

PSYC 340 - RESEARCH METHODS - PSYCHOLOGY Short Title: RESEARCH METHODS - PSYCHOLOGY

**Department:** Psychological Sciences **Grade Mode:** Standard Letter **Course Type:** Lecture

Credit Hours: 4

**Restrictions:** Enrollment is limited to students with a major in Cognitive Sciences or Psychology. Enrollment is limited to Undergraduate, Undergraduate Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 101 and (PSYC 339 or SOSC 302)

**Description:** A continuation of PSYC 339/SOSC 302, with emphasis on individual student experiments and the writing of research reports. Required for psychology majors. Psychology and Cognitive Science

Majors only or Permission of Instructor(s).

**PSYC 342 - COMPUTER APPLICATIONS IN PSYCHOLOGY** 

Short Title: COMPUTER APPLICATIONS IN PSYC

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 203

**Description:** The use of computers in psychological research and in usability engineering. The emphasis will be on dynamic HTML and JavaScript. Topics will include designing and running web-based psychology experiments and the use of web-based video. Graduate/Undergraduate Equivalency: PSYC 504. Mutually Exclusive: Cannot

register for PSYC 342 if student has credit for PSYC 504.

PSYC 345 - HEALTH PSYCHOLOGY Short Title: HEALTH PSYCHOLOGY Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture

Distribution Group: Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 101 and PSYC 202 and PSYC 203

**Description:** Contemporary theory and research in health psychology, including topics such as health behaviors, stress and coping, pain and its management, heart disease, psychoneuroimmunology, chronic illness, and dying. Recommended Prerequisite(s): PSYC 332 and PSYC 340.

PSYC 346 - STRESS AND HEALTH ACROSS THE LIFESPAN

Short Title: STRESS/HEALTH ACROSS LIFESPAN

**Department:** Psychological Sciences **Grade Mode:** Standard Letter

Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Description: This is an introductory course on psychobiological processes in animals and humans as they pertain to the development of stress responses and disease. In this course, we will review models of stress as well as the physiological processes implicated in bodily diseases. We will also review behavioral, psychological and pharmacological variables involved in stress processes. Recommended

Prerequisite(s): PSYC 345

#### **PSYC 351 - PSYCHOLOGY OF PERCEPTION**

Short Title: PERCEPTION

Department: Psychological Sciences
Grade Mode: Standard Letter

Course Type: Lecture

**Distribution Group:** Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level Prerequisite(s): PSYC 101 and PSYC 203

**Description:** An introductory survey of sensation and perception, both human and animal. Covers all sensory systems but focuses on vision and audition. Includes the philosophy of perception; measurement and methods; neuroanatomy of visual and auditory systems; computational models of vision, motion, depth, and color; illusions and perceptual organization; and perceptual development. Graduate/Undergraduate Equivalency. PSYC 521.

## **PSYC 353 - PSYCHOLOGY OF EMOTION AND MOTIVATION**

Short Title: PSYC OF EMOTION & MOTIVATION

**Department:** Psychological Sciences **Grade Mode:** Standard Letter **Course Type:** Lecture

Distribution Group: Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

**Course Level**: Undergraduate Upper-Level **Prerequisite(s)**: PSYC 101 and PSYC 202

**Description:** Study of motives and emotions as causes of human behavior; includes biological motives, aggression, emotions and emotional expression, and individual differences in motivation.

Recommended Prerequisite(s): PSYC 203.

# PSYC 354 - INTRODUCTION TO SOCIAL AND AFFECTIVE NEUROSCIENCE

Short Title: INTRO TO SOC/AFFECTIVE NEURO
Department: Psychological Sciences

Grade Mode: Standard Letter Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Description:** Overview of social and affective neuroscience research, including examination of the neurobiological mechanisms supporting social cognition; inter-personal processes; emotion and motivation; and emotion regulation. These topics will be examined in both healthy and affectively-disordered populations, with links made to the fields of health psychology and clinical neuroscience.

#### PSYC 362 - COGNITIVE NEUROSCIENCE: EXPLORING THE LIVING BRAIN

Short Title: COGNITIVE NEUROSCIENCE Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture

Distribution Group: Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 203

**Description:** Survey of theory and research on how mental processes are carried out by the human brain, with an emphasis on relating measures of brain activity to cognitive functioning, methods surveyed included electro physiological recording techniques, functional imaging techniques and methods that involve lessoning or disrupting neural activity. Cross-list: NEUR 362.

# PSYC 364 - COGNITIVE NEUROSCIENCE LAB Short Title: COGNITIVE NEUROSCIENCE LAB

**Department:** Psychological Sciences **Grade Mode:** Standard Letter

Course Type: Laboratory

Credit Hour: 1

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 362 (may be taken concurrently) or NEUR 362 (may

be taken concurrently)

Description: The objective is to equip the students of PSYC/NEUR 362 the tools on how to apply cognitive neuroscience techniques to health or clinical topics and to investigate sensorimotor and cognitive measures in a human model. The prereq may be taken the same semester as this class. Instructor Permission Required. Cross-list: NEUR 364. Graduate/ Undergraduate Equivalency: PSYC 564. Mutually Exclusive: Cannot register for PSYC 364 if student has credit for PSYC 564.

# PSYC 366 - METHODS IN SOCIAL COGNITIVE AND AFFECTIVE

**NEUROSCIENCE** 

Short Title: METHODS IN SOC COG AFF NEURO

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture/Laboratory

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Prerequisite(s)**: (PSYC 202 or PSYC 203) and (PSYC 354 (may be taken concurrently) or PSYC 362 (may be taken concurrently) or NEUR 362 (may

be taken concurrently))

**Description:** This course will give students hands-on training in the research methods of social cognitive and affective neuroscience. Students will learn about the theoretical underpinnings of these allied fields; acquire, preprocess, and analyze human functional neuroimaging data (i.e. using fMRI); and interpret and write-up results. PSYC 354 or PSYC 362 may be taken concurrently.

#### PSYC 370 - INTRODUCTION TO HUMAN FACTORS AND ERGONOMICS

Short Title: INTRO TO HUMAN FACTORS & ERGO

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture

**Distribution Group:** Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 203

Description: Application of principles of psychology and human

performance to the design of modern systems.

#### PSYC 375 - NEUROPSYCHOLOGY OF LANGUAGE AND MEMORY

Short Title: NEUROPSYC OF LANGUAGE/MEMORY

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture

**Distribution Group:** Distribution Group II

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 203 and (PSYC 309 or LING 309 or LING 200 or ANTH 200) and (PSYC 362 or NEUR 362 or NEUR 380 or BIOE 380 or

PSYC 380 or BIOC 380)

**Description:** An introduction to the neural basis of language and memory, covering patient-based and neuroimaging approaches. Topics include the neural basis of speech perception, language comprehension, language production, short-term memory, working memory, sematic and episodic memory, and domain-specific memory (e.g., verbal, spatial, and emotional memory).

#### **PSYC 380 - FUNDAMENTAL NEUROSCIENCE SYSTEMS**

Short Title: NEUROSYSTEMS
Department: Psychological Sciences
Grade Mode: Standard Letter
Course Type: Lecture

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Description:** This course will provide a broad overview of the brain's neural systems that subserve perception, learning, and behavior. The course will be highly integrative with thematic content including functional organization of the nervous system, neural encoding and decoding, sensory systems, motor systems, and high-level concept processing. Cross-list: NEUR 380. Recommended Prerequisite(s): PSYC 101. Mutually Exclusive: Cannot register for PSYC 380 if student has credit for PSYC 584.

#### **PSYC 409 - METHODS IN HUMAN-COMPUTER INTERACTION**

Short Title: METHODS HUMAN-COMP INTERACTION

**Department:** Psychological Sciences **Grade Mode:** Standard Letter **Course Type:** Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level Prerequisite(s): PSYC 101 and PSYC 203

**Description:** Introduction to methods for developing and testing user interfaces to computer systems. The focus is on web-based applications. Graduate/Undergraduate Equivalency: PSYC 609. Recommended Prerequisite(s): PSYC 370. Mutually Exclusive: Cannot register for

PSYC 409 if student has credit for PSYC 609.

# PSYC 411 - HISTORY OF PSYCHOLOGY

Short Title: HISTORY OF PSYCHOLOGY Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 101 and PSYC 202 and PSYC 203

**Description:** Survey of evolution of psychological theory from the Greeks to the present. Includes development of scientific approaches to the study of human thought and behavior. Graduate/Undergraduate Equivalency: PSYC 511. Mutually Exclusive: Cannot register for PSYC 411

if student has credit for PSYC 511.

## **PSYC 420 - ELECTION SYSTEMS, TECHNOLOGIES, AND**

**ADMINISTRATION** 

Short Title: ELECTION SYSTEMS

Department: Psychological Sciences

Grade Mode: Standard Letter

**Distribution Group:** Distribution Group III

Credit Hours: 3

Course Type: Seminar

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): POLI 395

Description: This multidisciplinary course will consider how elections are conducted to enhance participation, to accurately measure the will of the electorate, and to be sufficiently rigorous to convince all parties that the results are legitimate. This course will consider the design and evaluation of election technologies, ranging from voter registration through the polling booth and vote tabulation. This course will consider three questions: how do individual voters interact with the voting technology, how are voting technologies engineered to be accurate and secure, and how do the social aspects of voting fulfill democratic goals for elections? A central requirement for this course will be group research projects, many operating in our community, built around the November election.

Cross-list: COMP 435, POLI 420.

#### PSYC 430 - COMPUTATIONAL MODELING OF COGNITIVE PROCESSES

Short Title: COMP MODELING OF COG PROCESSES

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Description:** A survey of computational approaches to modeling cognitive processes. The emphasis will be on recent production system models, but other approaches will also be covered. The course will involve evaluation of existing models and hands-on experience in modeling. Graduate/Undergraduate Equivalency: PSYC 543. Recommended Prerequisite(s): PSYC 203 and COMP 200 (or equivalent). Mutually Exclusive: Cannot register for PSYC 430 if student has credit for PSYC 543.

# PSYC 431 - ADVANCED INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY

**SEMINAR** 

Short Title: ADVANCED I/O PSYCHOLOGY Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 231

**Description:** An emphasis on reading original published research. Topics covered include personnel selection, training, motivation, job attitudes, and groups. Instructor Permission Required. Mutually Exclusive: Cannot register for PSYC 431 if student has credit for PSYC 530.

# PSYC 432 - BRAIN AND BEHAVIOR Short Title: BRAIN AND BEHAVIOR Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 101 and PSYC 203 and PSYC 362

**Description:** An in-depth examination of the neural basis of higher mental functions in humans, including perception, attention, memory, motor skill, and language. Claims and controversies in cognitive neuroscience will be discussed. Recommended Prerequisite(s): PSYC 339 and PSYC 340.

## **PSYC 435 - POLLUTION AND PSYCHOLOGICAL DEVELOPMENT**

Short Title: POLLUTION & PSYCHOLOGICAL DEV

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Description:** In this course, we will consider research on the effects of various pollutants and toxic substances on the cognitive, social, and emotional development of children. Expert guest speakers will contribute to the course as well. Recommended Prerequisite(s): PSYC 339 and PSYC 340.

#### PSYC 436 - ADVANCED ORGANIZATIONAL PSYCHOLOGY

Short Title: ADVANCED ORGANIZATIONAL PSYC

**Department:** Psychological Sciences **Grade Mode:** Standard Letter

Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level Prerequisite(s): PSYC 231 and PSYC 431

**Description:** Contemporary theory and research in organizational psychology, including topics such as motivation, leadership, job satisfaction, occupational stress, social cognition in work organizations, and group processes. Graduate/Undergraduate Equivalency: PSYC 636. Mutually Exclusive: Cannot register for PSYC 436 if student has credit for PSYC 636.

#### **PSYC 438 - GROUP DYNAMICS**

Short Title: GROUP DYNAMICS
Department: Psychological Sciences
Grade Mode: Standard Letter
Course Type: Seminar
Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Description: This course examines current psychological theory and literature concerning intra- and inter-group phenomena within organizational contexts. This course will cover topics such as the unique methodological challenges of studying group-level phenomena; individual-, group-, and organizational-level inputs; group processes; and the assessment of group-level outcomes. Graduate/Undergraduate Equivalency: PSYC 551. Recommended Prerequisite(s): PSYC 339 and PSYC 340 and should be majoring in Psychology or Business. Mutually Exclusive: Cannot register for PSYC 438 if student has credit for PSYC 551.

# PSYC 439 - ADVANCED STATISTICAL METHODS FOR PSYCHOLOGY

**UNDERGRADUATES** 

Short Title: ADV STATISTICAL METHODS-PSYC

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

**Course Level**: Undergraduate Upper-Level **Prerequisite(s)**: PSYC 339 or SOSC 302

**Description:** This course is intended as a second course in statistics for psychology and the social sciences. It builds on PSYC 339/SOSC 302. Advanced factorial ANOVA designs, mixed between- and within-subject designs, and multiple regression will be covered. This course is primarily for advanced psychology undergraduates contemplating enrollment in graduate school.

# PSYC 440 - RESEARCH SEMINAR: INDUSTRIAL/ORGANIZATIONAL

**PSYCHOLOGY** 

Short Title: RESEARCH IN I/O PSYCHOLOGY Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 231

Description: An examination of selected topics in industrial/

organizational psychology, focusing on published and ongoing research by contemporary scholars. Topics will vary. Instructor Permission

Required.

## **PSYC 441 - HUMAN-COMPUTER INTERACTION**

Short Title: HUMAN-COMPUTER INTERACTION

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 203

**Description:** Study of the design and evaluation of interactive computing systems for human use and the major phenomena surrounding them. Mutually Exclusive: Cannot register for PSYC 441 if student has credit for PSYC 341/PSYC 541.

## **PSYC 445 - ADVANCED SEMINAR IN HEALTH PSYCHOLOGY**

Short Title: ADV SEM IN HEALTH PSYCHOLOGY

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture

Credit Hours: 3

Restrictions: Enrollment limited to students with a class of Junior or Senior. Enrollment is limited to students with a major in Psychology. Enrollment is limited to Undergraduate, Undergraduate Professional or

Visiting Undergraduate level students. **Course Level:** Undergraduate Upper-Level

Prerequisite(s): PSYC 202 and PSYC 332 and (PSYC 339 or SOSC 302) and PSYC 340

**Description:** Consideration of research on psychological factors and health, with special consideration to the role of health beliefs in people's practice and nonpractice of health, illness, and sick-role behaviors. Topics

will vary. Repeatable for credit with Permission of Department.

PSYC 452 - EMOTION REGULATION

Short Title: EMOTION REGULATION Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Description:** Review of contemporary psychology research on emotion regulation, including conceptual foundations, neurobiological bases, individual differences, involvement in psychopathology, and links to translational research approaches relevant to health psychology. Graduate/Undergraduate Equivalency: PSYC 552. Mutually Exclusive: Cannot register for PSYC 452 if student has credit for PSYC 552.

#### **PSYC 455 - ADVANCED SEMINAR IN CLINICAL PSYCHOLOGY**

Short Title: ADV SEM IN CLINICAL PSYCHOLOGY

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 101 and (PSYC 202 or PSYC 203)

Description: Topics will vary. Repeatable for credit with Permission of

Department.

## PSYC 461 - REASONING, DECISION MAKING, PROBLEM SOLVING

Short Title: DECISION MAKING/PROB SOLVING

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 203 and (PSYC 339 or SOSC 302 or STAT 180 or STAT 280 or STAT 300 or STAT 305 or STAT 310 or STAT 315 or DSCI 301

or ECON 307)

**Description:** Study of the higher mental processes. Includes problem solving, judgment, decision making, and reasoning. Graduate/ Undergraduate Equivalency: PSYC 527. Mutually Exclusive: Cannot register for PSYC 461 if student has credit for PSYC 360/PSYC 527.

# **PSYC 462 - NON-TRADITIONAL INTERFACES**

Short Title: NON-TRADITIONAL INTERFACES

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Description:** Advanced coverage of human computer interfaces that are not necessarily graphical in nature. The course covers haptic, gesture, locomotion, auditory, voice olfactory, taste interfaces. Impoverished GUIs (small screen) are investigated, as are interactive voice response systems and complex interfaces that are multi-model. Graduate/Undergraduate Equivalency: PSYC 662. Recommended Prerequisite(s): PSYC 370. Mutually Exclusive: Cannot register for PSYC 462 if student has credit for PSYC 662.

PSYC 463 - MEDICAL HUMAN FACTORS Short Title: MEDICAL HUMAN FACTORS Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Description:** Advanced coverage of the human factors that are specific to medical systems. Topics include medical decision making and diagnosis errors, surgical human factors, medical robots, surgical simulators, and general medical equipment design. Macro-ergonomics of hospital systems, electronic medical records and computerized physician order entry systems are also covered. Graduate/Undergraduate Equivalency: PSYC 663. Recommended Prerequisite(s): PSYC 370. Mutually Exclusive: Cannot register for PSYC 463 if student has credit for PSYC 663.

# PSYC 464 - USABILITY ASSESSMENT

Short Title: USABILITY ASSESSMENT Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Description:** This course covers all of the aspects of specifying, planning, executing, and reporting usability assessments on products, services and systems. Formative and summative assessments are covered, as are "discount" usability methods. This course is project based, with students performing usability assessments as part of an engineering team that is developing products for deployment. Graduate/Undergraduate Equivalency: PSYC 664. Recommended Prerequisite(s): PSYC 370. Mutually Exclusive: Cannot register for PSYC 464 if student has credit for PSYC 664.

PSYC 465 - OLFACTORY PERCEPTION Short Title: OLFACTORY PERCEPTION Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 101

**Description:** Overview of theories and research related to olfaction. Special topics include olfactory memory, the effect of emotion and cognition on olfaction, olfaction as a channel of communication, sensory integration, and ERP and fMRI studies on olfaction and its relationship with other sensory systems. Graduate/Undergraduate Equivalency: PSYC 565. Mutually Exclusive: Cannot register for PSYC 465 if student has credit for PSYC 565.

PSYC 467 - HUMAN FACTORS IN CYBERSECURITY Short Title: HUMAN FACTORS IN CYBERSECURITY

**Department:** Psychological Sciences **Grade Mode:** Standard Letter

Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 203

**Description:** Introduction to the human factors that are specific to cybersecurity. Topics will include the security-usability tradeoff, usable authentication, privacy and forensics, security in automated vehicles, internet of things, security warnings, security training and awareness, and so on. Graduate/Undergraduate Equivalency: PSYC 667. Mutually Exclusive: Cannot register for PSYC 467 if student has credit for PSYC 667.

#### **PSYC 468 - HUMAN FACTORS IN ARTIFICIAL INTELLIGENCE**

**Short Title:** HUMAN FACTORS IN AI **Department:** Psychological Sciences

**Grade Mode:** Standard Letter **Course Type:** Seminar **Credit Hours:** 3

**Restrictions:** Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Description:** Introduction to the human factors that are specific to artificial Intelligence (AI). Topics will include societal impacts of AI, trustworthy AI, fair and responsible AI, transparent and explainable AI, privacy and security in AI, ethics in AI, human-AI teaming, future trends and challenges, and so on. Graduate/Undergraduate Equivalency: PSYC 668. Recommended Prerequisite(s): PSYC 370 and PSYC 441 Mutually Exclusive: Cannot register for PSYC 468 if student has credit for PSYC 668.

PSYC 470 - ENGINEERING PSYCHOLOGY Short Title: ENGINEERING PSYCHOLOGY Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 370

**Description:** This is an advanced human factors course aimed at students who have taken a basic course in human factors or human-computer interaction and are looking for greater depth. Graduate/ Undergraduate Equivalency: PSYC 540. Mutually Exclusive: Cannot

register for PSYC 470 if student has credit for PSYC 540.

# **PSYC 475 - STEREOTYPING AND PREJUDICE**

Short Title: STEREOTYPING AND PREJUDICE

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 202

**Description:** Consideration of modern research on stereotypes of, prejudice against, and discrimination toward racial, gender, and stigmatized groups. Recommended Prerequisite(s): PSYC 203 and 340.

PSYC 477 - SPECIAL TOPICS
Short Title: SPECIAL TOPICS
Department: Psychological Sciences
Grade Mode: Standard Letter

Course Type: Internship/Practicum, Laboratory, Lecture, Seminar, Lecture/

Laboratory
Credit Hours: 1-4

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Description:** Topics and credit hours may vary each semester. Contact department for current semester's topic(s). Repeatable for Credit.

PSYC 480 - ADVANCED TOPICS Short Title: ADVANCED TOPICS Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 101 and (PSYC 202 (may be taken concurrently) or

**PSYC 203)** 

Credit Hours: 1-6

**Description:** Topics will vary. Please see individual instructor for prerequisite requirements. Repeatable for different topics. Repeatable for

Credit.

**PSYC 485 - UNDERGRADUATE SUPERVISED RESEARCH** 

Short Title: UG SUPERVISED RESEARCH Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Research

Restrictions: Enrollment is limited to students with a major in Cognitive Sciences or Psychology. Enrollment is limited to Undergraduate, Undergraduate Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Description:** Supervised empirical research. Research paper required. Sponsorship by faculty member required. Instructor Permission Required. Recommended Prerequisite(s): PSYC 339, PSYC 340. Repeatable for Credit.

**PSYC 487 - FUNCTIONAL HUMAN NEUROANATOMY** 

Short Title: FUNCTIONAL NEUROANATOMY Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture/Laboratory

Credit Hours: 3

Restrictions: Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

Prerequisite(s): PSYC 203

Description: Anatomy and function of major structures and circuits of the human central nervous system in health and disease. Gross structure and function of the human brain, spinal cord, and cranial nerves are emphasized. Students will gain both an appreciation of the brain's three-dimensional architecture and a thorough understanding of the functions of major brain systems. Additionally, there is a focus on how sensory signals are processed from a succession of lower centers on up through successive cortical regions. Materials include human brain samples as well as images of human brain sections, 3-D models and animations, as well as CT, PET and MRI images. Instructor Permission Required. Graduate/Undergraduate Equivalency: PSYC 587. Mutually Exclusive: Cannot register for PSYC 487 if student has credit for PSYC 587.

**PSYC 488 - SUPERVISED READING** 

Short Title: SUPERVISED READING
Department: Psychological Sciences
Grade Mode: Standard Letter
Course Type: Independent Study

Credit Hours: 1-6

**Restrictions:** Enrollment is limited to students with a major in Cognitive Sciences or Psychology. Enrollment is limited to Undergraduate, Undergraduate Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Description:** Supervised reading of books and empirical papers on a topic of mutual interest to students and faculty. Term paper required. Sponsorship by faculty member required. Instructor Permission Required. Recommended Prerequisite(s): PSYC 339 and PSYC 340. Repeatable for Credit.

PSYC 495 - SUMMER INTERNSHIP Short Title: SUMMER INTERNSHIP Department: Psychological Sciences

Grade Mode: Standard Letter
Course Type: Internship/Practicum

**Credit Hours:** 3

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level

**Description:** Provides enrollment for various department summer internships. Instructor Permission Required. Repeatable for Credit.

PSYC 499 - HONORS THESIS Short Title: HONORS THESIS Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Independent Study

Credit Hours: 1-6

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Undergraduate, Undergraduate

Professional or Visiting Undergraduate level students.

Course Level: Undergraduate Upper-Level
Prerequisite(s): (PSYC 339 or SOSC 302) and PSYC 340
Description: Sponsorship by faculty member required. Students
must apply for the Honors Program. Instructor Permission Required.

Repeatable for Credit.

**PSYC 502 - ADVANCED PSYCHOLOGICAL STATISTICS I** 

Short Title: ADVANCED PSYC STATISTICS I Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture/Laboratory

**Credit Hours: 4** 

**Restrictions:** Enrollment is limited to students with a major in Human-Comp Inter & Humn Factrs or Psychology. Enrollment is limited to

Graduate level students. Course Level: Graduate

**Description:** Introduction to inferential statistics, with emphasis on analysis of variance. Students who do not meet registration requirements as Graduate and Psychology or MHCIHF (Master in Human-Computer Interaction and Human Factors) Majors must receive instructor

permission to register. Cross-list: STAT 509.

PSYC 503 - ADVANCED PSYCHOLOGICAL STATISTICS II

Short Title: ADVANCED PSYC STATISTICS II Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture

Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Prerequisite(s): PSYC 502 or STAT 509

**Description:** A continuation of PSYC 502, focusing on multiple regression. Other multivariate techniques and distribution-free statistics are also

covered. Cross-list: STAT 510.

PSYC 504 - COMPUTER APPLICATIONS IN PSYCHOLOGY

Short Title: COMPUTER APPLICATIONS IN PSYC

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** The use of computers in psychological research and in usability engineering. The emphasis will be on dynamic HTML and JavaScript. Topics will include designing and running web-based psychology experiments and the use of web-based video. Graduate/ Undergraduate Equivalency: PSYC 342. Mutually Exclusive: Cannot

register for PSYC 504 if student has credit for PSYC 342.

PSYC 507 - RESEARCH METHODS Short Title: RESEARCH METHODS Department: Psychological Sciences

**Grade Mode:** Standard Letter **Course Type:** Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Graduate-level treatment of a wide range of laboratory and

field research methodologies.

**PSYC 511 - HISTORY AND SYSTEMS OF PSYCHOLOGY** 

Short Title: HISTORY & SYSTEMS OF PSYC Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Survey of the evolution of psychological theory from the Greeks to the present. Includes development of scientific approaches to the study of human thought and behavior. Graduate/Undergraduate Equivalency: PSYC 411. Mutually Exclusive: Cannot register for PSYC 511

if student has credit for PSYC 411.

PSYC 520 - FOUNDATIONS OF COGNITIVE PSYCHOLOGY

Short Title: FOUNDATIONS OF COGNITIVE PSYC

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture

Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** An introduction to the basic topics in cognitive psychology, including perception, memory, psycholinguistics, concept formation,

problem solving, and decision making.

**PSYC 521 - PSYCHOLOGY OF PERCEPTION** 

Short Title: PERCEPTION

Department: Psychological Sciences

**Grade Mode:** Standard Letter **Course Type:** Seminar **Credit Hours:** 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** An introductory survey of sensation and perception, both human and animal. Covers all sensory systems but focuses on vision and audition. Includes the philosophy of perception; measurement and methods; neuroanatomy of visual and auditory systems; computational models of vision, motion, depth, and color; illusions and perceptual organization; and perceptual development. Graduate/Undergraduate

Equivalency: PSYC 351.

#### **PSYC 522 - INFORMATION PROCESSING AND ATTENTION**

Short Title: INFO PROCESSING & ATTENTION Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** An exploration of topics in attention, including information overload, selective attention, response conflict, and automatic/unconscious and controlled/conscious processes. The neural mechanisms underlying these processes will also be discussed.

PSYC 524 - MEMORY Short Title: MEMORY

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Overview of issues and research in remembering and forgetting. Graduate/Undergraduate Equivalency: PSYC 308.

PSYC 525 - PSYCHOLINGUISTICS Short Title: PSYCHOLINGUISTICS Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description**: Study of the psychology of language. Includes the study of speech production, reading, syntax, meaning, bilingualism, language and

thought, and language errors and disorders.

PSYC 527 - REASONING, DECISION MAKING, PROBLEM SOLVING

Short Title: DECISION MAKING/PROB SOLVING

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

**Restrictions:** Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** The study of higher mental processes. Includes problem solving, judgment, decision making, and reasoning. Graduate/ Undergraduate Equivalency: PSYC 461. Mutually Exclusive: Cannot register for PSYC 527 if student has credit for PSYC 461.

**PSYC 529 - COGNITIVE RESEARCH SEMINAR** 

Short Title: COGNITIVE RESEARCH SEMINAR Department: Psychological Sciences Grade Mode: Satisfactory/Unsatisfactory

Course Type: Seminar Credit Hours: 1-3

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: A weekly student-staff seminar on current and recent

research about mental phenomena. Repeatable for Credit.

PSYC 530 - FOUNDATIONS OF I-O PSYCHOLOGY
Short Title: FOUNDATIONS OF I-O PSYCHOLOGY

**Department:** Psychological Sciences **Grade Mode:** Standard Letter

Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Graduate-level introduction to the study of human behavior in the work setting. Mutually Exclusive: Cannot register for PSYC 530 if

student has credit for PSYC 431.

PSYC 531 - HF/HCI RESEARCH SEMINAR Short Title: HF/HCI RESEARCH SEMINAR Department: Psychological Sciences Grade Mode: Satisfactory/Unsatisfactory

Course Type: Seminar Credit Hours: 1-3

**Restrictions:** Enrollment is limited to students with a major in Human-Comp Inter & Humn Factrs or Psychology. Enrollment is limited to

Graduate level students. **Course Level:** Graduate

**Description:** A weekly student-staff seminar on various human factors

and human-computer interaction topics. Repeatable for Credit.

PSYC 532 - HEALTH RESEARCH SEMINAR Short Title: HEALTH RESEARCH SEMINAR Department: Psychological Sciences Grade Mode: Satisfactory/Unsatisfactory

Course Type: Seminar Credit Hours: 1-3

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: A weekly student-staff seminar on current and recent health

and emotion-related research. Repeatable for Credit.

PSYC 533 - I-O PSYCHOLOGY RESEARCH SEMINAR Short Title: I-O PSYCHOLOGY RESEARCH SEM

**Department:** Psychological Sciences **Grade Mode:** Satisfactory/Unsatisfactory

Course Type: Seminar Credit Hours: 1-3

**Restrictions:** Enrollment is limited to students with a major in Human-Comp Inter & Humn Factrs, Industrial-Organizational Psyc or Psychology.

Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: A weekly student-staff seminar on various industrial-

organizational psychology topics. Repeatable for Credit.

PSYC 535 - HUMAN FACTORS/ERGONOMICS Short Title: HUMAN FACTORS/ERGONOMICS Department: Psychological Sciences

Course Type: Seminar Credit Hours: 3

Grade Mode: Standard Letter

Restrictions: Enrollment is limited to students with a major in Human-Comp Inter & Humn Factrs, Industrial Engineering, Industrial-Organizational Psyc or Psychology. Enrollment is limited to Graduate level students. Enrollment limited to students in a Doctor of Philosophy, Master of Industrial Eng, Master of Industrial-Org Psyc or Mst Humn-

Comp Inter Humn Factr degrees. Course Level: Graduate

**Description:** Broad overview of the science and profession of human factors/ergonomics. Emphasis is on discussion of literature and presentations of recommendations to applied problems.

## **PSYC 540 - FOUNDATIONS OF ENGINEERING PSYCHOLOGY**

Short Title: ENGINEERING PSYCHOLOGY Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3
Restrictions: Enrollment is limited to students with a major in Human-

Comp Inter & Humn Factrs or Psychology. Enrollment is limited to

Graduate level students. Course Level: Graduate

**Description:** This is an advanced human factors course aimed at students who have taken a basic course in human factors or human-computer interaction and are looking for greater depth. Graduate/ Undergraduate Equivalency: PSYC 470. Mutually Exclusive: Cannot register for PSYC 540 if student has credit for PSYC 470.

# PSYC 541 - HUMAN-COMPUTER INTERACTION Short Title: HUMAN-COMPUTER INTERACTION

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Study of the design and evaluation of interactive computing systems for human use and the major phenomena surrounding them. Mutually Exclusive: Cannot register for PSYC 541 if student has credit for PSYC 341/PSYC 441.

# PSYC 543 - COMPUTATIONAL MODELING OF COGNITIVE PROCESSES

Short Title: COMP MODELING OF COG PROCESSES

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** A survey of computational approaches to modeling cognitive processes. The emphasis will be on recent production system models, but other approaches will also be covered. The course will involve evaluation of existing models and hands-on experience in modeling. Graduate/Undergraduate Equivalency: PSYC 430. Mutually Exclusive: Cannot register for PSYC 543 if student has credit for PSYC 430.

PSYC 546 - PSYCHONEUROIMMUNOLOGY Short Title: PSYCHONEUROIMMUNOLOGY Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Psychoneuroimmunology research **PSYC 547 - FOUNDATIONS OF HEALTH PSYCHOLOGY Short Title:** FOUNDATIONS-HEALTH PSYCHOLOGY

**Department:** Psychological Sciences

**Grade Mode:** Standard Letter **Course Type:** Seminar **Credit Hours:** 3

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Foundations of Health Psychology research

PSYC 548 - INTERVENTIONS Short Title: INTERVENTIONS Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: This course will prepare students to conduct highimpact research across the translational continuum in the social, psychobiological, and behavioral sciences. In this course, students will gain a thorough grounding in the conduct of Randomized Controlled Trials (RCTs) and develop competence in the planning, design, and execution of clinical trials involving behavioral interventions. After taking this course, students will be able to plan and conduct longitudinal observational studies and clinical trials that have the potential to change practice guidelines, health care policies, and third-party coverage for health-related outcomes. The first two weeks of the course will cover causal inference in experimental and observational studies and address various implications of counterfactual thinking. The remainder of the course will provide training in planning, designing, and conducting translational research with a focus on randomized controlled trials of health-related behavioral interventions. Each student will develop and write a research grant proposal that will serve as the course "Final." Recommended Prerequisite(s): This course has no specific course prerequisites. It is designed to be most useful to students with knowledge of basic (i.e., undergraduate level statistics and research methods) that are pertinent to the social, behavioral, and biomedical sciences.

Course URL: <a href="mailto:canvas.rice.edu/courses/33575">canvas.rice.edu/courses/33575</a>(<a href="http://canvas.rice.edu/courses/33575">http://canvas.rice.edu/courses/33575</a>(<a href="http://canvas.rice.edu/courses/33575">http://canvas.rice.edu/courses/33575</a>(<a href="http://canvas.rice.edu/courses/33575">http://canvas.rice.edu/courses/33575</a>)

# PSYC 549 - PSYCHOPATHOLOGY, DEVELOPMENT, & AGING

Short Title: PSYCHOPATHOLOGY, DVLPMNT& AGING

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: This course will take a developmental approach to understand psychopathology and aging. We will seek to evaluate the the factors contributing to psychopathology that emerge across the lifespan. We will adopt a biopsychosocial model to address the roots of normal and abnormal adult development, & aging. This course will begin with an overview of the field; we will then work toward a sophisticated understanding anxiety disorders, aging & cognitive disorders, mood disorders, factitious and dissociative disorders, and personality disorders. Although we will cover nosological models of psychopathology, we will primarily focus on etiology.

#### **PSYC 550 - FOUNDATIONS OF SOCIAL PSYCHOLOGY**

Short Title: FOUNDATIONS OF SOCIAL PSYC Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Review of theories of social psychology with an emphasis on

current empirical research.

# PSYC 551 - GROUP DYNAMICS Short Title: GROUP DYNAMICS Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate Prerequisite(s): PSYC 530

**Description:** This course examines current psychological theory and literature concerning intra- and inter-group phenomena within organizational contexts. This course will cover topics such as the unique methodological challenges of studying group-level phenomena; individual-, group-, and organizational-level inputs; group processes; and the assessment of group-level outcomes. Graduate/Undergraduate Equivalency: PSYC 438. Mutually Exclusive: Cannot register for PSYC 551 if student has credit for PSYC 438.

PSYC 552 - EMOTION REGULATION Short Title: EMOTION REGULATION Department: Psychological Sciences

**Grade Mode:** Standard Letter **Course Type:** Seminar **Credit Hours:** 3

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Review of contemporary psychology research on emotion regulation, including conceptual foundations, neurobiological bases, individual differences, involvement in psychopathology, and links to translational research approaches relevant to health psychology. Graduate/Undergraduate Equivalency: PSYC 452. Mutually Exclusive: Cannot register for PSYC 552 if student has credit for PSYC 452.

PSYC 560 - PSYCHOLOGY PRESENTATIONS
Short Title: PSYCHOLOGY PRESENTATIONS

**Department:** Psychological Sciences **Grade Mode:** Standard Letter **Course Type:** Internship/Practicum

Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Practicum on oral psychology presentation.

PSYC 561 - TEACHING IN PSYCHOLOGY Short Title: TEACHING IN PSYCHOLOGY Department: Psychological Sciences Grade Mode: Satisfactory/Unsatisfactory Course Type: Internship/Practicum

Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Assistance in the teaching of undergraduate and occasionally graduate courses in psychology. Repeatable for Credit.

# **PSYC 563 - COGNITIVE PSYCHOLOGY INTERNSHIP**

Short Title: COGNITIVE PSYC INTERNSHIP Department: Psychological Sciences Grade Mode: Satisfactory/Unsatisfactory Course Type: Internship/Practicum

Credit Hours: 1-9

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Supervised internship in cognitive psychology. Instructor

Permission Required. Repeatable for Credit.

PSYC 564 - COGNITIVE NEUROSCIENCE LAB Short Title: COGNITIVE NEUROSCIENCE LAB Department: Psychological Sciences

Grade Mode: Standard Letter Course Type: Laboratory

Credit Hour: 1

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** The objective is to equip the students of PSYC/NEUR 362 the tools on how to apply cognitive neuroscience techniques to health or clinical topics and to investigate sensorimotor and cognitive measures in a human model. Cross-list: NEUR 564. Graduate/Undergraduate Equivalency: PSYC 364. Mutually Exclusive: Cannot register for PSYC 564 if student has credit for PSYC 364.

PSYC 565 - HUMAN OLFACTION Short Title: HUMAN OLFACTION Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Overview of theories and research related to olfaction. Special topics include olfactory memory, the effect of emotion and cognition on olfaction, olfaction as a channel of communication, sensory integration, and ERP and fMRI studies on olfaction and its relationship with other sensory systems. Graduate/Undergraduate Equivalency: PSYC 465. Mutually Exclusive: Cannot register for PSYC 565 if student has credit for PSYC 465.

PSYC 571 - FIRST-YEAR PROJECT Short Title: FIRST-YEAR PROJECT Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Research

Credit Hours: 3

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Individual research project undertaken in the first year of the

graduate program. Repeatable for Credit.

PSYC 572 - SECOND-YEAR PROJECT Short Title: SECOND-YEAR PROJECT Department: Psychological Sciences Grade Mode: Satisfactory/Unsatisfactory

Course Type: Research Credit Hours: 3

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Individual research project undertaken during the second

year of the graduate program. Repeatable for Credit. PSYC 573 - NON-THESIS GRADUATE RESEARCH

Short Title: NON-THESIS GRADUATE RESEARCH Department: Psychological Sciences

**Grade Mode:** Satisfactory/Unsatisfactory **Course Type:** Research

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

Credit Hours: 1-15

Description: Individual research prior to achieving candidacy. Repeatable

for Credit.

**PSYC 574 - INTRODUCTION TO COGNITIVE NEUROSCIENCE** 

Short Title: INTRO COGNITIVE NEUROSCIENCE

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

**Restrictions:** Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** An introductory graduate-level overview of cognitive neuroscience. The course will cover basics in history, neuroanatomy, methods of cognitive neuroscience, sensation and perception, control of action, learning and memory, emotion, language, attention, drugs and cognition, impulsivity, cognitive control, social cognition, and neurobiology of disease. This course is usually taught at the Texas Medical Center. Instructor Permission Required. Cross-list: NEUR 508.

PSYC 575 - ADVANCED COGNITIVE NEUROSCIENCE: ATTENTION AND

**PERCEPTION** 

Short Title: ATTENTION AND PERCEPTION Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

**Credit Hours: 3** 

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Overview of neuropsychological and cognitive neuroscience approaches to higher mental functions including sensation and perception, attention, motor control, and neuroplasticity. Other topics include basic neuroanatomy, experimental and clinical investigative methods, and the historical and philosophical context of contemporary

neuroscience. Cross-list: NEUR 501.

Course URL: www.ruf.rice.edu/~neurosci (http://www.ruf.rice.edu/

~neurosci/)

PSYC 576 - ADVANCED COGNITIVE NEUROSCIENCE: HIGHER MENTAL

**FUNCTIONS** 

Short Title: HIGHER MENTAL FUNCTIONS Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Overview of neuropsychological and neuroimaging approaches to higher mental functions, including language, memory, executive functions, reasoning, and numerical processing. Cross-list:

NEUR 502.

Course URL: www.ruf.rice.edu/~neurosci (http://www.ruf.rice.edu/

~neurosci/)

PSYC 577 - INTRODUCTION TO FUNCTIONAL NEUROANATOMY

Short Title: FUNCTIONAL NEUROANATOMY Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Lecture/Laboratory

Credit Hours: 2-3

**Restrictions**: Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Anatomy and function of components of the nervous system with an emphasis on the central nervous system. Usually taught at the

Texas Medical Center. Instructor Permission Required.

 ${\tt PSYC~578-COGNITIVE~NEUROPSYCHOLOGY:~THEORIES~AND~METHODS}$ 

Short Title: COGNEURO: THEORIES AND METHODS

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

**Restrictions:** Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** This course explores different approaches in the field of Cognitive Neuropsychology. Topics include single-case studies, case series, voxel-lesion symptom mapping and computational neuropsychology. We will discuss how to do research with each of these techniques, how to draw inferences from neuropsychological data and critiques of the methodology.

# PSYC 580 - DEVELOPMENTAL COGNITIVE NEUROSCIENCE

Short Title: DEVELOPMENTAL COG NEUROSCIENCE

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Seminar focusing on the neural/biological bases of both normal and abnormal human development through a survey of recent research in developmental cognitive neuroscience. Topics include perceptual, motive, cognitive, and language development as well as experimental research methods for studying the developing brain.

PSYC 581 - VISION SCIENCE Short Title: VISION SCIENCE Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Advanced graduate seminar in the psychology of vision, covering the neural, psychophysical, and phenomenological approaches

to visual perception.

# PSYC 582 - EARLY SENSORY, PERCEPTUAL AND ATTENTIONAL

DEVELOPMENT

Credit Hours: 3

Short Title: EARLY SENSORY PERCEPTION Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** This is a survey course for graduate students interested in the development of sensory systems, perception, and attention. There will be original empirical and theoretical readings from the literature on the development of these functions primarily during infancy. Neurobiological underpinnings for these functions will be debated and discussed.

# PSYC 583 - THEORY, CONTENT, AND EXECUTION IN COGNITIVE NEUROSCIENCE

Short Title: COGNEURO THEORY/CONTENT/EXECUT

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 2

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** The particular combination of issues in cognitive neuroscience in any one course will vary depending on the background and needs of the students registered for that course and the nature of the important articles in journals covering these areas. Instructor Permission Required. Repeatable for Credit.

#### **PSYC 585 - FUNCTIONAL MAGNETIC RESONANCE IMAGING**

**LABORATORY** 

Short Title: FMRI LABORATORY
Department: Psychological Sciences
Grade Mode: Standard Letter
Course Type: Laboratory

Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Laboratory course that provides comprehensive introduction to the practical aspects of planning conducting and analyzing Blood Oxygen Dependent Functional Magnetic Resonance Imaging (BOLD fMRI) data. BOLD fMRI is a methodology that allows non-invasive measurements of the neural processing underlying human perception/cognition. Course taught at Baylor College of Medicine for Advanced

#### **PSYC 586 - SOCIAL AND AFFECTIVE NEUROSCIENCE**

Short Title: SOCIAL AND AFFECTIVE NEURO Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

**Restrictions**: Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Review of the field of social and affective neuroscience, including conceptual foundations and methodology. Review and discussion of contemporary research on the neurobiological supporting social cognition and emotion in both healthy and affectively-disordered populations.

## **PSYC 587 - FUNCTIONAL HUMAN NEUROANATOMY**

Short Title: FUNCTIONAL NEUROANATOMY
Department: Psychological Sciences
Grade Mode: Standard Letter
Course Type: Lecture/Laboratory

Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Anatomy and function of major structures and circuits of the human central nervous system in health and disease. Gross structure and function of the human brain, spinal cord, and cranial nerves are emphasized. Students will gain both an appreciation of the brain's three-dimensional architecture and a thorough understanding of the functions of major brain systems. Additionally, there is a focus on how sensory signals are processed from a succession of lower centers on up through successive cortical regions. Materials include human brain samples as well as images of human brain sections, 3-D models and animations, as well as CT, PET and MRI images. Graduate/Undergraduate Equivalency: PSYC 487. Mutually Exclusive: Cannot register for PSYC 587 if student has credit for PSYC 487.

PSYC 590 - ADVANCED TOPICS IN NEUROSCIENCE

Short Title: ADVANCED TOPICS - NEUROSCIENCE

**Department:** Psychological Sciences **Grade Mode:** Standard Letter **Course Type:** Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Topics will vary. Repeatable for Credit.

PSYC 595 - HUMAN-COMPUTER INTERACTION AND HUMAN FACTORS

PROFESSIONAL MASTER'S INTERNSHIP

Short Title: HCI&HF PROF MASTERS INTERNSHIP

**Department:** Psychological Sciences **Grade Mode:** Satisfactory/Unsatisfactory **Course Type:** Internship/Practicum

Credit Hour. 1

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate Prerequisite(s): PSYC 503

**Description:** Supervised internship in Human-Computer Interaction and Human Factors Professional Master's Program. Instructor Permission

Required. Repeatable for Credit.

PSYC 600 - HCI & HF PROFESSIONAL MASTER'S CAPSTONE PROJECT

Short Title: HCI&HF PROF MASTER'S CAPSTONE

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Research

Credit Hours: 6

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate Prerequisite(s): PSYC 503

**Description:** This course allows students to integrate all of the knowledge they have gained in their HCI/HF professional master's 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. Department Permission Required.

PSYC 601 - MULTIVARIATE STATISTICS Short Title: MULTIVARIATE STATISTICS Department: Psychological Sciences

Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** This course provides an overview of a wide range of concepts and skills for conducting data analysis on multivariate data sets encountered in psychology. Issues involve preparing the data set, selecting and conducting the appropriate analysis, interpreting the output from statistical programs, and presenting complex analyses and results in a clear manner.

PSYC 602 - PSYCHOMETRICS Short Title: PSYCHOMETRICS Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture
Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Test theory, including reliability, validity, item response theory, and generalizability theory. In addition, the course offers handson experience with analysis software and discussion of practical issues such as test bias, item writing, and scale construction.

**PSYC 609 - METHODS IN HUMAN-COMPUTER INTERACTION** 

Short Title: METHODS HUMAN-COMP INTERACTION

**Department:** Psychological Sciences **Grade Mode:** Standard Letter **Course Type:** Seminar

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Credit Hours: 3

**Description:** Introduction to methods for developing and testing user interfaces to computer systems. The focus is on web-based applications. Graduate/Undergraduate Equivalency: PSYC 409. Mutually Exclusive: Cannot register for PSYC 609 if student has credit for PSYC 409.

**PSYC 620 - ADVANCED TOPICS IN COGNITIVE PSYCHOLOGY** 

Short Title: ADV TOPICS - COGNITIVE PSYC Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Credit Hours: 3

Description: Topics will vary. Repeatable for Credit.

PSYC 621 - TOPICS IN MEMORY Short Title: TOPICS IN MEMORY Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture
Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Topics will vary. Repeatable for Credit.

PSYC 622 - TOPICS IN PSYCHOLINGUISTICS Short Title: TOPICS IN PSYCHOLINGUISTICS Department: Psychological Sciences

Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** In-depth, consideration of specialized topics in the psychology of language. Topics vary from year to year. Repeatable for

Credit.

PSYC 624 - SOCIAL/ORGANIZATIONAL PSYCHOLOGY RESEARCH

**SEMINAR** 

Short Title: SOCIAL/ORG PSYC RESEARCH SEM

**Department:** Psychological Sciences **Grade Mode:** Satisfactory/Unsatisfactory

Course Type: Seminar Credit Hours: 1-3

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Weekly seminar to discuss recent research in social/

organizational psychology. Repeatable for Credit.

**PSYC 625 - COGNITIVE NEUROSCIENCE RESEARCH SEMINAR** 

**Short Title:** COGNEURO RESEARCH SEMINAR **Department:** Psychological Sciences

Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 1-3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Weekly seminar to discuss recent research in cognitive neuroscience. Instructor Permission Required. Repeatable for Credit.

PSYC 626 - HUMAN FACTORS/HUMAN-COMPUTER INTERACTION

RESEARCH SEMINAR

Short Title: HF/HCI RESEARCH SEMINAR Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 1-3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Weekly seminar to discuss recent research in human factors/human-computer interaction. Instructor Permission Required.

Repeatable for Credit.

PSYC 627 - INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY RESEARCH

**SEMINAR** 

Short Title: I/O PSYC RESEARCH SEMINAR Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 1-3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Weekly seminar to discuss recent research in industrial/organizational psychology. Instructor Permission Required. Repeatable

for Credit.

PSYC 628 - MEMORY RESEARCH SEMINAR Short Title: MEMORY RESEARCH SEMINAR Department: Psychological Sciences Grade Mode: Satisfactory/Unsatisfactory

Course Type: Seminar Credit Hour: 1

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Weekly seminar to discuss recent research in human

memory. Repeatable for Credit.

**PSYC 629 - PSYCHOLINGUISTICS RESEARCH SEMINAR** 

Short Title: PSYCHOLINGUISTICS SEMINAR Department: Psychological Sciences Grade Mode: Satisfactory/Unsatisfactory

Course Type: Seminar

Credit Hour: 1

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Weekly seminar to discuss recent research in

psycholinguistics. Repeatable for Credit.

PSYC 630 - ADVANCED TOPICS IN I/O

**Short Title:** ADVANCED TOPICS IN I/O **Department:** Psychological Sciences

Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate Prerequisite(s): PSYC 530

Description: Topics will vary. Repeatable for different topics. Repeatable

for Credit.

**PSYC 631 - FOUNDATIONS OF INDIVIDUAL DIFFERENCES** 

Short Title: INDIVIDUAL DIFFERENCES
Department: Psychological Sciences
Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Applied psychologists attempt to build theoretical and empirical models that effectively explain how variation in individual differences (e.g., cognitive ability, personality, motivation, interests) relates to variation in practically relevant outcomes (e.g., training effectiveness, job performance, response to clinical treatment). This course covers major theoretical and methodological approaches to this

end.

PSYC 632 - LEADERSHIP Short Title: LEADERSHIP

**Department:** Psychological Sciences **Grade Mode:** Standard Letter **Course Type:** Lecture

Credit Hours: 3

 $\textbf{Restrictions:} \ \textbf{Enrollment is limited to Graduate level students}.$ 

Course Level: Graduate

**Description:** Examination of the major psychological approaches to the study of leadership. Emphasis is on theory and practice in formal

organizations.

PSYC 634 - PERSONNEL PSYCHOLOGY Short Title: PERSONNEL PSYCHOLOGY Department: Psychological Sciences

**Grade Mode:** Standard Letter **Course Type:** Seminar **Credit Hours:** 3

**Restrictions:** Enrollment is limited to Graduate level students.

Course Level: Graduate
Prerequisite(s): PSYC 530

**Description:** Examination of the theory, research, and applications in personnel selection, including job analysis, job performance, evaluation of

performance, validation of selection methods, and training.

#### PSYC 635 - MULTILEVEL MODELING IN PSYCHOLOGICAL RESEARCH

Short Title: MULTILEVEL MODELING Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Psychological data often have a nested structure (e.g., students within classrooms, time points within individuals). Multilevel modeling of such data yields results that are more appropriate and interpretable than traditional statistical methods. Students will gain both practical and conceptional knowledge of this popular methodology.

PSYC 636 - ORGANIZATIONAL PSYCHOLOGY Short Title: ORGANIZATIONAL PSYCHOLOGY Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate Prerequisite(s): PSYC 530

**Description:** Contemporary theory and research in organizational psychology, including topics such as motivation, leadership, job satisfaction, occupational stress, social cognition in work organizations, and group processes. Graduate/Undergraduate Equivalency: PSYC 436. Mutually Exclusive: Cannot register for PSYC 636 if student has credit for PSYC 436.

## PSYC 637 - META-ANALYSIS IN PSYCHOLOGICAL RESEARCH

Short Title: META-ANALYSIS

Department: Psychological Sciences

Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Meta-analysis is a popular tool for statistically aggregating effects across related psychological studies. Course topics traverse a wide range of issues, including developing and using a coding sheet, fixed-vs. random-effects models, analysis moderator effects, correcting for statistical artifacts, dealing with dependent outcomes and outliers, and detecting publication bias.

# PSYC 638 - STRUCTURAL EQUATION MODELING Short Title: STRUCTURAL EQUATION MODELING

**Department:** Psychological Sciences **Grade Mode:** Standard Letter **Course Type:** Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Structural equation modeling attempts to provide improved estimates of construct-level relationships. It also allows for complex hypothesis testing (e.g., mediation between groups, longitudinal) to find an appropriate balance between model parsimony and model fit. This course introduces students to basic concepts and applications of this popular research method.

#### PSYC 639 - INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY INTERNSHIP

Short Title: I/O PSYCHOLOGY INTERNSHIP Department: Psychological Sciences Grade Mode: Satisfactory/Unsatisfactory Course Type: Internship/Practicum

Credit Hours: 1-9

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Supervised internship in organizational and/or personnel psychology. Instructor Permission Required. Repeatable for Credit.

# **PSYC 640 - TOPICS IN HUMAN-COMPUTER INTERACTION**

Short Title: TOPICS IN HCI

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Topics will vary. Repeatable for Credit.

## **PSYC 641 - SPECIAL TOPICS IN HUMAN-COMPUTER INTERACTION**

Short Title: SPECIAL TOPICS IN HCI Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 1-6

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Topics will vary. Repeatable for Credit.

# PSYC 649 - HUMAN FACTORS/HUMAN-COMPUTER INTERACTION

INTERNSHIP

Short Title: HF/HCI PSYC INTERNSHIP Department: Psychological Sciences Grade Mode: Satisfactory/Unsatisfactory Course Type: Internship/Practicum

Credit Hours: 1-9

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Supervised internship in engineering psychology. Instructor

Permission Required. Repeatable for Credit.

# PSYC 651 - TOPICS IN SOCIAL PSYCHOLOGY Short Title: TOPICS IN SOCIAL PSYCHOLOGY

**Department:** Psychological Sciences **Grade Mode:** Standard Letter

Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Topics will vary. Repeatable for Credit.

# PSYC 655 - ADVANCED TOPICS IN HEALTH PSYCHOLOGY

Short Title: ADV TOPICS - HEALTH PSYCHOLOGY

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

**Restrictions:** Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Topics will vary. Repeatable for Credit. Repeatable for Credit.

PSYC 660 - PROFESSIONAL ISSUES Short Title: PROFESSIONAL ISSUES Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Discussion of selected topics on professional matters. Includes grant writing, licensing, and ethics in psychology.

PSYC 662 - NON-TRADITIONAL INTERFACES Short Title: NON-TRADITIONAL INTERFACES Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Advanced coverage of human computer interfaces that are not necessarily graphical in nature. The course covers haptic, gesture, locomotion, auditory, voice olfactory, taste interfaces. Impoverished GUIs (small screen) are investigated, as are interactive voice response systems and complex interfaces that are multi-model. Graduate/Undergraduate Equivalency: PSYC 462. Recommended Prerequisite(s): PSYC 370. Mutually Exclusive: Cannot register for PSYC 662 if student has credit for PSYC 462.

PSYC 663 - MEDICAL HUMAN FACTORS Short Title: MEDICAL HUMAN FACTORS Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Advanced coverage of the human factors that are specific to medical systems. Topics include medical decision making and diagnosis errors, surgical human factors, medical robots, surgical simulators, and general medical equipment design. Macro-ergonomics of hospital systems, electronic medical records and computerized physician order entry systems are also covered. Graduate/Undergraduate Equivalency. PSYC 463. Recommended Prerequisite(s): PSYC 370. Mutually Exclusive: Cannot register for PSYC 663 if student has credit for PSYC 463.

PSYC 664 - USABILITY ASSESSMENT Short Title: USABILITY ASSESSMENT Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: This course covers all of the aspects of specifying, planning, executing, and reporting usability assessments on products, services and systems. Formative and summative assessments are covered, as are "discount" usability methods. This course is project based, with students performing usability assessments as part of an engineering team that is developing products for deployment. Graduate/Undergraduate Equivalency: PSYC 464. Recommended Prerequisite(s): PSYC 370. Mutually Exclusive: Cannot register for PSYC 664 if student has credit for PSYC 464.

PSYC 665 - SEMINAR IN GENES AND COGNITION Short Title: SEMINAR IN GENES AND COGNITION

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** This seminar will consist of reading and discussing papers on molecular genetic studies of various cognitive functions broadly construed. This will include studies of genes and attention, genes and working memory, and genes and executive function. Will also include readings on genes and disordered cognition (e.g., ADHD, Alzheimer's).

PSYC 667 - HUMAN FACTORS IN CYBERSECURITY Short Title: HUMAN FACTORS IN CYBERSECURITY

**Department:** Psychological Sciences **Grade Mode:** Standard Letter

Course Type: Lecture Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Introduction to the human factors that are specific to cybersecurity. Topics will include the security-usability tradeoff, usable authentication, privacy and forensics, security in automated vehicles, internet of things, security warnings, security training and awareness, and so on. Graduate/Undergraduate Equivalency: PSYC 467. Mutually Exclusive: Cannot register for PSYC 667 if student has credit for PSYC 467

## **PSYC 668 - HUMAN FACTORS IN ARTIFICIAL INTELLIGENCE**

Short Title: HUMAN FACTORS IN AI
Department: Psychological Sciences

Grade Mode: Standard Letter Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Introduction to the human factors that are specific to artificial Intelligence (AI). Topics will include societal impacts of AI, trustworthy AI, fair and responsible AI, transparent and explainable AI, privacy and security in AI, ethics in AI, human-AI teaming, future trends and challenges, and so on. Graduate/Undergraduate Equivalency: PSYC 468. Mutually Exclusive: Cannot register for PSYC 668 if student has credit for PSYC 468.

# PSYC 671 - METHODS IN COGNITIVE NEUROSCIENCE Short Title: METHODS COGNITIVE NEUROSCIENCE

Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Seminar

Credit Hours: 3

**Restrictions:** Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** Explores issues in functional neuroimaging and provides hands-on experience with experimental design, data acquisition, and analysis. Examines hemodynamic (PET, FMR), electrophysiologic (EEG, MEG), and other (e.g. neural stimulation, event-related optical) methods of measuring functional activation in the human brain related to cognitive operations. This course is usually offered at the University of Texas Medical School.

PSYC 677 - SPECIAL TOPICS Short Title: SPECIAL TOPICS Department: Psychological Sciences

Grade Mode: Standard Letter

Course Type: Internship/Practicum, Laboratory, Lecture, Seminar,

Independent Study Credit Hours: 1-4

Restrictions: Enrollment is limited to Graduate or Visiting Graduate level

students.

Course Level: Graduate

**Description:** Topics and credit hours vary each semester. Contact department for current semester's topic(s). Repeatable for Credit.

PSYC 681 - PERCEPTUAL ORGANIZATION Short Title: PERCEPTUAL ORGANIZATION Department: Psychological Sciences Grade Mode: Standard Letter

Course Type: Seminar Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate Prerequisite(s): PSYC 581

**Description:** Advanced graduate course. Perceptual organization, primarily in human vision but in other senses too. We examine theoretical issues underlying perceptual organization; principal phenomena; methods used to reveal perception of structure; neural basis of perception organization; theories of perceptual organization; and remaining problems in the field.

PSYC 699 - GRADUATE CAPSTONE EXPERIENCE IN I-O PSYCHOLOGY

Short Title: CAPSTONE EXPERIENCE IN I-O Department: Psychological Sciences Grade Mode: Standard Letter Course Type: Internship/Practicum

Credit Hours: 3

Restrictions: Enrollment is limited to Graduate level students.

Course Level: Graduate

**Description:** This course is required for the MA in IO Psychology. It is a multi-semester, hands-on applied experience that can take the form of either an internship, an applied research experience, or a portfolio of work that reflects the integration of I-O science and practice. Instructor

Permission Required. Repeatable for Credit.

PSYC 700 - THESIS RESEARCH Short Title: THESIS RESEARCH Department: Psychological Sciences Grade Mode: Satisfactory/Unsatisfactory

Course Type: Research Credit Hours: 1-15

**Restrictions:** Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Research for the master's thesis. Repeatable for Credit.

PSYC 800 - DISSERTATION RESEARCH Short Title: DISSERTATION RESEARCH Department: Psychological Sciences Grade Mode: Satisfactory/Unsatisfactory

Course Type: Research Credit Hours: 1-15

**Restrictions**: Enrollment is limited to students with a major in Psychology. Enrollment is limited to Graduate level students.

Course Level: Graduate

Description: Research for the doctoral dissertation. Repeatable for Credit.

# **Description and Code Legend**

**Note:** Internally, the university uses the following descriptions, codes, and abbreviations for this academic program. The following is a quick reference:

# **Course Catalog/Schedule**

· Course offerings/subject code: PSYC

# Department (or Program) Description and Code

· Human-Computer Interaction and Human Factors: HCIF

# **Graduate Degree Description and Code**

· Master of Human-Computer Interaction and Human Factors: MHCIHF

# **Graduate Degree Program Description and Code**

• Degree Program in Human-Computer Interaction and Human Factors: HCIF

# CIP Code and Description 1

- HCIF Major/Program: CIP Code/Title: 30.3101 Human Computer Interaction
- Classification of Instructional Programs (CIP) 2020 Codes and Descriptions from the National Center for Education Statistics: <a href="https://nces.ed.gov/ipeds/cipcode/">https://nces.ed.gov/ipeds/cipcode/</a>