Department of Psychology

Graduate Courses
2018-2019
revised December 12, 2018

FALL TERM

September 10 - November 30, 2018

Course	Title	Instructor	Day	Time	Location
PSY1210HY	Selected Topics in Psychology: *Introduction to Computer Programming for Psychology* *September 10 - April 5, alternating Mondays	Duncan & Mack	Mon	3-5	RW107 (fall) RW109 (winter)
PSY2001HF	Design of Experiments I: *General Linear Model*	Cunningham, W.	Tues	10-12	SS560A
PSY2002HF	Design of Experiments II: *Advanced Statistics*	Page-Gould	Tues	9-11	LA211
PSY5101HF	Mechanisms of Behaviour: *Mechanisms and Clinical Models of Pain*	Martin	Fri	10-12	SS4004
PSY5203HF	Higher Cognition: *Cognitive Neuroscience*	Moscovitch	Thur	1-3:30	SS560A
PSY5210HF	Advanced Topics in Perception I: *Signal Processing in Audition and Vision*	Schneider	Tues	2-4	SS560A
PSY5221HF	Advanced Topics in Cognition II: *Neurocognitive Aging*	Anderson	Wed	2-4	SS560A
PSY5222HF	Advanced Topics in Cognition III: *Interventional Neuroscience - Brain Hacks and Brain Quacks*	Meltzer	Thur	10-12	SS560A
PSY5433HF	Advanced Topics in Social Psychology IV: *Positive Psychology of Relationships*	Impett	Tues	12-2	SS560A
APD1236HF	Developmental Psychopathology *Cross-listed with Applied Psychology & Human Development	Jenkins	Tues	9-12	SK222

WINTER TERM

January 7 - April 5, 2019
Reading week: February 18-22, 2019

Course	Title	Instructor	Day	Time	Location
PSY1200HS	Selected Topics in Psychology: *Introduction to Functional Magnetic Resonance Imaging for Cognitive Neuroscience*	Lee, A.	Wed	2-4	SS560A
PSY3001HS	Professional Psychology: *Practical Knowledge & Skills for a Successful Career*	Murphy & Troyer	Thur	3-5	SS560A
PSY5110HS	Advanced Topics in Behavioural Neuroscience I: *Neurobiology of Social Behaviour*	Holmes	Mon	10-12	UTM: CCT3000
PSY5130HS	Advanced Topics in Neuropsychology I: *Cognitive Neuropsychiatry*	Gilboa	Tues	10-12	SS560
PSY5201HS	Audition: *Advanced Topics in Auditory Cognitive Neuroscience*	Alain	Tues	2-4	SS560A
PSY5211HS	Advanced Topics in Perception II: *The Cognitive Neuroscience of Mental Imagery*	Buchsbaum, B.	Wed	10-12	SS560A
PSY5220HS	Advanced Topics in Cognition I: *The eyes are the window to… the interplay between language, vision, and cognition*	Chambers	Thur	10-12	SS560A
PSY5411HS	Advanced Topics in Abnormal II: *Health Psychology*	Andersen	Wed	10-12	UTM: DH4005
PSY5431HS	Advanced Topics in Social Psychology II: *Psychology of Human Sexuality*	MacDonald	Thur	1-3	SS560A
PSY5432HS	Advanced Topics in Social Psychology III: *Motivation in Social Psychology*	Plaks	Tues	10-12	SS560A

Graduate Courses 2018-2019

PSY1210HY   Introduction to Computer Programming for Psychology
                 Instructors: Duncan & Mack

Over recent years computer programing skills have become a requirement for conducting psychological research across many subdisciplines. We designed this course to provide new graduate students with foundational programming skills and knowledge of tools relevant for psychology, with the aims of (1) enabling their current research and (2) providing the building blocks for acquiring more specialized methods. This 0.5 credit course will meet every other week throughout both terms to track the demands of students' new research projects. We will begin with introductory concepts and good practices (e.g., version control, logical statements, and debugging). We will then move on to experiment programming, surveying specialized software for stimulus presentation (e.g., Psychopy, Psychtoolbox, EPrime, and Qualtrics). In the second term, we will cover data management, restructuring, and quality control followed by data visualization. Course instruction will be grounded in Python and R languages, but assignments can be completed using languages and tools that are most applicable to the student's research. No programming knowledge is required. Students with programming backgrounds are also encouraged to register.

PSY2001HF   General Linear Model
                 Instructor: Cunningham, W.

This course is designed to introduce the student to the General Linear Model and two of its most common expression: Analysis of Variance and Multiple Regression. Additionally, student we be asked to familiarize themselves with some of the current theoretical issues in realm of data analysis itself, e.g., the value of testing the null hypothesis.

PSY2002HF   Advanced Statistics
                 Instructor: Page-Gould

This course will provide a practical introduction to a number of different advanced statistical methods used in psychological research. Specifically, the course will cover the following topics: (1) Path analysis and Mediation; (2) Mixed effects/multilevel modelling; (3) Non-gaussian models (e.g., logistic regression) and bootstrapping; (4) Bayesian Hypothesis Testing; (5) Factor analysis, including exploratory factor analysis/principal components analysis, confirmatory factor analysis, and cluster analysis; (6) Structural Equation Modelling; and, (7) Time-based analysis like time series, lagged regression, and latent growth curves. The course will place a strong emphasis on practical application, such that every class will include demonstrations, electronic copies of sample syntax in SPSS and R, and brief computer-based data analysis exercises. You will also learn to be an active consumer of quantitative psychology articles, as well as develop generalizable strategies for statistical reporting. You will only need to be familiar with one of the following statistical packages: SPSS, R, or SAS. The course will have a final project where you will be required to use one of the analyses you learn in class to analyze your own data or public data and then write methods, results, and discussion sections that describe your findings. You will also be expected to complete lab assignments that involve conducting analyses on

example datasets in the statistical software package of your choice. The goal is for you to leave the class with an understanding of when and how to apply each of the statistical techniques you learn. Knowledge of these modern statistical tools will increase the flexibility of your research designs and the statistical rigour with which you analyze your data.

PSY5101HF   Mechanisms and Clinical Models of Pain
                Instructor: Martin

This course provides attendees with vocabulary and knowledge about anatomy, physiology, mechanisms and modulation of pain. During the first part of the course (4 weeks) the students will be expected to learn the basics of the somatosensory system and pain from readings in textbooks, assigned papers, lectures and classroom discussions. Then, emphasis will be placed on critical analysis of primary literature during the weekly student-led journal discussions. These papers will be chosen so as to cover most of the major topics with a focus placed on their clinical implications. Students will also prepare a mock grant application and function as a peer review committee. At the completion of this course, students will have a solid understanding of the current state of knowledge in the field.

PSY5203HF   Cognitive Neuroscience
                Instructor: Moscovitch

The core course in cognitive neuroscience relates function to structure so that one can illuminate the other, so as to provide an understanding of brain organization, behaviour and mind. In addition to an overview of brain anatomy and functional neuroimaging, the topics covered in the course include memory, attention, face and object-recognition, spatial cognition, language, emotion, theory of mind, empathy, decision making and consciousness.

PSY5210HF   Signal Processing in Audition & Vision
                Instructor: Schneider

This course will explore the nature of the signal-processing strategies used by humans to detect and recognize an indefinitely large number of auditory and visual patterns. We will begin by considering how the information available in the physical stimulus can best be described and represented (Fourier decompositions, time-domain analyses, etc.). In doing so we will illustrate how digital signal processing techniques have greatly simplified the use of these techniques in analyses of auditory and visual scenes. We will then examine the signal-processing strategies employed by perceptual systems to extract information from the energy patterns impinging on the eyes and ears of the observer. It is assumed that students are familiar with the basic principles of calculus (high school or first-year calculus).

PSY5221HF   Neurocognitive Aging
                Instructor: Anderson

This seminar will combine well-established cognitive aging literatures with evidence from recent neuroimaging research to advance students' understanding of neurocognitive aging. The term will start with an introduction to neuroimaging methods and issues that arise when using these technologies to compare age groups. Then we will focus on different cognitive domains and hot topics in the area. These will include attention, working memory, episodic encoding and retrieval, and functional reorganization, as well as other areas depending on students' interests. The course requirements include leading one session, active class participation, critical notes about the assigned readings, and a final paper in the form of a grant proposal.

PSY5222HF   Interventional Neuroscience: Brain Hacks and Brain Quacks
Instructor: Meltzer

Improving the function of the brain noninvasively is a formidable scientific challenge. For the treatment of neurological and psychiatric disorders, and for cognitive enhancement in healthy people, dozens of techniques offer promise, yet threaten to devolve into quackery if pushed into use without an adequate evidence base. This course will take a critical look at some of the most promising yet controversial emerging treatments for brain disorders, emphasizing their mechanisms of action and the challenges involved in testing their effectiveness. Topics include: brain training, nootropics, mindfulness, neurofeedback, electromagnetic brain stimulation, and other favourites of the brainhacking community.

PSY5433HF   Positive Psychology of Relationships
Instructor: Impett

This graduate seminar will explore positive perspectives on close relationships, with a particular emphasis on romantic relationships. Topics include optimism, self-expansion, social support, capitalization, sacrifice, gratitude, communal relationship, emotional expression and regulation, dealing with conflict, and forgiveness. Across topics, we will focus on understanding the circumstances under which these positive processes are most likely to benefit relationships, but also when the benefits of these processes might unwind and ultimately cause more harm to relationships than good.

APD1236HF   Developmental Psychopathology
Instructor: Jenkins

The aim of this course is to provide students with a basic understanding of child and adult psychopathology. In order to do this we will look at normative patterns in personality, behavior and emotions. We will treat the work in the epidemiology of childhood and adult disorders as central to our understanding of these disorders, and discuss the methodological issues involved in this type of approach that make it so useful to understanding etiology, course, treatment and prognosis. The diversity of functioning in the emotional and behavioral realm will be reviewed in order to understand issues of abnormal or pathological development. The way in which the social and cultural context interacts with genetic and constitutional aspects of the individual will also be considered. This will give us the basis for examining some of the most common disorders and understanding the dynamics of these disorders during childhood and into adulthood.

August 23, 2018

PSY1200HS **Introduction to Functional Magnetic Resonance Imaging for Cognitive Neuroscience**
Instructor: Lee, A.

This course is for those with limited or no knowledge of functional magnetic resonance imaging (fMRI). We will cover some of the basic principals of this methodology including MR physics, experimental design, data pre-processing, statistical analysis, and results reporting. There will be opportunities to design your own experiment, analyse sample data, and consider some of the strengths, weaknesses and challenges of fMRI. The aim is that by the end of this course, you will have a good foundational understanding of fMRI as used in cognitive neuroscience, on which you can then build your own work and receive more detailed training from the research group in which you are based.

PSY3001HS **Practical Knowledge & Skills for a Successful Career**
Instructors: Murphy & Troyer

This course provides a comprehensive and practical overview of the roles and skills of psychologists in academic and non-academic settings. Topics include research ethics, professional ethics, best practices in teaching/supervision and research design, scope of career opportunities in psychology, innovating in the field, professional organizations, and representing psychology in the media.

PSY5110HS **Neurobiology of Social Behaviour**
Instructor: Holmes

The course will focus on the development and adult organization of brain mechanisms underlying the perception of social information and production of social behaviours in diverse species. Each week will focus on a unique topic (e.g., eusociality in hymenoptera; face perception in humans; etc) incorporating a mix of lecture, primary literature, and group discussion.

PSY5130HS **Cognitive Neuropsychiatry**
Instructor: Gilboa

The course focuses on cognitive and neurocognitive aspects of psychopathological disorders. It will explore how clinical disorders can be studied using theories, concepts and methodologies that are used for understanding normal cognition and the relation between brain and behaviour. To the extent possible, the entities of investigation will be symptoms that can sometimes cross diagnostic boundaries, rather than the more typical syndrome-based diagnostic approach of psychiatry. The format of the course is a lecture-based seminar but group discussions are also a significant part of it, and students are expected to arrive prepared for discussions.

PSY5201HS **Advanced Topics in Auditory Cognitive Neuroscience**
Instructor: Alain

In this graduate seminar, we will discuss new and emergent theories regarding the processing of complex auditory events (e.g., speech and music). For instance, we will discuss the notion of objecthood in the auditory domain and its usefulness. We will explore parallels between models for auditory and visual scene analysis and object representations. This seminar will also explore how attention and auditory memory interacts. A brief overview of anatomy and physiology of the auditory system will be included.

August 23, 2018

PSY5211HS   The Cognitive Neuroscience of Mental Imagery
Instructor: Buchsbaum, B.

The course will involve readings and discussion of the neuroscientific basis of various forms of mental imagery.

PSY5220HS   The eyes are the window to… the interplay between language, vision, and cognition
Instructor: Chambers

Multimodal approaches are increasingly used to explore core features of mental architecture and to provide benchmarks of real-time perceptual and cognitive processing abilities over the human lifespan. We will discuss these approaches, along with key findings, in domains including language acquisition and processing, multilingualism, situated and social cognition, the organization of semantic memory, and the relationship between language and thought. We will also cover design and data interpretation issues for a range of relevant experimental paradigms.

PSY5411HS   Health Psychology
Instructor: Andersen

This course provides an in-depth study of the most relevant topics in health and abnormal psychology, both from a clinical and social perspective. Students will learn about the biological mechanisms by which stress and social experiences get 'under the skin' and influence health across the life span. Specific topics include: interaction between mental and physical health; health behaviour change; pain; diversity and disparities in healthcare; the impact of severe stress on health, population health, nutrition and physical exercise. Class material includes popular media evaluation as well as a review of empirical research and methods in health psychology research.

PSY5431HS   Psychology of Human Sexuality
Instructor: MacDonald

Sexuality is a topic of growing interest in psychology. Although sexual selection is arguably the strongest driver of human evolution and the management of sexual needs is deeply intertwined with cultural practices, psychology has left many fundamental questions regarding human sexuality largely unanswered. This course will survey multiple issues including sexual orientation, sexual attraction, short and long term sexual relationships, sexual fantasy, and paraphilias. Please be aware that we will be covering some very sensitive material.

PSY5432HS   Motivation in Social Psychology
Instructor: Plaks

This graduate seminar involves reading and discussion of seminal articles on motivation in the history of social psychology. A key emphasis will be on how motivation and cognition mutually influence each other to produce behavior. This course will explore such key issues as: the influence of values and desires on cognition; goal setting and goal pursuit; self-regulation and self-control.