Course Code | Instructor | Day | Time | Title | Sub-title
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PSY120HH* | Duncan & Mack | Tues | 1-3 | STG, SS560A | Selected Topics in Psychology: Introduction to Computer Programming for Psychology
PSY2001HF | Cunningham, W | Tues | 10-12 | STG, SS560A | Design of Experiments I: General Linear Model
PSY2002HF | Mischoul & Buchsbaum, B. | Tues | 10-12 | STG, SS560 | Design of Experiments II: Multivariate Statistical Inference
PSY5121HF | Ralph | Wed | 3-5 | STG, SS4004 | Advanced Topics in Behavioral Neuroscience I: Chronobiology: Temporal Aspects of Human Behaviour
PSY5121HH | Geral | Wed | 1-3 | UTM, CCT403 | Advanced Topics in Animal Behavior and Motivation II: Animal Behaviour Genetics
PSY5202HH | Pica | Wed | 9-11 | STG, SS560A | Advanced Topics in Cognition I: Population and Cognitive Neuroscience
PSY5222HH | Levine | Mon | 10-12 | STG, SS560A | Advanced Topics in Cognition III: Individual Differences in Cognitive and Neural Function
PSY5305HH | Haley | Mon | 1-3 | STG, SS600A | Social Development: Dyadic Processes in Social Cognitive Development
PSY5310HH | VanderLaan | Wed | 1-3 | STG, SS600A | Advanced Topics in Development I: Controversies in the Scientific Study of Children and Youth
PSY5311HH | Schlichting | Mon | 3-5 | STG, SS600A | Advanced Topics in Development II: Topics in Developmental Cognitive Neuroscience
PSY5403HH | Neel | Wed | 6-8 | STG, SS600A | Social Cognitive Neuroscience: Structural Imaging, Brain Stimulation, Brain Development, Population Neurosciences
PSY5413HH | Cupchik | Thurs | 2-4 | STG, SS4004 | Advanced Topics in Social Psychology II: Consciousness, Creativity, and Imagination
PSY5433HH | Stellar | Wed | 10-12 | STG, SS4004 | Advanced Topics in Social Psychology IV: Exploring Empathy and Other Forms of Mind Simulation

*year-long course (September - April) meeting bi-weekly

Over recent years computer programming 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 1.5 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., Psychology, Psychoptichox, 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.

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 will 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.

The course will cover traditional multivariate statistical methods with an emphasis on their derivation from the general linear model (e.g, discriminant analysis, factor analysis and canonical correlation). Extensions to multidimensional scaling and DISTATIS will be examined, and additional applications to “Big Data” in neuroimaging and genetics. The assumption is that students will have had at least one upper level statistics course (e.g, PSY2001) and be familiar with basic matrix algebra. Course evaluation will be based on short lab assignments, a presentation and a final term paper.

The temporal dimension is not usually considered separately from spatial and physical factors in the understanding of human behaviour. Rather, it is considered as a modeller of general principles of how the brain processes and stores information. However, temporal regulation is shared by all species, and a sense of time is embedded in the control of human behaviour. We will look at several major impacts that temporality (the sense of time) has on human psychology including regulation of learning and memory, episodic memory, the ability to catch a ball, follow anticipates music and speech, the ability to sense and remember the passage of time, and the consequences of dysfunctional timing.

The course will discuss the principles and applications of behaviour genetics focusing on developments of this field over the past two decades. The course will mainly deal with animal behaviour genetics research and will discuss approaches such as genome editing techniques including gene targeting and other transgenic methods, as well as gene expression profiling and analysis, and forward genetic applications. The course is designed for the psychology and biopsychology student and does not require a strong foundation of genetics.

The course will cover basic principles of cognitive neuroscience and brain imaging, and the application of these approaches in the context of population neuroscience (see PMID:27637950). It will consist of the following elements: (1) six 45-min lectures (Neuropsychology, Functional Imaging, Structural Imaging, Brain Stimulation, Brain Development, Population Neurosciences); (2) student presentations of key papers illustrating research covered in each lecture, and (3) mini-projects consisting of statistical analysis and interpretation of data provided by the lecturer.

There has been a recent surge in individual difference applications in the cognitive and brain sciences, particularly using brain imaging methods, to enhance prediction over and above standard analyses of group differences. This course will survey individual difference research in cognitive neuroscience on topics such as intelligence, perception, imagery, attention, memory, language, and executive functioning in healthy adults, developmental, and clinical samples (e.g., aging and dementia). We will address developmental syndromes such as aphasia, topographical disorientation, prosopagnosia, synesthesia, ADHD, learning disabilities, and superior antepriori autobiographical memory.

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The aim of this course is to provide a fundamental understanding of the principles of behaviour genetics. This will include an overview of the historical and current landscape of genetic research, as well as an introduction to the basic principles of statistical genetics. The course will cover traditional methods such as linkage analysis, association studies, and genome-wide association studies, as well as more advanced methods such as whole-genome sequencing and single-cell genomics.

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 will 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.

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This course provides a practical overview of facets for a successful career in academic or non-academic psychology. Topics include research ethics, open science, writing skills, and publishing processes. Guest panelists will provide tips on topics such as navigating graduate school, academic and non-academic jobs, and applying for funding. The primary requirements are participating in class and panel discussions, with the occasional brief assignment.

This course pairs recent findings in developmental psychology, social psychology, and cognitive science with central texts from classical and contemporary philosophy. The course will be structured around three intertwined topics related to how we reason about the self across the lifespan: Mind Perception, Morality and Justice, and Personal Identity.

Despite the prescriptive claims of scientific unitarians from J. S. Mill to E. O. Wilson, the discipline of psychology continues to walk on two legs as both a natural and a social science. This course addresses key metaphysical, epistemological, and ethical questions concerning the second leg – psychology as a social science. What is social reality? How does it relate to agency and intentionality? What does it mean to explain human action? How do and should causality, prediction, laws, reasons, and interpretation figure in social scientific explanation? Can naturalist and relativist approaches to understanding social life be reconciled? What is the place of values in social inquiry? To what extent does studying the social world legitimate or challenge it? What are the ethical implications of this for the social scientist? Finally, do responses to the above questions point to any essential differences between natural and social science? Guided by classic and contemporary readings in philosophy of science, students will be encouraged to develop their own positions on the issues examined and test out these positions in class discussion. The result, it is hoped, will be as many distinct perspectives as there are students enrolled.

This course will provide a practical introduction to a number of modern advanced statistical methods used in psychological research. Specifically, the course will cover the following topics:

1. Path analysis and Mediation
2. Mixed effects/multilevel modeling
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 Modeling, 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 to critically evaluate psychological research. You will 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 psychological 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.

This course provides a practical overview of facets for a successful career in academic or non-academic psychology. Topics include research ethics, open science, writing skills, and publishing processes. Guest panelists will provide tips on topics such as navigating graduate school, academic and non-academic jobs, and applying for funding. The primary requirements are participating in class and panel discussions, with the occasional brief assignment.

This course will focus on recent progress in understanding the neurobiological bases of memory. The course will involve discussion of contemporary memory studies, predominantly in rodents, that offer new mechanistic insight into memory processes covering a range of topics including encoding, consolidation, storage, retrieval, retrieval-associated processes such as reconsolidation, and forgetting. Students will be expected to present and discuss these primary papers.

This course will involve the engagement of contemporary literature in the field of neurobiology and Behaviour following the development of the field from Beauch’s early rodent studies to current studies using brain imaging to identify differences in gay, straight, and transgendered human brains. Primarily dealing with central nervous system anatomy and its relationship to sexually dimorphic behaviours, this course emphasizes the role of steroid hormones and experience in shaping differences in behaviour, cognition, and identity. In following this field into the present, students will gain an appreciation for changing norms in research, how a field of scientific knowledge develops, sex differences in the brain, and the role of steroid hormones in shaping memory, cognition, mental health, and neurological disorders. Students will present papers in the text as well as of their own choosing.

Most psychotropic drugs produce their behavioural effects by altering the functioning of brain neurotransmitter systems. Alterations in these same transmitter systems may underlie psychiatric, neurological and psychological disorders. This course will examine selected topics relating to neuropsychopharmacology and the mechanisms of action of psychotropic drugs (both therapeutic and recreational). In covering these topics we will consider experimental work conducted at the preclinical level (using laboratory animals) as well as in humans.

In brief, the course will provide an introduction to the most important concepts in modern pharmacology, with an emphasis on the role of neurotransmitters and their receptors in mediating the actions of psychoactive drugs. The course will also touch upon related ethical implications.

This course will cover prominent theories regarding the nature of memory, and the empirical support for and against each theory. Readings will cover findings from the earliest investigations with case H.M. to the present day to illustrate the evolution of ideas regarding representations, processes and systems. The course will review evidence derived from behavioural, neuropsychological, electrophysiological, and neuroimaging studies. Theories of memory, as well as the advantages and limitations of the techniques used, will be discussed using debate formats throughout the semester.

There has been an exponential increase in marketing of brain enhancing gadgets and media coverage of medical discoveries involving neuroimodulation. Hype vs hope for changing brain circuitry? In this course we will review a variety of neuroimodulation techniques (e.g., TMS, tDCS, DBS, neurofeedback, neuropharmacology). We will examine these in the context of treating neurological conditions and psychiatric disorders, and enhancing cognition and mood. General goals of this course are to gain a deeper understanding of their mechanisms, the appropriate way to demonstrate their therapeutic efficacy, and of how to evaluate relevant research claims critically. We will also touch upon related ethical implications.

This course will expose students to a number of classic and contemporary theories and empirical findings in the area of self-regulation. The topics covered in this course represent a broad selection of major themes in the field and each topic will provide students with the opportunity to develop their understanding of the field as well as learn how social, personality, and cognitive psychologists think about this topic. The topics covered in class include (but are not limited to) self-control, cognitive control, motivation, goal setting, proactive and reactive control, conscientiousness, addiction, and the neuroscience of control. The course will be discussion based, with lecturing kept to a minimum.

This seminar reviews the recent scientific literature on how humans manage or control their emotions (emotion regulation). In a discussion-based format, these lessons will explore topics that concern the emotional regulation of the self, as well as the social regulation of the self. More specifically, we will explore why people regulate emotions, how they do so, the social-cultural factors that influence emotion regulation, and what emotion regulation can do for our health, relationships, and happiness.