

Dept. of Psychology
Seminar Descriptions (2021-22)

PSY 420F – Seminar in The Psychology of Human Sexuality (Dr. Geoff 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. It will also include outside speakers with relevant expertise. *Please be aware that we will be covering some very sensitive material.*

PSY 460F – Biopsychological Approaches to Study Cognition (Dr. Kaori Takehara-Nishiuchi)

Recent advances in tools and technology open the door to investigating the biological basis of various cognitive processes, such as memory, spatial navigation, decision making, and social interaction. In this course, we will read and discuss primary research articles on biopsychological experiments using non-human animals to gain insights into how cognitive processes are associated with genetic and physiological changes in the brain. The course will include brief lectures on methods and measures used in the assigned articles; however, a basic understanding of molecular biology, neurophysiology, and neuroanatomy is expected. *Successful completion of PSY202H1 and PSY260H1 is required; PSY290H1 is recommended.*

PSY 471F – Computations of the Mind and Brain (Dr. Michael Mack)

This course explores the emerging field of computational model-based cognitive neuroscience. Until recently, cognitive psychology and neuroscience have largely taken different approaches to understanding cognition. However, a new research approach combines neuroscience techniques like neurophysiology and brain imaging with psychological models that explain cognition in terms of a computational language. This approach, called model-based cognitive neuroscience, aims to uncover the brain's computations for learning, memory, and decision making. This course will cover the key aspects of model-based cognitive neuroscience: how cognition can be described in mathematical terms, how neuroscience techniques measure information in brain activity, and how connecting cognitive models to brain function advances our understanding of the computations of the mind and brain.

PSY 490F – Human Chronobiology (Dr. Martin Ralph)

This course focuses on issues of biological timing that are important to human health, development, learning/memory, and performance. Timing systems in other organisms are introduced as appropriate for each topic. The course builds a base of understanding of timing mechanisms, how they are produced at different levels of biological organization, and how disorganization can contribute to chronic mental and physical health disorders.

PSY 497F – The Temporal Dimension in Biology and Behaviour (Dr. Martin Ralph)

This is an advanced course in biological timing (chronobiology, circadian biology, time memory). Its intent is to probe more deeply into the neural mechanisms and significance of timing in biology, not only in the study of biological clocks, but also more broadly in the importance of timing in sensorimotor integration, memory, decision making, and health. The topics are organized in a hierarchical manner so that a base of understanding (and a common jargon) can be developed early on with more detailed studies later.

PSY 410S – The Moralities of Everyday Life (Dr. Paul Bloom)

This seminar dives into the modern science of moral thought and moral action, explored through the disciplines of cognitive science, social and developmental psychology, neuroscience, behavioural economics, and analytic philosophy. Topics include empathy and compassion in babies and young children; emotional reactions to family, friends, and strangers; the origins of prejudice and bigotry; sexuality, disgust, and purity; punishment, revenge, and forgiveness; dehumanization, and the relationship between morality and religion. No specific requirements, but participants should be prepared to read, and discuss, articles from a wide range of intellectual disciplines.

PSY 420S – Evolutionary Perspectives on Social Psychology and Culture (Dr. Rebecca Neel)

In this course we will explore evolutionary approaches to predicting and explaining human social behavior and culture. We will critically consider these perspectives' strengths and weaknesses, examining their assumptions, methods, and theoretical tools. What are better and worse ways to adopt an evolutionary perspective? How do evolutionary perspectives generate hypotheses about human social behavior, and how are these hypotheses tested? We will discuss readings that apply evolutionary approaches to understanding motivation, relationships, prejudice, intergroup relations, social learning, cultural evolution, and other topics.

PSY 420S – Identity and Relationships in the Digital Age (Dr. Claire Midgley)

More than ever before, technology plays a massive role in our social lives - from identity formation and expression to relationship initiation and maintenance. In this course, we will ask questions such as: How does social media influence self-esteem? When do dating apps facilitate vs. undermine romance? What are the pros and cons of being in perpetual connection with loved ones? Through weekly readings and discussions, we will review the latest findings and draw connections with classic issues and theory.

PSY 471S – Developmental Cognitive Neuroscience: How the Changing Brain Shapes Learning (Dr. Amy Finn)

This course will ask how changes in the developing brain and its plasticity can help us understand cognitive development and learning. To answer this question, we will first briefly survey methods in (developmental) cognitive neuroscience and go over the process of human brain development. We will then review core concepts including plasticity, the role of experience in brain development, and the specialization of brain regions. Finally, we will cover specific topics including the development of sensory and motor systems and the development of multiple aspects of learning and memory. In all cases, we will ask whether neural measures and indices of brain plasticity inform our understanding of how cognitive processes change with age. Successful completion of *PSY202H1* and *PSY270H1* is required; *PSY210H1* and *PSY493H1* are recommended.

PSY 471S – The Visual Brain: Attention, Working Memory, and Awareness (Dr. Susanne Ferber)

How does our brain give rise to our abilities to perceive information, act on it, think about it, and maintain it after it has been removed from view? This course examines cognitive and neural systems that guide our awareness, behaviour, and mental capacity. We will review the basic facts, classic and recent research papers, theories, and methods of study in the field exploring how the processing of visual information is instantiated in neural activity. Major emphasis is placed on attentional systems, working memory, and the study of visual awareness.

PSY 471S – The Nature and Function of the Self (Dr. John Vervake)

This seminar will explore how current psychology, cognitive science, and neuroscience are transforming our understanding of the nature and function of the self. We will confront claims that the self is an illusion, and we will look at the relations the self has to narrative, intelligence, consciousness, and agency. The course will consist of six lectures, followed by six sessions of student presentations and discussions.

PSY 490S – Seminar in Optogenetic Probing of Animal Behaviours (Dr. Junchul Kim)

The course will survey a variety of genetic neuron manipulation methods being used in the systems neuroscience field, with a particular focus on light-induced neuron manipulation methods and applications.