

**THE UNIVERSITY OF WESTERN ONTARIO  
DEPARTMENT OF PHILOSOPHY  
Undergraduate Course Outline 2018-19**

**Philosophy 3450F: Philosophy of Neuroscience**



Winter Term 2018  
Tues 1:30-2:30 p.m.; Thurs. 1:30-3:30 p.m.  
Classroom: MC 17

Instructor: Jacqueline Sullivan  
Office: Rotman Institute, 7170 WIRB  
Office Hours: Tues.&Thurs 12-1 p.m.  
[jsulli29@uwo.ca](mailto:jsulli29@uwo.ca)

**COURSE DESCRIPTION**

During the past three decades neuroscience has made major strides in advancing our understanding of the brain and nervous system, consciousness, cognition and behavior. Such advances have prompted interest in neuroscience among philosophers of mind and philosophers of science, leading to the creation of two new philosophical research areas: “neurophilosophy” and “philosophy of neuroscience”. Neurophilosophers are interested in questions such as: Are mental states nothing over and above brain states? How does the brain enable subjective and emotional experiences, higher-order consciousness and cognition? What kinds of claims about traditional philosophical issues such as the mind-brain relationship, free will and human morality can be made on the basis of neuroscientific data? What are the implications of neuroscience for the law? What are the ethical implications of enhancing or altering human brain function? Philosophers of neuroscience, in contrast, are concerned with questions like: What is the nature of explanation in neuroscience? What kinds of assumptions inform neuroscientific research? What makes for a good or reliable neuroscientific experiment?

In this course we will address each of these questions. The course should be of interest to students majoring in philosophy, cognitive science or neuroscience.

## **TEXTS**

A combination of philosophical and scientific (i.e., methodological, research and review papers/chapters) articles extracted from philosophical and scientific journals, books, textbooks, and anthologies will be made available to students as PDF files on OWL.

## **OBJECTIVES**

Students who successfully complete this course will have a basic understanding of specific aspects of neuroscience and a detailed understanding of the major philosophical issues that arise in the philosophy of neuroscience and neurophilosophy. They will also have gained fundamental training in reading and interpreting seminal works in philosophy of neuroscience and neurophilosophy as well as the skills requisite to critically evaluate this work and formulate and defend their own arguments on topics that interest them.

## **REQUIREMENTS**

Attendance & Participation:	20%
Exam (TBA):	20%
Paper 1:	30%
Paper 2:	30%

Papers will be accepted up to 7 days after the scheduled due date without penalty. After 7 days, papers will lose 5 points/day. All papers are to be submitted via the “Turn It In” link on the OWL course website.

The instructor will provide explicit directions as well as possible topics for the papers. Students may design their own topic; the instructor just needs to approve it. We will set aside class time to talk about the paper—how it is to be structured, what the precise requirements. The instructor is willing to provide feedback on outlines and drafts in person or via email (jsulli29@uwo.ca). Soft deadlines for submitting preliminary outlines and drafts will be built into the final version of the syllabus.

## **AUDIT**

Students wishing to audit the course should consult with the instructor prior to or during the first week of classes.

## **DEPARTMENT OF PHILOSOPHY POLICIES**

The **Department of Philosophy Policies** which govern the conduct, standards, and expectations for student participation in Philosophy courses is available in the Undergraduate section of the Department of Philosophy website at <http://uwo.ca/philosophy/undergraduate/policies.html>.

It is your responsibility to understand the policies set out by the Senate and the Department of Philosophy, and thus ignorance of these policies cannot be used as grounds of appeal.

## **ACCOMMODATION**

Students seeking academic accommodation on medical grounds for any missed tests, exams, participation components and/or assignments worth 10% or more of their final grade must apply to the Academic Counselling office of their home Faculty and provide documentation. Academic

accommodation cannot be granted by the instructor or department. Documentation shall be submitted, as soon as possible, to the Office of the Dean of the student's Faculty of registration, together with a request for relief specifying the nature of the accommodation being requested. The UWO Policy on Accommodation for Medical Illness and further information regarding this policy can be found at [http://uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_medical.pdf](http://uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf).

### **ACADEMIC OFFENCES**

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf)

### **PLAGIARISM CHECKING**

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com <http://www.turnitin.com>.

### **SUPPORT SERVICES**

Registrarial Services <http://www.registrar.uwo.ca>

Student Support Services <https://student.uwo.ca/psp/heprdweb/?cmd=login>

Services provided by the USC <http://westernusc.ca/services/>

Student Development Centre <http://www.sdc.uwo.ca/>

Students who are in emotional/mental distress should refer to Mental Health@Western <http://www.uwo.ca/uwocom/mentalhealth/> for a complete list of options about how to obtain help. Immediate help in the event of a crisis can be had by phoning 519.661.3030 (during class hours) or 519.433.2023 after class hours and on weekends.

## Tentative Schedule of Classes

(Reading assignments, exam date and paper due dates will be modified on final syllabus)

### **Introduction to Philosophy and the Neurosciences (3 Class Sessions—January 8, 10, 15)**

- William Bechtel, Pete Mandik & Jennifer Mundale. (2001) “Philosophy Meets the Neurosciences” in *Philosophy and the Neurosciences: A Reader*. Blackwell, pp. 4-22. (On Owl)
- Patricia Churchland & Terrence Sejnowski (1988), “Perspectives on Cognitive Neuroscience”, *Science* 242, 4879: 741-745. (on Owl)
- See also: *Brain Facts: A Primer on the Brain and Nervous System* (2012) published by the Society for Neuroscience. Suggested Reading: pp. 4-17. (On Owl)

### **Consciousness and the Brain (3 Class Sessions—January 17, 22, 24)**

- David Chalmers, “On the Search for the Neural Correlate of Consciousness” pp. 1-12.
- Watch David Chalmers’ interviews on PBS’s *Closer to Truth*  
<https://www.closetotruth.com/series/toward-science-consciousness#video-47331>  
<https://www.closetotruth.com/series/toward-science-consciousness#video-54803>
- Christof Koch, Marcello Massimini, Melanie Boly and Giulio Tononi (2016) “Neural correlates of consciousness: progress and problems” *Nature Reviews Neuroscience* 17: 307-321.  
Watch Tononi video: <https://www.youtube.com/watch?v=7IGanTWFSsE>
- Giulio Tononi, Christof Koch, (2105) “Consciousness: here, there and everywhere?” *Philosophical Transactions of the Royal Society B (Biological Sciences)* 370: 20140167.

### **Free Will and the Brain (3 class sessions-January 29, 31 & Feb 5)**

- Benjamin Libet, (1999) “Do we have free will?” *Journal of Consciousness Studies* 6, No. 8-9, pp. 47-57.
- Benjamin Libet (2006) “Reflections on the interaction of the mind and brain”, *Progress in Neurobiology* 78: 322-326.
- Adina Roskies (2006), “Neuroscientific Challenges to Free Will and Moral Responsibility.” *Trends in Cognitive Sciences* 10(9): 419-423.
- Jeffrey Burns, Russell Swerdlow (2003) “Right Orbitofrontal Tumor With Pedophilia Symptom and Constructional Apraxia Sign”, *Archive of Neurology* 60: 437-440.
- Friston, K. (2010). The free-energy principle: a unified brain theory? *Nat. Rev. Neurosci.* 11, 127–138.

Tentative Schedule of Classes  
(Reading assignments may be modified slightly on final syllabus)

**Neuroscience and the Law (3 class sessions—Feb 7, 12, 14)**

- J. Greene and J. Cohen, “For the Law, Neuroscience Changes Nothing and Everything,” in J. Illes et. al. (Eds.), *The Oxford Handbook of Neuroethics*, Oxford: Oxford University Press, 655-674. (to be added)
- Jones, OD, Wagner, AD, Faigman, DL, & Raichle, ME (2013). Neuroscientists in court. *Nature Reviews Neuroscience*, 14(10), 730–736.
- Adina Roskies (2008). “Neuroimaging and inferential distance: The Perils of Pictures” *Neuroethics* 1(1): 19-30.
- Baron, E, and Sullivan, J. (2018). “Judging Mechanistic Neuroscience: A Preliminary Conceptual-Analytic Framework for Evaluating Scientific Evidence in the Courtroom. *Psychology, Crime and Law*.

**February 19-21 READING WEEK**

February 26 – TBA

February 28 – TBA

**Representation, Intentionality and the Brain (2 Class Session- March 5, 7)**

- Franz Brentano “The Distinction between mental and physical phenomena”
- Kathleen Akins (1996), “Of Sensory Systems and the “Aboutness” of Mental States”, *Journal of Philosophy* 93(7): 337-372.

**Folk Psychology and the Cognitive Ontology (or What is the right taxonomy for neuroscience (2 class sessions – March 12, 14))**

- Paul Churchland (1981), “Eliminative Materialism and the Propositional Attitudes”, *Journal of Philosophy* 78(2): 67-90.
- Francken, J.C. and M. Slors (2014). From commonsense to science and back: The use of cognitive concepts in neuroscience. *Consciousness and Cognition* 29: 248-258.
- Anderson, M. (2015). “Mining the brain for a new taxonomy of the mind”, *Philosophy Compass* 10(1): 68-77.

Tentative Schedule of Classes  
(Reading assignments may be modified slightly on final syllabus)

**The Neuroscience of Ethics (2 class sessions (March 19&21))**

- Casebeer, WD (2003). Moral cognition and its neural constituents. *Nature Reviews Neuroscience*, 4(10), 840–846.
- J. Greene, (2003). “From neural ‘is’ to moral ‘ought’: What are the moral implications of neuroscientific moral psychology?,” *Nature Reviews Neuroscience*, 4:847-850.

**Neurosexism and Neurofeminism (1class session (March 26))**

- Robyn Bluhm and Ginger Hoffman (2016), “Neurosexism and Neurofeminism”, *Philosophy Compass* 11(11): 716-729.

**Neuroenhancement (2 class sessions (March 28, April 2))**

- Hamilton, R, Messing, S, & Chatterjee, A (2011). Rethinking the thinking cap: ethics of neural enhancement using noninvasive brain stimulation. *Neurology*, 76(2), 187–193.
- Cohen Kadosh, R, Levy, N, O’Shea, J, Shea, N, & Savulescu, J (2012). The neuroethics of non-invasive brain stimulation. *Current Biology*, 22(4), R108–11.
- Chatterjee, A (2007). Cosmetic Neurology and Cosmetic Surgery: Parallels, Predictions, and Challenges. *Cambridge Quarterly of Healthcare Ethics*, 16(02).
- Greely, HT, et al. (2008). Towards responsible use of cognitive-enhancing drugs by the healthy. *Nature*, 456(7223), 702–705.

**Self, Personal Identity and The Brain (1 class session (April 4))**

- Northoff, Georg. Am I My Brain? Personal Identity and Brain Identity - A Combined Philosophical and Psychological Investigation in Brain Implants  
Georg Northoff (2004) *Philosophia Naturalis*  
\*\*\*\*Term papers due

April 9 – TBA

April 11 – TBA

