

**THE UNIVERSITY OF WESTERN ONTARIO
DEPARTMENT OF PHILOSOPHY
Schedule of Classes**

Philosophy 3450F: Philosophy of Neuroscience



Spring 2017
Time: T 1:30-2:30 p.m.; Th 1:30-3:30 p.m.
Classroom: TBA

Instructor: Jackie Sullivan
Office: Stevenson Hall 4151
Office Hours: M 3-4 p.m.; T 11 am-12 p.m.
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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? 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? What kinds of claims about the mind-brain relationship are supported by neuroscientific data? What is the relationship between different areas of neuroscience?

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 philosophy of neuroscience. They will also have gained fundamental training in reading and interpreting seminal works in philosophy of neuroscience as well as the skills requisite to critically evaluate this work and formulate and defend their own arguments on topics that interest them.

REQUIREMENTS

1. Class participation (25%). Includes attendance and active participation in class discussions.
2. Three papers (75%).
 - Paper 1 (15%) (800-1000 words) – Due Jan 31
 - Paper 2 (25%) (800-1000 words) – Due March 9
 - Paper 3 (30%) (1000-1500 words) – Due April 6

Late papers are penalized at 5% per day, including weekends up to a maximum of 50% penalty. All papers are to be submitted via the “Turn It In” link on the OWL course website.

AUDIT

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

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

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.

Schedule of Classes

01/05 (Th) – Course Introduction

Setting the stage: The role of neuroscience from 1950-1980 in philosophy of mind and the kinds of problems that any science of the mind/brain was/is thought to be required to answer.

01/10 (T) – J.J.C. Smart (1959), “Sensations and Brain Processes”, *The Philosophical Review* 68(2): 141-156.

01/12 (Th) – Daniel Dennett (1971), “Intentional Systems”, *Journal of Philosophy* 68 (4): 87-106. Hilary Putnam (1973), “Psychological Predicates” or “The Nature of Mental States” in *Art, Mind, and Religion*, W.H. Capitan and D.D. Merrill, eds., pp. 37-48.

01/17 (T) – Thomas Nagel (1974), “What is it like to be a Bat”, *The Philosophical Review* 83 (4): 435-450.

01/19 (Th) - Patricia Churchland (1980), “A Perspective on Mind-Brain Research”, *Journal of Philosophy* 77(4): 185-207.

Early Neurophilosophy: Patricia and Paul Churchland’s early arguments about the relevance of neuroscience for answering traditional questions in philosophy of mind.

01/24 (T) - Patricia Churchland (1980), “A Perspective on Mind-Brain Research”, *Journal of Philosophy* 77(4): 185-207.

01/26 (Th) - Paul Churchland (1981), “Eliminative Materialism and the Propositional Attitudes”, *Journal of Philosophy* 78(2): 67-90.

01/31 (T) – Patricia Smith Churchland (1987), “Epistemology in the Age of Neuroscience”, *Journal of Philosophy* 84(10): 544-553. **Paper 1 Due**

02/02 (Th) – On-line reading

Sowing the seeds of Philosophy of Neuroscience: Early relevance of philosophy of science to neurophilosophy

02/07 (T) – Patricia Churchland & Terrance Sejnowski (1988), “Perspectives on Cognitive Neuroscience”, *Science* 242, 4879: 741-745.

02/09 (Th) – Patricia Churchland & Paul Churchland (1990), “Intertheoretic Reduction: A Neuroscientist’s Field Guide”, *Seminars in the Neurosciences*: 249-156. Reprinted in *On the Contrary, Critical Essays: 1987-1997*.

Schedule of Classes (cont'd)

Neurophilosophy/empirically informed philosophy of mind during and just after the Decade of the Brain: Challenges to functionalism in Philosophy of Mind and relevance of neuroscientific findings to traditional questions in philosophy of mind

02/14 (T) – Patricia Churchland, “Can Neurobiology teach us anything about consciousness?”
Proceedings and Addresses of the American Philosophical Association 67(4): 23-40.

02/16 (Th) – Kathleen Akins (1996), “Of Sensory Systems and the “Aboutness” of Mental States”, *Journal of Philosophy* 93(7): 337-372.

02/21-02/24 – Reading Week

02/28 (T) – Valerie Gray Hardcastle (1997), “When a Pain is Not”, *Journal of Philosophy* 94(8): 381-409.

03/02 (Th) – William Bechtel and Jennifer Mundale (1999), “Multiple Realizability Revisited: Linking Cognitive and Neural States”, *Philosophy of Science* 66(2): 175-207.

03/07 (T) – Lawrence Shapiro (2000), “Multiple Realizations”, *Journal of Philosophy* 97(12): 635-654.

03/09 (Th) – Patricia Churchland (2002), “Self-Representation in Nervous Systems”, *Science* 296: 308-310. **Paper 2 Due**

03/14 (T) – Adina Roskies (2006), “Neuroscientific Challenges to Free Will and Responsibility.”
Trends in Cognitive Sciences 10(9): 419-423.

03/16 (Th) – Jakob Hohwy and Tim Bayne (2015), “The Neural Correlates of Consciousness: Causes, confounds and constituents”

Recent topics in philosophy of neuroscience

Epistemological issues in Cognitive Neuroscience

03/21 (T) – Guy C. Van Orden & Kenneth R. Paap (1997) “Functional Neuroimages Fail to Discover Pieces of Mind in Parts of the Brain”, *Philosophy of Science* 64: S85-S94.

Adina Roskies (2010) “Saving Subtraction: A reply to Van Orden and Paap”, *British Journal of the Philosophy of Science* 61: 635-665.

03/23 (Th) – Adina Roskies (2010). “Neuroimaging and inferential distance: The Perils of Pictures” in *Foundational Issues in Human Brain Mapping*, Stephen Jose Hanson and Martin Bunzl, eds. Cambridge, MA: MIT Press, pp. 195-215.

Schedule of Classes (cont'd)

03/28 (T) – William Bechtel and Robert Richardson (2010). “Neuroimaging as a tool for functionally decomposing cognitive processes” in *Foundational Issues in Human Brain Mapping*, Stephen Jose Hanson and Martin Bunzl, eds. Cambridge, MA: MIT Press, pp. 241-261.

Nature of Explanation and Unity of Science

03/30 (Th) – Peter Machamer, Lindley Darden and Carl Craver (2000), “Thinking about Mechanisms”, *Philosophy of Science* 67(1): 1-25.

Carl Craver & Lindley Darden, “Discovering Mechanisms in Neurobiology: The case of Spatial Memory” in *Theory and Method in the Neurosciences*, Peter Machamer, Peter McLaughlin and Rick Grush, eds., 2001.

04/04 (T) - Piccinini, Gualtiero and Carl Craver. 2011. “Integrating Psychology and Neuroscience: Functional Analysis as Mechanism Sketches.” *Synthese*, 183(3): 283-311.

04/06 (Th) - Jacqueline Sullivan “Construct Stabilization and the (Dis)Unity of the Mind-Brain Sciences”; Catherine Stinson, “Mechanisms in Psychology: Ripping Nature at Its Seams” **Paper 3 due**