“Any minute then is anything if there is a human mind.” – Gertrude Stein, *Geographical History of America*

Mind and Brain

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Unified Class  
Trumbower 130  
TR, 9:30 – 10:45am

Laboratory  
New Science 124  
Section 01 :: W, 9:00 – 10:30am  
Section 02 :: W, 3:00 – 4:30pm  
Section 03 :: R, 3:00 – 4:30pm

Course Description

The major trajectory of this course is to evaluate the project of neuroscience, and in so doing, assess the possibility that the mind is manifested in and caused by the brain. We will consider neural arguments about various states of mind, including dreaming, language, selfhood, agency, attention, and intention from a variety of disciplinary and interdisciplinary perspectives. Class discussions will center on working definitions of consciousness, experimental approaches to consciousness and self-knowledge, and dysregulations of mind. A laboratory will explore systems of consciousness from a physiological and phenomenological perspective. Three class hours and one and a half laboratory hours per week.  
*Meets General Academic Requirement* 5

Major Course Trajectory

This course will introduce you to the fundamental theories, conversations, and ways of knowing within the (inter)discipline of neuroscience. Historically, studies of mind/brain occurred within the individual disciplines of biology, psychology, and philosophy of mind, with very little common language, method, or theory to draw these disciplines together. Increasingly, as the boundaries among these disciplines have become more permeable (or have collapsed altogether), a new, messy, multidisciplinary set of unified conversations have arisen out of the intersected space of the natural sciences and philosophy: the new discipline of neuroscience. In the last twenty years, conversations in neuroscience have radically transformed the way that a new generation of thinkers understand and study the mind/brain. Interestingly, as neuroscience has matured as a discipline in its own right, it has claimed and developed a perspective and a literature that is distinct from (and sometimes disagrees with) its ‘founding’ disciplines of biology, psychology, and philosophy. In this class, you will investigate the bourgeoning perspective of neuroscience, learn key methods and theories within neuroscience that drive our understanding of human consciousness, and begin the process of interrogating your own perspectives on the relationship between mind and brain.
Assignment Summary

Individual assignments (with more specific direction) will be handed out in advance of assignment deadlines. It is my hope that these assignments will mobilize you as a scholar of neuroscience while simultaneously improving your writing, speaking, and problem-solving skills.

Eight investigations 25 points each

The associated laboratories of this course will contain phenomenological writing exercises, problems for further consideration, formal experiments, and/or opportunities for your own theory-building. These “investigations” will be handed out in advance of a laboratory and are generally due the following week during the lab period. These assignments are an opportunity for you to assess your knowledge in neuroscience and move to the next level of complexity in your thinking. (See the Laboratory Schedule for exact dates.)

Tutorial 50 points

A major goal of neuroscience is to define the neural and phenomenological correlates of consciousness. You will be expected to independently research the underpinnings of a specific mind phenomenon with 2-3 other lab colleagues. The outcome of your review of the literature and your own interpretations of this knowledge will be presented to your lab section in a small, 30 minute tutorial. You will also co-author a short, critical analysis of your review – this is the 8th investigation (see above).

Three examinations 100 points each

Examinations will test basic assimilation of vocabulary, problem solving skills, effective writing, and critical analysis of data and argument. The first two exams will be taken outside of our formal class meeting time. The third exam will occur during Finals Week and will be cumulative.

Exam I Wednesday, October 6 Trumbower 130, 6:00 – 8:00pm
Exam II Wednesday, November 17 Trumbower 130, 6:00 – 8:00pm
Exam III TBA, Finals Week TBA, Finals Week

Class participation 50 points

This course depends on regular and engaged participation. Please come to class and laboratory ready to critically approach the work. Occasionally I may assign small writing exercises to help you condense and specify your thoughts on a reading; these writing exercises will not be traditionally graded but will be used to assign you a participation grade. Your facility in discussing assigned readings, your commitment to laboratory work, and your professionalism will also be used to assign participation grades; therefore, more than two missed classes can significantly affect your final grade. Should you miss class, you are responsible for obtaining any material you may have missed from your class colleagues.

TOTAL 600 points

Evaluation

Grades will be assigned based on the sum of the total points you obtain by the end of the semester. Your score will be divided by 600 points and will be translated into a letter grade as follows: A+ = 100-97%, A = 96-93%, A- = 92-90%, B+ = 89-87%, B = 86-83%, B- = 82-80%, C+ = 79-77%, C = 76-73%, C- = 72-70%, D = 69-60%, F = 59% and below.
Academic Behavior Code
All assignments are to be completed in line with the Academic Behavior Code of Muhlenberg College. I have zero tolerance for academic dishonesty. By submitting work in this class, you are pledging that your work is not plagiarized and is representative of only your ideas. Please be sure to read the Code carefully (the complete version is in your Student Handbook).

Course Texts
  ISBN # 0-300-10761-7
  ISBN # 0-674-02179-7
- Supplementary readings available on BlackBoard

These texts are on sale in the College Bookstore (look in the Neuroscience section) and are also readily available from online distributors (including Amazon, Powells, Alibris).

I will often supplement your reading with excerpted text or stand-alone essays. These readings are available in pdf format on BlackBoard. Please read them, print them out at your leisure, and bring them to class on the appropriate discussion day. Additionally, all assignments will be posted on Blackboard for your reference.

Miscellany
- All assignments are due on the date indicated. I do not grant extensions on assignments except in case of a medical emergency (documentation required). I will accept late assignments but please bear in mind that they will be penalized for each day that they are past due.
- Please turn in investigations with a single staple in the upper left hand corner. Make sure that your paper bears your name, the date, is paginated, uses 10, 11, or 12 point font, and has been proofread for grammar and spelling errors. You may submit your paper to me electronically if you wish, but please make sure that your formatting is standard.
- Please let me know if you have a documented learning disability that will require special accommodation. I will be glad to assist you.
- Please silence and stow all communication gadgetry prior to the beginning of class.
- We are lucky to have Alex Kossar ’11 as the learning assistant for Mind and Brain. Please take your meetings with Alex very seriously: he is here to help strengthen your writing and to get you to think more deeply the ideas and methods of neuroscience. He does, however, balance his commitment to being a learning assistant with his own studies and honors research. Therefore, please be respectful of his time and honor your appointments with him faithfully.

Laboratory Preparation
- The laboratory sequence is intended to more fully flesh out concepts we’ll encounter in class. However, there is not a neat 1:1 correspondence between class concepts and lab concepts. You may need to do some background reading on your own if you are having trouble following a laboratory exercise.
- I purposefully run the Mind and Brain laboratory in a friendly, un-canned manner.; for example, you need not maintain a laboratory notebook. However, please do not mistake this as “informality” or as a space without rules. Please enjoy the collegial atmosphere of the lab while remaining professional and dedicated to the research and conversation at hand.
- Laboratory exercises – like life – are an opportunity to minimize fear and maximize self-knowledge.
Course Calendar

Readings marked with a Δ are available in pdf format on BlackBoard.

A. The self and itself

Tuesday, August 31
   Introductions and pre-boarding announcements

Thursday, September 2
   States of consciousness: substantive and transitive consciousness I
   • Δ James, “The Stream of Consciousness”

Tuesday, September 7
   States of consciousness: substantive and transitive consciousness II
   • Δ James, “The Stream of Consciousness”

Thursday, September 9
   States of consciousness: Experiencing sensation
   • Humphrey, Seeing Red, Chapters 2 & 3

Tuesday, September 14
   States of consciousness: What is consciousness made of?
   • Humphrey, Seeing Red, Chapters 4 & 5

Thursday, September 16
   States of consciousness: So what?
   • Humphrey, Seeing Red, Chapter 6

Tuesday, September 21
   Jamesian selfhood: how the I appropriates the Me
   • Δ James, selected excerpts from “The Self”

Thursday, September 23
   Phenomenological selfhood I
   • Δ Gallagher and Zahavi, excerpt from “Consciousness and Self-Consciousness” (pp 49-55; 61-65)

Tuesday, September 28
   Phenomenological selfhood II
   • Δ Gallagher and Zahavi, excerpt from “Consciousness and Self-Consciousness” (pp 49-55; 61-65)

Thursday, September 30
   Neural correlates of selfhood
   • Δ Blanke and Metzinger (2009), “Full Body Illusions and Minimal Selfhood”

Tuesday, October 5
   Summative and comparative conversation

Wednesday, October 6, 6:00 – 8:00pm
   Exam One
B. Modeling and measuring consciousness

Thursday, October 7
Foundation of functionalism
• ∆ Turing, “Computing Machinery and Intelligence”

Tuesday, October 12
Critiques of functionalism: The Chinese Room Argument
• ∆ Searle, “Can Computers Think?”

Thursday, October 14
What about non-human animal consciousness?
• ∆ Edelman and Seth, “Animal consciousness: A synthetic approach”

Tuesday, October 19
No Class – Fall Recess

Thursday, October 21
Embodied functionalism I
• ∆ Clark, “The Active Body”

Tuesday, October 26
Embodied functionalism II
• ∆ Clark, “The Negotiable Body”

Thursday, October 28
Body image and body schema I
• ∆ Gallagher, “The Case of the Missing Schema”

Tuesday, November 2
Body image and body schema II
• ∆ Gallagher, “Pursuing a Phantom”

Thursday, November 4
A neural and evolutionary model of consciousness I
• Edelman, Wider than the Sky, Chapters 3 and 4

Tuesday, November 9
A neural and evolutionary model of consciousness II
• Edelman, Wider than the Sky, Chapters 5 and 6

Thursday, November 11
A neural and evolutionary model of consciousness III
• Edelman, Wider than the Sky, Chapter 10

Tuesday, November 16
No Class – Society for Neuroscience Annual Meeting

Wednesday, November 17, 6:00 – 8:00pm
Exam Two
C. Consciousness in the context of time

Thursday, November 18
Knowing me/ Knowing you
• Δ TBA

Tuesday, November 23
Knowing me/ Knowing you
• Δ TBA

Thursday, November 25
No Class – Thanksgiving Recess

Tuesday, November 30
A phenomenology of time and temporality
• Δ Gallagher and Zahavi, excerpt from “Time” (pp 69-80)

Thursday, December 2
A neuroscience of time and temporality I
• Δ Eagleman et al (2005), “Time and the Brain”

Tuesday, December 7
A neuroscience of time and temporality II
• Δ TBA

Thursday, December 9
Summative conversation

Finals week, TBA
Exam Three