Introduction to Experimental Psychology
PSYC-001-910
Summer Session I
M-W-F (5:00- 7:30 PM)
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Contacts and Availability:

I can be reached at the email address immediately above. Feel free to email me for any important questions or issues that you may have. I will be checking e-mail multiple times each day and I will make every effort to get back to you promptly, but generally within no more than 24 hours of your email. If I do not respond in that timeframe, please send a reminder e-mail and I will get back to you. My goal is to address all **significan**t issues, questions or concerns. In light of the high registration for the class, however, I expect you to focus your communications with me on matters that are relevant to your success in the course.

If we cannot address your issue or question satisfactorily by e-mail, I also will be available for office-hours by appointment via telephone or Zoom. Generally, I will limit office hours to Thursday but other times can be scheduled in the event of a pressing issue that requires immediate attention. **If you want to schedule a discussion with me about significant matters that concern your participation and learning in the course,** please send me an e-mail requesting a time to speak. For questions about course content, we will use the ***Discussion*** function on Canvas. Each class will have an associated Discussion topic. You can post questions about my lecture slides or assigned reading there. I will ***Reply*** to your questions in Discussions in Canvas.

For Technical Support for LPS Online Learning: Students should call for immediate tech support: 1-833-283-2987. For less urgent tech support issues, students can email: online-learning-help@sas.upenn.edu.

I also want to remind you to use the "Getting Started Module" in Canvas as a first line for support.

Welcome to PSYC-001-910 – Initial Considerations:

Welcome to *Introduction to Experimental Psychology*! By definition, *psychology* is the science that studies mind, but what is that? We each have a very subjective and personal experience of our own minds that is intimately connected to our point of view as we navigate through the world. Consider what you experience as you look at an apple, any other object, or large scene that you perceive *in toto*, that is your perceptual *Gestalt*. We may all agree that the apple is red, but how can we know that we each experience the *redness* of red in the same way. We call the quality of our perceptions of the world *qualia*, and we have no objective way of communicating to each other what our personal experience of the world is actually like. A writer of fiction certainly can *paint a picture* of a scene or human interaction with words, and we the readers can recreate a virtual image of the scene in our brains from the writer's words; but we cannot know that we experience the scene that was painted with the proverbial thousand words in the same way that everyone else experiences it. This problem lies at the heart of the early emergence of the school of *Behaviorism* in Psychology. The behaviorists postulated that it is impossible to study mind, *per se*, objectively if we base our study on what is inherently a private, subjective experience. The study of mind must be based on the study of the output of the mind, which is behavior. This issue lies at the core of what is known as *the hard problem of consciousness* because human consciousness, which we will understand to mean human self-awareness, is really *meta-awareness*. We modern humans, *Homo sapiens sapiens,* may be thought of as the *human who knows he knows*. This is to say that human self-awareness is the perception of the self; and more particularly the *qualia of the mind's perception of itself as knower of the world.* Stand in front

of a mirror to see the image of yourself. You know that the mind behind the face in that image is your *self*. You are seeing yourself see your *self, m*uch as one sees reverberating images in the opposing mirrors of a haircutting salon. Does the brain make the mind, or is the mind something that requires a metaphysical component or action? This is the mind-body problem. In psychology and cognitive neuroscience, we take a materialist perspective on this question. The brain makes the mind the same way that the liver makes metabolism or muscles make movement (behavior).

The human brain has between 80-100 billion neurons which make on the order of several hundred trillion synaptic contacts with each other. There are at least an equal number of glial cells in the brain in addition to a vast network of micro-vessels called capillaries. We don't know how this extremely complex bit of matter makes the mind, but we understand a great deal about the brain and are working diligently to understand how the brain is the organ of consciousness. By the way, what I am calling the hard problem of consciousness also applies to Artificial Intelligence. Will machines ever become self-aware? Will they ever know that they know, or will they forever be limited to making increasingly faster decimal floating-point computations per second without any sense of their own being?

These are truly daunting questions, and if we are to make progress in understanding the mind we must take an eclectic approach to studying it. It is for this reason that psychology is a science that encompasses many perspectives, sub-disciplines and methods of studying the brain and mind. We will touch upon many of these in this course. Whatever your expectation may be about what psychology *is,* you will probably be surprised by some of the things that you will find in our course of study. For example, we will begin with the understanding that the emergence of life and mind in the universe has its origin in the laws of physics which were established at the Big Bang and supervene everywhere for all time to govern everything that happens. So, this course is not only about the study of mind, but also touches on some of the *big questions* that confront *sapient* beings in the universe.

This is *your course*! You will get the most out of it by keeping up with the readings, viewing all the lectures and participating in discussions in the *Discussion* function of Canvas. My first and foremost expectation of you is that you will have a sense of awe and wonder as we begin to study the emergence and nature of mind in the universe.

Course Site
I will be making ***Announcements*** in Canvas, as well as setting up, and participating in ***Discussions***. **You should therefore check your announcements and set your notification preferences in Canvas for immediate announcement forwarding.** I will upload each set of PowerPoint lecture slides before the scheduled time for the lecture. I also will provide you with a link to my recorded lectures on Zoom. You will be able to view the lectures on-demand, but **you are advised to keep up with lectures as they become available.** The course moves quickly and if you don't keep up with the reading, lectures, and Discussions it will be difficult to prepare for the Mid-Term Exam (see below) which will occur approximately three weeks into the course. I prefer that you use my e-mail address as discussed above to communicate with me instead of messaging me on Canvas, but feel free to message each other on Canvas. I encourage communication among students, especially during these times when it is easy to feel separated from your university experience owing to the global pandemic.

My Biographical Summary

I have a Ph.D. in Experimental Psychology and have worked in the area of behavioral and biomedical neuroscience in academia and the pharmaceutical industry. I have published original research and review papers in peer-reviewed scientific journals of record including *Science, The Journal of Neuroscience, Brain Research, The Journal of Neurochemistry, Brain Research Bulletin, The Journal of Nuclear Medicine, Neuroscience Letters, Experimental Biology and Medicine* and others. I have maintained a life-long interest in, and commitment to, teaching at the university level and have pursued this interest as an Adjunct Lecturer at The University of Pennsylvania, but occasionally at other schools as well. I teach courses in *Cognitive*

Neuroscience, Behavioral Neuroscience, Developmental Neurobiology, Evolutionary Psychology, *Abnormal Psychology*, and **a graduate level C*ognitive Neuroscience Seminar titled "A Neuroscience Perspective of Artificial Intelligence".*** My interests and scholarship extend beyond the disciplines of Psychology and Neuroscience and include life-long reading and study in the areas of mathematics, physics, anthropology, philosophy and theology. I also have published a recent book titled: "Consilience, Truth and the Mind of God: Science, Philosophy and Theology in the Search for Ultimate Meaning", which is available at Springer: http://www.springer.com/9783030018696

First Assignment

Read the welcome message to this course again, and think about these questions:

- Do you think that the mind is an emergent property of the brain, or do you think there are extra-corporeal, or metaphysical factors, that are responsible for mental phenomena?
- Do you agree that our experience of the world is based on a virtual reality created by networks of neurons in the brain that represent the world and the body in world? In other words, do you agree that we do not experience the world directly but rather that we only experience it as it is represented in the brain?
- Why do you think we experience our sense of self as localized behind our eyes and between our ears?
- Do you think other animals experience something like human self-awareness, or is human consciousness (self-awareness) something that is qualitatively distinct from what animals experience?
- Could you accept the notion that there is an evolutionary continuity of consciousness that ranges from the simplest form in the most primitive organisms with nervous systems to the highest form that we experience as humans?
- Do you think that machines could ever become self-aware in the same sense that humans are, that is in the sense of having meta-awareness? In other words, is it possible that machines will ever experience themselves as *knowers of the world*?
- Do you think that we can learn about the normal mind and brain by studying psychopathology and neuropathology?
- Is human nature essentially good or evil?
- Can anthropology inform psychology about the nature of the human mind?
- Do you agree with the behaviorist point of view outlined in the welcome message?

Course Objectives

The course of study itemized in the Course Outline below will answer these questions, and many others that you will raise as well.

Virtual Classes

Owing to the high registration for the course, I do not anticipate using synchronous classes in which everyone will be connected to the lecture in real-time via Zoom. As explained above, I will be using an asynchronous approach to the lectures in which each of you can view the recorded lectures on demand as explained above. Q&A for lectures will be handled in Discussions on Canvas as explained above. Be prepared for viewing the lectures by having done the assigned readings in advance. Generally, my lectures will be complementary to the textbook readings, but there will be times when there is some significant overlap.

REQUIRED TEXTBOOK (Newer editions are available but the 13th edition corresponds to the reading assignments and is more economically priced in most formats. The eBook is around $65 on Amazon :

1. *Introduction to Psychology* – Coon and Mitterer, 13th edition. Available on Amazon: *https://www.amazon.com/Introduction-Psychology-Gateways-Mind-Behavior/dp/111183363X/ref=sr_1_11?dchild=1&keywords=Coon+and+mitterer&qid=1590349026&sr=8-11*

SUGGESTED READING (not required) for Anyone Who Is Curious about the "Big Questions"
2. *Consilience, Truth and the Mind of God: Science, Philosophy and Theology in the Search for Ultimate Meaning* – Di Rocco, 1st edition. eBook Available on Springer:
https://www.springer.com/us/book/9783030018689

Class Participation (in an Online, Asynchronous Class)
Participation in a traditional class means that students raise their hand, contribute input to a discussion, etc. In this course, participation will be evident in the Discussion function on Canvas where we all will respond to each other's questions and comments. In a short course like this, participation requires that you interact with course material such as recorded lectures and the questions and video documentary links that I will upload to Canvas. These links also will appear in the lecture slides for the relevant class, but also occasionally in *Discussions*. Please remember that you also can interact with each other through the Discussions on Canvas.

Course Grades
Grades will be determined on the basis of Mid-term and Final short answer exams. These will include multiple choice, true-false, matching, fill-in, diagram labeling and some definitions. Class participation, as described above, and a final written statement that you compose in response to a prompt from me will also be significant components of your grade calculation as described below.

Calculation of Final Grade

Online Class Participation (described above)	**10%**
Mid-Term Short-Answer Exam	**40%**
Final Short-Answer Exam Category	**40%**
Final Statement	**10%**
	100%

Academic Integrity
Since the University is an academic community, its fundamental purpose is the pursuit of knowledge. Essential to the success of this educational mission is a commitment to the principles of academic integrity. Every member of the University community is responsible for upholding the highest standards of honesty at all times. Students, as members of the community, are also responsible for adhering to the principles and spirit of the Penn Code of Academic Integrity. **Breeches of the code will be reported to the appropriate Dean of your college or school.** More details about this policy can be found online at
https://catalog.upenn.edu/pennbook/code-of-academic-integrity/.

University Services
Penn Libraries: Students can access all online resources available at the University of Pennsylvania by using the website *www.library.upenn.edu/ and logging in with their PennKey and password. Students wishing to visit the Library in person and borrow books will need to get a PennID card first.*

Student Disability Services (SDS): Although the self-identification process is confidential and completely voluntary, it is required for those requesting accommodation. Student Disability Services (SDS) can be reached by phone at 215.573.9235, by TDD at 215.746.6320 or online at https://wlrc.vpul.upenn.edu

Add/Drop Period: Students may drop a class before the end of the first two weeks of an accelerated, eight-week session by using Penn InTouch. Please see the LPS Academic Calendar for relevant dates and links (https://lpsonline.sas.upenn.edu/student-resources/academic-calendar). **Failure to attend/participate in a course does not automatically result in being dropped from the course. Courses that are dropped will no longer appear on a student's transcript.** https://www.sas.upenn.edu/lps/lps-online/form/course-withdrawal

Withdrawing from a course: Students may withdraw from a course through the fourth week of the accelerated, eight-week session by meeting with an advisor and completing a form with the permission of the instructor.

Online Learning Team: There is 24/7 technical support available for your course. If you encounter technical difficulties and need immediate assistance, please call1-833-283-2987. You can access our Knowledge Base-Penn LPS Online Helpdesk (https://sas-lps.freshdesk.com/support/home) - to try troubleshooting on your own or live chat with a technical support staff member. In addition, you can reach out to us via email at online-learning-help@sas.upenn.edu and we will respond to you within 24 hours.

SCHEDULE OF TOPICS & ASSIGNMENTS

This course outline may be modified to provide flexibility needed in a fast-moving schedule.

1. **MAY 24 - Introduction to Experimental Psychology**
ASSIGNMENT: LECTURE SLIDES

2. **MAY 26 - Personality Development**
   o **Psychoanalytic Theory of Sigmund Freud**
   o **Psychosocial Theory of Erik. Erikson**
   o **Other Personality Theorists**
ASSIGNMENT: Ch. 12 (pp. 411-414) Ch. 3

3. **MAY 28 - Attachment Theory, Sex, Romantic Love**
   o **The Psychological Birth of the Human Infant by M. Mahler**
   o **Development of the Ego and Dissociative Identity Disorder (DID)**
ASSINGMENT: Ch. 11; View Documentary on DID: **https://www.youtube.com/watch?v=B0LNyXsErb8**

4. **MAY 31 – MEMORIAL DAY**

5. **JUNE 2- Human Evolution and Personality Theory**
   o **Brain Evolution and Cognitive Fluidity of Homo sapiens**
   o **Archetypes in Thinking Style and Personality Traits**
ASSIGNMENT: Ch. 12

6. **JUNE 4 - Neuroscience Foundations I: Neuroanatomy**
   o **Development of the Central Nervous System: Key to Understanding Brain Anatomy**
ASSIGNMENT: Ch. 2

7. **JUNE 7 - Neuroscience Foundations II: Neurophysiology: Resting Membrane Potential, Action and Synaptic Potentials; Brain Neurochemistry; Brain Imaging**
ASSIGNMENT: Ch. 2

8. **JUNE 9 - Synaptic Plasticity, Learning and Memory**
ASSIGNMENT: Chs. 6 & 7

9. **JUNE 11 – Hemispheric Specialization and Language**
ASSIGNMENT: Lecture Slides

10. **JUNE 14 - MID-TERM EXAM (Short Answer)**

11. **JUNE 16 - Sensation and Perception: Focus on Vision and Audition**
ASSIGNMENT: Ch. 4

12. **JUNE 18 - Emotion and Motivation, States of Consciousness and Artificial Intelligence**
ASSIGNMENT: Chs. 10 &5

13. **JUNE 21- Psychological Disorders I: Anxiety and Mood Disorders**
ASSIGNMENT: Ch. 14

14. **JUNE 23 - Psychological Disorders II: Schizophrenia and Personality Disorders**
ASSIGNMENT: Ch. 14

15. **JUNE 25- Social & Evolutionary Psychology: The Problem of Good and Evil**
ASSIGNMENT: Ch. 16

16. **JUNE 28 – OPEN**

ASSIGNMENT: Prepare for Final Exam and submit Final Statement

17. **JUNE 30 – FINAL EXAM (Short-Answer)**