

Algorithms, Brains, & Psychedelics



Instructor	: Edvard Avilés-Meza
Course Code	: PHIL1112 (SEM 102)
Time	: MW 11:40am - 12:55pm
Place	: Uris Hall 498
Office Hours	: W: 1pm
Contact	: eda39@cornell.edu

Course description:

In a lifetime of 80 years, we spend at least 6 years dreaming —let alone daydreaming. What's the philosophical significance of that psychological fact? What can we learn from the spontaneous conscious episodes that arise during distraction and meditation? Our conscious experience is filled with noisy mental states called 'altered states of consciousness': dreaming, wandering, meditating, and sometimes even hallucinating. This is an interdisciplinary and introductory course in the philosophy of mind that discusses altered states through the lens of neural algorithms (e.g., predictive coding) to reflect on what they teach us about ourselves, and the artificial cognitive technologies our societies are currently developing, like AI systems and virtual reality engines. Just as paradoxes reveal the hidden structure of logical systems, altered states of consciousness reveal the hidden structure of the mind. The course draws on perspectives from AI research, Indian Philosophy (especially Buddhism), and neurobiology.

Sample questions:

- Does dreaming serve any cognitive function or epistemic role?
- Is the brain a prediction machine? does that support the view that perception is a controlled hallucination?
- Is aphantasia unconscious imagery? Is absent-mindedness during distraction truly absent?
- Can mind-wandering be maladaptive in the age of the attention economy?
- Do altered spontaneous conscious states that arise during dreaming, psychotic hallucination, psychedelic hallucination, and meditation share something in common?
- What do dreams and deep learning algorithms have in common?
- What do psychedelics teach us about our sense of reality and how can it inform the development of virtual reality engines?
- Is Buddhist meditation a cognitive technology? How can it help us in our attention economy?
- Can there be an objective science of dreams and altered states free of subjective methods?
- What can dreams and altered states teach us about consciousness?

Course Learning Goals:

- Develop the ability to think critically about *altered states of the mind*.
- Craft clear, coherent, and well-organized essays.
- Analyze and interpret philosophical texts effectively.
- Construct and support arguments with logic & evidence.

Guidelines for Canvas Submission of Written Work:

- Submit your work on Canvas in pdf.
- Use a standard font (e.g., Times New Roman, Garamond) in 12-point size.
- Number all pages.
- Include your name, the date, and the essay number/title at the top of the first page.
- Proofread and spell check your work before bringing any drafts to class.
- Cite sources clearly where appropriate.

Grading Breakdown

- Participation: 10%
- Essay 1: Not graded
- Essay 2 (final draft): 20%
- Essay 3 (final draft): 30%
- Essay 4 (final draft): 40%

Participation

Participation includes attendance, assignments, in-class participation, and engagement with course materials. Credit can be earned as follows:

- Attendance: Regular attendance is mandatory, and students must arrive on time. Late arrivals will result in a loss of participation points.
- In-Class Participation:
 - Verbal Contributions: Share thoughts during class discussions.
 - Small Group Discussions: Engage in smaller breakout groups.
 - Written Contributions: Participate by writing down your thoughts on shared Google Doc.
 - Note-taker

Rewrite Policy:

The grade you receive on your initial paper draft does not count toward your final grade for the course. Instead, it establishes the minimum grade for your paper rewrite. This policy emphasizes the importance of substantial revision. *Presenting an initial first draft is a necessary condition to submit the final draft.*

AI Use:

Using AI to **create** your assignments is considered plagiarism and is not permitted in this class.

Extension Policy:

If you would like an extension, you must ask for it at least 24 hours before the due date. Late extension requests will not be accepted.

Late Submission Penalties:

- Late papers will be penalized.
- For each day a draft is late, the minimum grade you get on the draft will drop by $\frac{1}{3}$ of a letter grade.
- Rewritten late papers will also be penalized in the same way as the first draft, affecting your final grade.

Absence Policy:

- You can have up to two unexcused absences during the semester.

University Policies and Regulations:

This instructor respects and upholds University policies and regulations pertaining to matters such as: the observation of religious holidays; accommodations available to remedy inequities both visible and invisible; sexual harassment; racial or ethnic discrimination; plagiarism and other violations of community values regarding academic conduct. All students are advised to become familiar with the respective University regulations and are encouraged to bring any questions or concerns to the attention of the instructor.

Academic Integrity:

All work you submit in this course must be written specifically for this course and must be your original work. You must fully and specifically acknowledge all sources you use. Carefully read Cornell's Code of Academic Integrity, which is included in The Essential Guide to Academic Integrity at Cornell. This guide is distributed to all new students during orientation and covers how to acknowledge others' work, use online sources, work collaboratively, and avoid cheating. You can view it online at Cornell's Academic Integrity Page. In this course, any violation of the code will result in an 'F' for the term.

Additional Course Policies:

If you are dealing with medical or personal issues that are affecting or may affect your attendance or performance in class, please inform me as soon as possible. I will do my best to accommodate your needs, including those of students with documented disabilities. To learn more about Cornell Student Disability Services, visit the website <https://sds.cornell.edu/>

Cornell Writing Centers

The Cornell Writing Centers (CWC) provide support for individuals at any stage of the writing process. It is a free resource available to everyone on campus—faculty, staff, graduate and undergraduate students—for nearly any kind of writing project: applications, presentations, lab reports, essays, papers, and more. Tutors (trained peers) serve as responsive listeners and readers who can address questions about the writing process or about particular pieces of writing. They can also consider questions of confidence, assignment expectations, critical reading, analytic thought, and imagination. All tutors have training in supporting multilingual writers, working with writers remotely online, and in supporting writers working on application materials. The CWC welcomes walk-ins, but we also encourage writers to make appointments through our scheduling platform: <https://cornell.mywconline.net/>

Week	Date	Topic	Readings
1	Wed Jan 21	Introduction	-
2	Mon Jan 26	Images	McGinn / Sosa / Ichikawa
	Wed Jan 28		
3	Mon Feb 02	Dreaming I: Philosophy	Dennett / Schwitzgebel
	Wed Feb 04		
4	Mon Feb 09	Dreaming II: Neuroscience	Nir & Tononi / Revonsuo / Hobson
	Wed Feb 11		
5	Mon Feb 16	Hallucinating I: Psychosis	Bentall / Allen / Bortolotti / Frith
	Wed Feb 18		
6	Mon Feb 23	Hallucinating II: Psychedelics	Fortier / Carhart-Harris / Letheby
	Wed Feb 25	The Imagery Spectrum: Aphantasia & Hyperphantasia	Zeman / Whiteley / Nanay
7	Mon Mar 02	Wandering I: Spontaneous Thought	Irving / Smallwood & Schooler / Andriillon / Fox
	Wed Mar 04		
8	Mon Mar 09	Wandering II: The Attention Economy	Wu / Browne & Watzl / Castro & Pham
	Wed Mar 11		
9	Mon Mar 16	Meditating I: Buddhism	Lutz, Dunne, & Davidson / Goleman & Davidson / Thompson
	Wed Mar 18		
10	Mon Mar 23	Meditating II: Large Scale Networks	Andrews-Hanna / Mason / Seeley
	Wed Mar 25		
11	Mon Mar 31	Spring Break	
	Wed Apr 01	Spring Break	
12	Mon Apr 06	Artificial Intelligence	Ananthaswamy / Hoel / Gershman
	Wed Apr 08		
13	Mon Apr 13	Virtual Reality	Metzinger / Farkas / Seth
	Wed Apr 15		
14	Mon Apr 20	The Self	Dennett / Thompson / Milliere / Blanke & Metzinger
	Wed Apr 22		
15	Mon Apr 27	Consciousness I: The Hard Problem	Chalmers / Block / Cohen & Dennett
	Wed Apr 29	Consciousness II: Lucidity	Windt / Sebastian
16	Mon May 04	Wrap up	

Curated Bibliography

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