

# PSYCH 207-002 Contemporary topics in biological and cognitive psychology

Tues, Thurs 2:00-3:30 pm; room: Buchanan A103

## INSTRUCTOR



### Dr. Mariya V. Cherkasova

**Office location:** Kenny, 3503

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Mariya is a research associate in Psychology. She studies psychological and neural mechanisms of motivated behaviour in neurotypical people and clinical groups (e.g. addictions, Parkinson's disease).

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## TEACHING ASSISTANT (TA)



### Tristan Hynes

**Office location:** Djavad Mowafaghian Centre for Brian Health (2215 Wesbrook Mall)

**Office hours:** by appointment

**Email:** [thynes@psych.ubc.ca](mailto:thynes@psych.ubc.ca)

Tristan using DREADDs to interrogate the role of dopamine at the intersection of cocaine addiction, decision making, and biological sex.

## COURSE DESCRIPTION:

The purpose of this course is to explore what neuroscience can teach about our capacity to act as free and independent agents. We will examine neuroscience research pertaining to such subjects as free will, impulse control and decision making. We will also consider the implications of this research for broader clinical and social issues such as mental health, addiction and legal accountability.

**WITHDRAWALS:** Withdrawal from this course without record on your transcript must occur before September 17, 2019. Withdrawal before October 11, 2019 will result in a 'W' standing on your transcript.

## LEARNING OBJECTIVES

By the end of the course you will be able to:

- Identify major structures in the brain and describe their functions
- Identify neural circuitries underlying i) voluntary movement, ii) decision making, iii) reward
- Describe several research methods that can be used to study agency and its neural substrates
- Demonstrate knowledge of neuroscience evidence pertaining to the role of consciousness in causing action
- Differentiate between agency and sense of agency
- Provide examples of how agency and sense of agency can be disrupted
- Demonstrate knowledge of the brain disease model of addiction and its criticisms
- Identify implications of our views of agency for legal and moral responsibility
- Communicate scientific ideas related to the subject matter of the course to your peers
- Perform peer evaluations

## COURSE MATERIALS

### Readings:

- There is no textbook for the course
- The assigned readings are book chapters and articles
- All readings are available on Library Online Course Reserves (LOCR) accessible via Canvas
- There will be some optional readings on reserve for those interested
- Instructors will post copies of the original articles covered in lecture for – also optional

### Course Website: [www.canvas.ubc.ca](http://www.canvas.ubc.ca)

Lecture slides, assignments and grades will be available via **Canvas**. Lecture slides will be posted after class. You are also encouraged to use the Canvas course page to contact other students (e.g., arrange to share notes for missed classes, clarify a difficult topic, etc.) via the discussion board. In addition, we will encourage you to submit questions 48-24 hours prior to the midterm and final regarding the material in the readings and lectures you find difficult to understand. Please make sure that your notifications settings permit you to receive messages from the course instructors (that is the default setting).

**TopHat:** TopHat is an app that will occasionally be used for polling exercises in class. You can download it on your phone and/ or on your laptop. Because of a UBC agreement with TopHat the app will be available at no cost to you.

## COURSE SCHEDULE

Week	Date	In-Class Topic	Reading & Assignments
1	Tues Sept 3	No Class – Imagine Day	
	Thurs Sept 5	Introduction, Welcome, Syllabus Review	Syllabus
2	Tues Sept 10	Intro to Neuroscience	Lilienfeld, Ch 3: pp.80-103; pp.106-113
	Turs Sept 12	Intro to Research Methods in Psychology & Neuroscience	Lilienfeld, Ch 3: pp.80-103; pp.106-113
3	Tues Sept 17	Does Consciousness Cause Behaviour?	Wegner, The Illusion of Conscious Will, Ch 1: pp 1-28
	Thurs Sept 19	Does Consciousness Cause Behaviour?	Wegner, The Illusion of Conscious Will, Ch 1: pp 1-28
4	Tues Sept 24	Does Consciousness Cause Behaviour?	Libet, Mind Time, Ch 4: pp 123-156
	Thurs Sept 26	Does Consciousness Cause Behaviour?	Libet, Mind Time, Ch 4: pp 123-156
5	Tues Oct 1	Sense of Agency	Gazzaniga, Who is in Charge? Free Will and the Science of the Brian, Ch 3: pp75-105
	Thurs Oct 3	Illusions and Disruptions of Agency	Gazzaniga, Who is in Charge? Free Will and the Science of the Brian, Ch 3: pp75-105
6	Tues Oct 8	Neural Substrates of Free Choice	Damasio, Descartes' Error, Ch 3, pp. 35-51
	Thurs Oct 10	Neural Substrates of Free Choice	Damasio, Descartes' Error, Ch 3, pp. 35-51
7	Tues Oct 15	Guest Lecture: Tristan Hynes	Damasio, Descartes' Error, Ch 9: pp. 206-222
	Thurs Oct 17	Neural Substrates of Free Choice	Damasio, Descartes' Error, Ch 9: pp. 206-222
8	Tues Oct 22	Review; Final Project Instructions	
	Thurs Oct 24	<b>Midterm Exam</b>	
9	Tues Oct 29	Agency in Models of Addictions	Volkow et al (2016) Neurobiologic Advances from the Brain Disease Model of Addiction, NEJM
	Thurs Oct 31	Agency in Models of Addictions	<b>*Submit your project topic for approval</b>
10	Tues Nov 5	Agency in Models of Addictions	Satel & Lilienfeld (2014) Addiction and the brain-
	Thurs Nov 7	Agency in Models of Addictions	

			disease fallacy. <i>Frontiers in Psychiatry</i> , 4, 141.
<b>11</b>	Tues Nov 12	Placebo effects: Implications for Agency	Niemi, <i>Cure in the Mind</i> , <i>Scientific American</i> , 2009
	Thurs Nov 14	Guest Lecture: Dr. Azim Shariff	Gazzaniga, <i>Who is in Charge? Free Will and the Science of the Brain</i> , Ch 6: 179-217
<b>12</b>	Tues Nov 19	Final Project Poster Presentations	Poster Projects Due
	Thurs Nov 21	Final Project Poster Presentations	Poster Projects Due
<b>13</b>	Tues Nov 26	Final Project Poster Presentations	Poster Projects Due
	Thurs Nov 28	Final Project Poster Presentations	Poster Projects Due
<b>Final Project Presentation Peer Evaluation</b> due Dec 5 via Canvas			
<b>Final Exam</b> (during final exam period)			

## LEARNING APPRAISALS

Activity	Date	% Total grade
Midterm exam	Oct 24	25%
Final exam	TBD	30%
Final poster project	Nov 19 – Nov 28	25%
Peer evaluations of final project	Dec 5	10%
Homework assignments	Weekly	10%
<b>Total</b>		<b>100%</b>
Extra credit (HSP)		3%

## LEARNING APPRAISAL DESCRIPTIONS

### Examinations:

The objective is to demonstrate mastery of course material as measured by recall and comprehension of the material in the lectures and the readings. The midterm and final exams will consist of multiple-choice questions.

### Final poster projects:

The objectives for this activity are twofold: 1) to think critically and creatively about the subject matter of the course, to expand your knowledge of the subject matter and to apply the knowledge you've gained in the course more broadly; 2) to practice communicating scientific ideas to an audience of peers. In pairs, you will prepare a poster presentation on a topic

pertaining to agency that was not covered (or was not covered in depth) in the lectures or the readings. A list of possible topics will be provided on Canvas. Examples could be: *Do animals have agency?*; *Can artificial intelligence have agency?*. Your group can either choose one of the topics provided or pick your own. The topics will need to be approved by either the course instructor or the TA by October 31st. Multiple presentations can be on the same topic, but if a certain topic predominates, the instructor and TA may stop granting approval for that topic and encourage you to pick a different one. For your presentation, you have two options. 1) You will formulate a question related to the topic of your choice and address the question by providing evidence from the available literature. You do not need to provide a definitive yes or no answer to the questions – there likely won't be one. Rather, you need to present evidence in support of different possible conclusions. 2) You can identify a gap in knowledge related to the topic of your choice and propose a research study that would address it. Specific guidelines on preparing both types of presentations will be posted on Canvas and reviewed in class on October 22.

There will be four class days devoted to these conference-style poster presentations (see detailed final project instructions on Canvas). Presentation dates will be determined by the instructor, though you may indicate your preference for a given day. These dates cannot be changed without a verifiable reason (e.g. a doctor's note). If you miss your presentation without a verifiable reason, and your partner presents alone, you will receive 50% of the credit, while your partner will receive full credit. If both of you miss the presentation without a verifiable reason, it may be submitted as a video to the instructor or TA before your scheduled presentation for 50% of the credit to each of you.

Your grade for the poster presentation project will consist of:

- 1) The instructor's or TA's evaluation of your poster (25%)
- 2) You peers' evaluation of your poster (5%)
- 3) You two peer evaluations of your classmates' posters (5%)

### **Peer evaluations of the final poster projects:**

The purpose is to learn about other students' projects, evaluate them and have your own evaluated. You will each evaluate two posters on separate days (not the day you are presenting) using a rubric provided by the instructor on Canvas. These are due December 5. Each poster will receive 4 peer evaluations in addition to the evaluation by the instructor or TA.

### **Homework assignments:**

The purpose of these assignments is to provide learning objectives for the readings. Because there is no textbook, all the readings will vary in length, style, and the density and in the familiarity of the material. Some of them may be quite straightforward to understand, others more difficult. It may, therefore, be challenging to determine on your own what you should be getting out of them. The instructor will provide (via Canvas) ten (10) questions to guide you

through each required reading in the course. You will be asked to provide short answers to these questions in written form: your answers should be under one (1) page in length for all 10 questions. Each assignment is due the last day the corresponding reading appears on the course schedule and needs to be submitted via Canvas. These assignments will be graded pass/fail, and each assignment is worth 1% of your final grade.

### **Extra credit:**

You can earn up to three (3) extra percentage points on your overall final grade by participating in research studies conducted in the Psychology Department and coordinated via the human subject pool (HSP). This is a great opportunity to learn about and experience firsthand the ongoing research at UBC. You can register to participate in these studies via the HSP website (<https://ubc-psych.sona-systems.com/>). **Please register in this online system by end of the first month of class.** For each hour of study participation, 1 percentage point is assigned to your final grade, with partial credits rounded down (i.e. 1.5 hours = 1% added to your grade). You can also earn your first half hour of credit by completing the pretesting survey, which will make you eligible for a wider variety of studies. Please note that in a given term, you can earn no more than one hour of credit for online studies (not including the pretesting). Any questions about the credits should be directed to HSP or the experimenters and **not** to the instructor or the TA. Credits can be recorded and tracked via the subject credit website; if you do not correctly assign your credits to this course, you will **not** receive credit.

As an alternative to participating in studies, you may choose to complete library writing projects. These involve summarizing and reading a research article, with each article summary counting for 1 hour of research participation. Each summary should be ~ 500 words. Complete instructions are provided on p.4 ("The Library Option") HSP guide entitled "HSP Participant Information" available via (<https://psych.ubc.ca/undergraduate/opportunities/human-subject-pool/>).

**The HSP system closes on the last day of classes. This will be the final day you can earn research participation credits and the final day you can assign credits to this course.**

## **COURSE POLICIES**

### **Attendance:**

You are expected to attend every lecture. The lectures will complement (not duplicate) the material in the readings, expanding on it and providing context and alternative perspectives. For this reason, the lectures will cover a substantial amount of material that will not be in the readings. Lecture slides will be posted on Canvas **after** class, but these are **not** a substitute for attending the lecture. The exams will contain a significant amount of content provided only in the lectures. If you must miss a class, it's a good idea to get notes from a fellow student.

**Classroom conduct:**

Please be respectful of your fellow classmates and instructors. This means being courteous and respectful when asking questions and making comments during class, not monopolizing class discussion and not disrupting the class.

**Laptop use:**

You can use laptops and other electronic devices for learning purposes. However, please refrain from using them for other activities unrelated to the course that could be distracting to other students (or sit in the back of the class if you do).

**Exams:**

You will be required to answer multiple choice questions using a scantron sheet, so you will need to bring a **pencil** and an **eraser** to the exams. You will also need to bring your **UBC ID**. You will not be allowed to write the exam if you are more than 30 minutes late or if another student has already submitted their exam, if that occurs first. You will have 80 minutes to write the midterm and 2.5 hours to write the final. During the midterm, you may not leave the room (e.g. to use the washroom) unless you have provided us with a note 24 hours prior to the exam attesting to a medical condition that may require you to leave the room; during the final, only one student may leave the room at a time and only after the first 30 minutes. You can keep your valuables on you, but you must power off all electronic devices. When the time is called, you must immediately stop writing, remain quiet and follow the instructions for submitting the exam. You will not be given extra time to put your name or student ID on the scantron or to change your answers. Failure to comply with these instructions will result in a '0' on the exam.

***Important: The final exam will take place during the final exam period, which runs from December 3 to December 18. Saturdays are included in the final exam period. Your attendance at the final exam is mandatory. You should not make travel plans until you learn the date of your final exam.***

**Missing exams:**

If you are aware of a scheduled UBC-sanctioned or a religious obligation that conflicts with the date of an exam, you need to notify the instructor within the first two weeks of classes so that alternate arrangements can be made. Other grounds for academic concession may be unforeseen circumstances and medical or compassionate reasons. Whether such a concession is to be granted will be determined based on your individual circumstances. If you miss the midterm and are granted a concession by the instructor (e.g. you have provided medical documentation of an illness), it is your responsibility to schedule a makeup exam within two (2) weeks of the original date. For the final, you may be granted a deferred exam. Deferred standing is granted by the faculty in which you are enrolled. Deferred exams are written in July or August or another date determined by the faculty/department. If you miss an exam for any

reason not warranting concession (e.g. sleeping in, travel, social plans, forgetting there is an exam), you will receive a '0' on the exam.

**For more specific information on course policies regarding in-term academic concessions, please refer to the relevant UBC calendar entry:**

<http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,329,0,0>

### Reviewing exams:

There will be a 2-hour exam review period scheduled for the midterm after the grades are posted. The TA will run this session and will address questions or concerns regarding your exams. If you are unable to attend the exam review session, please contact the TA to make alternative arrangements. You must arrange to see your exam within **two (2) weeks** after your grades are released. After that, the exams will be unavailable. If you wish to review your final, you may make a written request to the instructor before January 31; she will make every reasonable effort to arrange for you to view the marked final within 30 days of the request.

### Grades:

In order to reduce grade inflation and standardize grading across all sections and courses all psychology courses must adhere to departmental grade standards regarding grade distributions. According to these standards for 100 and 200 level Psychology courses, the average grade is 67 for a strong class, 65 for an average class and 63 for a weak class. Grades may be scaled up or down to comply with the departmental standards.

Percentage (%)	Letter grade
90-100	A+
85-89	A
80-84	A-
76-79	B+
72-75	B
68-71	B-
64-67	C+
60-63	C
55-59	C-
50-54	D
0-49	F

### Academic misconduct:

Cheating on an exam will result in the score of '0' on that exam. Homework assignments must be completed independently. Sharing answers or using another student's answer will be considered cheating and receive the score of '0'. The material in your posters needs to be appropriately referenced (see departmental policy on academic misconduct below). All forms of cheating will be reported to the university for appropriate action.

### Psychology Department's position on academic misconduct:

Cheating, plagiarism, and other forms of academic misconduct are very serious concerns of the University, and the Department of Psychology has taken steps to alleviate them. In the first place, the Department has implemented software that can reliably detect cheating on multiple-choice exams by analyzing the patterns of students' responses. In addition, the Department subscribes to TurnItIn – a service designed to detect and deter plagiarism. All materials (term



papers, lab reports, etc.) that students submit for grading will be scanned and compared to over 4.5 billion pages of content located on the Internet or in TurnItIn's own proprietary databases. The results of these comparisons are compiled into customized "Originality Reports" containing several sensitive measures of plagiarism; instructors receive copies of these reports for every student in their class.

In all cases of suspected academic misconduct the parties involved will be pursued to the fullest extent dictated by the guidelines of the University. Strong evidence of cheating or plagiarism may result in a zero credit for the work in question. According to the University Act (section 61), the President of UBC has the right to impose harsher penalties including (but not limited to) a failing grade for the course, suspension from the University, cancellation of scholarships, or a notation added to a student's transcript.

All graded work in this course, unless otherwise specified, is to be original work done independently by individuals. If you have any questions as to whether or not what you are doing is even a borderline case of academic misconduct, please consult your instructor. For details on pertinent University policies and procedures, please see Chapter 5 in the UBC Calendar (<http://students.ubc.ca/calendar>) and read the University's Policy 69 (available at <http://www.universitycounsel.ubc.ca/policies/policy69.html>).

### **Copyright:**

All materials of this course (lecture slides, assignments, assessments, course readings, etc.) are the intellectual property of the instructor or licensed to be used in this course by the copyright owner. Redistribution of these materials by any means without permission of the copyright holder(s) constitutes a breach of copyright and may lead to academic discipline. Students are permitted to record the lectures for personal use only if needed to support their learning.

### **Access and diversity:**

UBC is committed to equal opportunity in education for all students including those with documented disabilities. If you have a disability that affects your learning or performance please visit <http://students.ubc.ca/about/access> and take the necessary steps to ensure your success in this course.

### **UNIVERSITY POLICIES**

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest

academic standards in all of their actions. Details of the policies and how to access support are available here (<https://senate.ubc.ca/policiesresources-support-student-success>).

## HELPFUL RESOURCES:

**Student Services:** [students.ubc.ca/livewell/services](https://students.ubc.ca/livewell/services)

Student Services provide a variety resources to support student health and wellbeing.

- **Counselling Services** ([students.ubc.ca/livewell/services/counselling-services](https://students.ubc.ca/livewell/services/counselling-services); 604-822-3811) offers resources help support student mental health. You may see a counsellor individually, attend a group, or to document a problem requiring academic concession.
- **UBC Wellness Centre** ([students.ubc.ca/livewell/services/wellness-centre](https://students.ubc.ca/livewell/services/wellness-centre); 604-822-8450) Speak with other students about tips for managing stress, keeping healthy sleep and eating patterns, concerns about safe sex and more.
- **Student Health Services** ([students.ubc.ca/livewell/services/student-health-service](https://students.ubc.ca/livewell/services/student-health-service); 604-822-7011) provides students with healthcare related services to help maintain your health including access to doctors and registered nurses.

**The Kaleidoscope:** [the-kaleidoscope.com](https://the-kaleidoscope.com)

A confidential peer-run mental health support group on campus. You may attend if you are experiencing challenges in the area of mental health or are simply feeling stressed about school. No registration required.

**SpeakEasy:** [ams.ubc.ca/services/speakeasy](https://ams.ubc.ca/services/speakeasy); 604-822-9246

A student run service that offers confidential support for students experiencing crisis.

**SHARE:** [www.vivreshare.org](https://www.vivreshare.org)

Self Harm Anonymous Recovery and Education is a program designed to promote self care and educate about self harm. SHARE support groups meet biweekly; times and locations can be found on their website.

**Access and Diversity:** [students.ubc.ca/about/access](https://students.ubc.ca/about/access); 604-822-5844

Provides accommodations for students living with physical or mental disabilities.

**UBC Psychology Clinic:** [clinic.psych.ubc.ca](https://clinic.psych.ubc.ca)

Psychological services provided to the community, including assessment & treatment for children, adults & families by clinical psychology trainees.

**Mood Disorders Centre UBC:** [ubc-mooddisorders.vch.ca](https://ubc-mooddisorders.vch.ca)

A mental health service specifically for people living with depression or bipolar disorder.

**Vancouver Coastal Health substance use services:** <http://www.vch.ca/your-care/mental-health-substance-use/substance-use-services>

Provides services to help those struggling with substance use or addiction, including detox, group therapy, counseling and medication.

**AMS Food Bank:** [ams.ubc.ca/services/food-bank/](https://ams.ubc.ca/services/food-bank/)

If you are in a financial emergency AMS food bank can provide you with a food hamper. You are able to use the service up to 6 times each term.

**BC Crisis Center:** [crisiscentre.bc.ca](https://crisiscentre.bc.ca); 604-872-3311

Non-profit, organization that provides emotional support people in crisis in BC. Crisis line available 24/7. Distress line: if you are in distress or are worried about someone in distress who may hurt themselves, call 1-800-SUICIDE (784-2433) 24 hours a day to connect to a BC crisis line, without a wait or busy signal.