

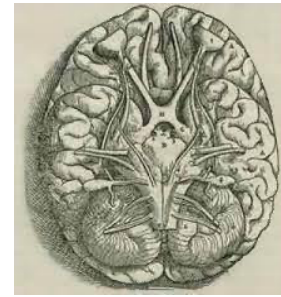
# PSYCHOLOGY 365 Spring 2026

## Cognitive Neuroscience

University of British Columbia, Vancouver

3 credits

T-Th 3:30-5:00pm, Hebb 100



### Instructor

Dr. Rebecca Todd (she/hers)

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### TAs:

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\*bear painting by former 365 Student Nicola Tindle

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### Acknowledgment

UBC's Point Grey Campus is located on the traditional, ancestral, and occupied territory of the hə́n̓qəmíḱəm̓-speaking Musqueam peoples. The land it is situated on has been a place of intergenerational learning for the Musqueam people from time immemorial.

### Equity, Diversity and Inclusion

We will work to create a learning environment that welcomes, listens to, and respects students of all identities, inclusive of race, gender, sexuality, age, or ability. Unfortunately, like much of psychology and academia, research on cognitive neuroscience is historically built on a small subset of privileged voices. I review the set readings annually and lecture materials every year and am always interested in hearing suggestions for ways they can be made more diverse. Progress in this field will only be made by integrating a more diverse set of experiences, and I would be grateful to receive any input you may have.

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## I. COURSE DESCRIPTION AND GOALS

The two-fold goal of this course is to introduce you to questions that drive research in cognitive neuroscience and the methods we have to answer them, while engaging you in active and critical discussion of current research in the field. That is, the goal is to give you a taste of classic studies and late-breaking news in the neuroscience of human cognition, while giving you the skills to make your own decisions about what information means and what to do about it. Topics include the cognitive neuroscience of perception, attention, learning, and memory. After successful completion of this course, you will have a better understanding of what we know and don't know about the mysterious workings of the human mind and brain — and a glimpse of what the future may hold.

### Summary of Assessments

Neuroanatomy quizzes (By Jan 22)	2%
Midterm Exam 1 (Feb 3)	25%
Midterm Exam 2 (Mar 10)	25%
Midterm Exam 3 (Mar 31)	25%
Final projects (Apr 7 & 9)	20%
Exam Questions (Various dates)	3%
<b>Total</b>	<b>100%</b>
Human Subject Pool/NURC participation	2%

## II. COURSE MATERIALS

### Classes

**In-person class sessions.** Classes will be in-person. All lecture material will be examinable.

### Readings

**Required Textbook.** Richard Passingham (2016). *Cognitive Neuroscience: A Very Short Introduction*. Oxford University Press. Available at the Bookstore. Also available as an ebook. ISBN: 9780198786221 and online at the UBC library for free! The inexpensive and very readable book will provide a general overview and some background for the experimental studies we will read and discuss in class.

**Other readings.** These include peer-reviewed experimental papers which will be posted on Canvas. Papers are also available through the UBC library. There will also be videos, media articles, and blog posts assigned.

Readings are meant to provide background (textbook) as well as details (papers) of scientific studies to be covered in each class, and will be due before class. The lectures will not simply recapitulate the readings, but will build on, expand and clarify material in the readings as well as *provide additional information*. Therefore, it's important to make sure you do the readings before the relevant lecture so that you have the necessary background for the lecture material. The lectures will highlight the information from the papers that you will need for the exams, so that you can study what's important.

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### III. COURSE WEBPAGE

<https://canvas.ubc.ca/> (location for important announcements, readings, lecture notes, discussion, and grades)

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### IV. COURSE REQUIREMENTS

The assignments in this course are designed to foster an understanding of current research in cognitive neuroscience that is informed by background knowledge of how thinking has developed in each research area. Readings, lectures, and exams will be geared towards this goal.

#### Academic concessions

For course policies regarding in-term academic concessions, please refer to the relevant [UBC calendar entry](#).

#### Exams

Exams will cover all lecture and reading material indicated in the syllabus. Note that lectures add to and elaborate on reading materials, and will contain information that is not in the readings. **Course policy is that we do not give make-up exams.** If you are excused from one of the midterms we will distribute that proportion of your grade across the other exams.

**Neuroanatomy quizzes (2%).** Students in this class have a wide range of backgrounds. Some of you have a huge and sophisticated understanding of neuroanatomy and some have no familiarity with it at all. To make sure everyone is has some familiarity with very basic human neuroanatomy, you must review the neuroanatomy module and complete two short Canvas quizzes based on the material.

#### 3 Midterms (25% each).

These will draw on both lectures and the readings. For superior performance; you must have a clear understanding of both. There are three midterms so that you can digest the material in smaller chunks, which should allow you to master it better. Having three midterms also gives you the chance to keep bringing up your game, as well as giving you some insurance if one of the exam days is just a bad day. Because there is no final, **the midterms will be cumulative. The focus will be on new material but some high level retention of material from earlier lectures/readings will also be required.**

**Final Project (20% of total course grade).** At the end of term, you will be required to present a final project based on a recently published paper of your choice. This can be a presentation with slides, a video, a poster/piece of visual art, a podcast, slam poetry, a theatrical performance... Let your imagination/creativity loose. The content will be a cognitive neuroscience paper of the presenters' choice (published since 2015). This is where you deploy the paper-reading muscles you've been building over the term. You will need to present the main questions, methods, results, and critique the conclusions in plain, accessible, and entertaining form. Creativity is encouraged. Beyond the required content, the format is up to you. You will form your own groups of 2-3 students. If you do not wish to present as part of a group, presenting solo is also an option. For live and recorded material a **5-minute time limit** will be strictly enforced.

**Participation (3% of total course grade).** Participation grades will be based on submitting **three multiple-choice exam questions prior to each of the exams** (1% each) over the course of the term (**1%**). A bonus of writing a good exam question is that it may be used in one of the midterms!

### Piazza for Discussions

This term we will be using Piazza for class discussion. The system is highly catered to getting you help fast and efficiently from classmates, the TA, and myself. **Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza.** Find our class signup link at:  
[https://piazza.com/ubc.ca/winterterm22026/psyc\\_v3650022025w2](https://piazza.com/ubc.ca/winterterm22026/psyc_v3650022025w2)

### Research participation (extra credit). Extra Credit via the Human Subject Pool (HSP) or NURC.

As part of this course, you are invited to earn **2% extra credit**.

Many students will choose to earn these credits by spending **two hours participating in psychology studies (worth 1% point for each hour)** through the Department of Psychology's Human Subject Pool (HSP) system. You can locate, create an account, and sign up for studies by going to <https://hsp.psych.ubc.ca>. **Please register in the system by the end of the first month of classes to have the opportunity to earn your first ½ hour credit with a brief online survey that will increase your eligibility for more studies.**

#### HSP participation:

Many students will choose to earn these credits by spending **two hours participating in psychology studies (worth 1% point for each hour)** through the Department of Psychology's Human Subject Pool (HSP) system. You can locate, create an account, and sign up for studies by going to <https://hsp.psych.ubc.ca>. **Please register in the system by the end of the first month of classes to have the opportunity to earn your first ½ hour credit with a brief online survey that will increase your eligibility for more studies.**

Once registered in the system, you will be able to browse through and select which studies you wish to participate in, sign up for an available timeslot, and confirm your accumulated credits afterward. **At the end of the last day of class for the term, the subject pool is closed.** At that point, you will no longer be able to receive credits. I strongly urge you to participate in and confirm your credits long *before* the last week of class since **many studies will not offer timeslots near the end of the term and you may be locked out before allocating your credits to your desired course.** Further instruction on how to use the HSP online system can be found at <https://psych.ubc.ca/undergraduate/opportunities/human-subject-pool/> in the document entitled "Subject Pool Information for Participants."

NURC: An alternative way to earn the allowed 2% extra credit is by participation in NURC (details below). Note this 2% will be in place of the 2% you earn through participating in HSP studies, not on top of it! **You can only earn 2% extra credit!**

The UBC Neuroscience Association is hosting its 10th Annual Neuroscience Undergrad Research Conference (NURC) in March (date TBA)! Every year, NURC gathers over 300 students, presenters, and faculty to celebrate our passion for neuroscience and our outstanding undergraduate researchers! At NURC, expect to see career panels, workshops, student poster/oral presentations, and a keynote speech by a prominent neuroscientist. The sign-up form to attend the conference will be sent out early February.

If you are interested in presenting your own neuroscience-related research, or have any other questions, reach out to us at [una.nurc@gmail.com](mailto:una.nurc@gmail.com). Updates will be announced in class and on our Instagram (@ubcneuroassociation)

Alternative assignment:

**The Library Option** As an alternative to participation in psychology subject pool experiments, you may complete a library-writing project. Such projects consist of reading and summarizing 1) the research question, 2) the methods and 3) the results (in written form) of a research article from the peer reviewed journal *Psychological Science*. You will receive one (1) research participation credit for each article summary that meets the following requirements.

Requirements:

- The article must have been published in the journal titled "*Psychological Science*"
- The article must have a publication date from the year 2000 to present (i.e. papers from 2001 are acceptable; those from 1999 or earlier are not)
- The article must be a research article; it cannot be a review article, a news item, a notice, or a letter to the editor, for example
- The summary should be approximately 500 words in length
- You must include your name, student number, course, section, instructor and email address on each summary
- You must log on to the Human Subject Pool (HSP) system (<http://hsp.psych.ubc.ca/>) and create an account before submitting your article summaries. Your credit is assigned using the online system.

For each course, you may obtain the same number of extra credits via the library option as specified in the course syllabus (i.e. the same number of credits available for students who participate in research).

Summaries must be submitted **no later than 10 days before the end of classes**.

You are to submit your article and your summary to turnitin.com. If you don't have a turnitin account already (from a previous course), you will need to create a user account in Turnitin. **For the library assignment the class ID is 51268460, class name is "HSP 2025 Winter 2", and password is "Research"**. See [www.turnitin.com](http://www.turnitin.com), and click on the "Training" link at the top of the page for detailed instructions on how to submit papers to Turnitin. Any student who is suspected of plagiarism will, at a minimum, not be granted credit, and their course instructor will be notified. Further action may be taken at a departmental or university level.

**HSP Online Study Credit Limit:**

We will no longer have an online credit limit. Instead, students are free to receive their HSP bonus credits from any combination of "in-lab" and "online" studies. However, "in-lab" studies will offer a bonus 0.5 credits on top of the standard 0.5 credits per 30 minutes of participation (e.g., a 1 hour "in-lab" study will award 1.5 credits, while an equivalent "online" study will award 1 credit).

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## V. COURSE GRADING

Your final grade consists of the items described in Section IV. Performance for each of the items above will be put into a calculator that outputs your final course percentage earned. As mentioned in Section IV, any extra credit earned will be added to this final score.

You are earning a degree at a highly reputable post-secondary institution. Therefore, criteria for success are high. The Faculty of Arts offers the following guidelines that broadly characterize the kind of work that is generally associated with the main grade ranges.

**A RANGE: *Exceptional Performance.*** Strong evidence of original thinking; good organization in written work; capacity to analyze (i.e., break ideas down) and to synthesize (i.e., bring different ideas together in a coherent way); superior grasp of subject matter with sound critical evaluations; evidence of extensive knowledge base.

**B RANGE: *Competent Performance.*** Evidence of grasp of subject matter; some evidence of critical capacity and analytic ability; reasonable understanding of relevant issues; evidence of familiarity with the literature.

**C-D RANGE: *Adequate Performance.*** Understanding of the subject matter; ability to develop solutions to simple problems in the material; acceptable but uninspired work; not seriously faulty but lacking style and vigor.

**F RANGE: *Inadequate Performance.*** Little or no evidence of understanding of the subject matter; weakness in critical and analytical skills; limited or irrelevant use of the literature.

## VI. UNIVERSITY POLICIES

### ACADEMIC INTEGRITY

Academic honesty is essential to the continued functioning of the University of British Columbia as an institution of higher learning and research. All UBC students are expected to behave as honest and responsible members of an academic community. Breach of those expectations or failure to follow the appropriate policies, principles, rules, and guidelines of the University with respect to academic honesty may result in disciplinary action.

Students are expected to be familiar with the following policies outlined in the Academic Calendar:  
<https://academicintegrity.ubc.ca/student-start/>

We will adhere to the UBC Respectful Environment policy <https://hr.ubc.ca/sites/default/files/wp-content/blogs.dir/14/files/UBC-Statement-on-Respectful-Environment-2014.pdf>.

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 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 on [the UBC Senate website](#).

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## VII. COURSE POLICIES

### Readings

The readings will be current experimental papers featuring cutting edge studies in cognitive neuroscience, supplemented by short chapters from the Passingham textbook. Note these papers are demanding! I will walk you through how to read these papers and point you to what material is important to know for exams and quizzes and what methodological details are unnecessary for our understanding of the papers.

### E-mail policy

This is a large class and email volume can be overwhelming. To make sure you get a response when you really need one Please do the following. **1) Make sure the answer to your question is not on the syllabus!** If it IS we won't respond to your email! **2) Ask any questions where the answers will be of interest to other class members via Piazza!** For other matters, in most cases, e-mails will be answered within 48 hours of receipt (not including weekends). **If you send the instructor or teaching assistants an email, the email subject should include the course and nature of the inquiry. Please send questions about grading/assessment to the TAs and about the course content to Prof. Todd.** Please note that last-minute emails about test questions may very well not be answered the day before an exam so please plan accordingly.

### Syllabus changes

There may be minor changes to the syllabus during the term. You will be notified of these changes ASAP and no changes will be instituted that dramatically affect your ability to properly prepare for an examination.

### Office hours

You can make an appointment during office hours if you have questions or concerns about any of the material that you wish to discuss live/"in-person." You may also make office hour appointments to ask about graduate school, research or other related questions. If we cannot answer your question(s) about topics beyond the course, we'll direct you to someone who can.

You will need to contact TAs for sessions provided to review your exams if you so choose. If you have any outstanding questions you can fill out a request form and talk to Dr. Todd. Any grading disputes other than calculation errors for the midterms must be handled with Dr. Todd within three weeks of when the scores were released.

### Classroom conduct

Our classroom is a place where you should always feel safe and respected. It is also a place that is conducive to learning and intellectual curiosity. Any behaviors compromising this environment will not be tolerated and the student(s) and/or individual(s) will be asked to leave.

### Use of chatGPT/ other generative models.

Use of large language models can be a powerful study tool and experimenting with their use will be valuable in developing our skills with them to help you make sense of jargon-filled scientific writing – as long as you use

them wisely and check your sources. They can also help you build creative and effective presentations. But they shouldn't do all the work for you! students may employ AIs in their presentations, but **must document their use of AI**. Make sure you state exactly how you used them and why. More details will be provided in the instructions for the assignment.

### Access and Diversity

UBC is committed to equal opportunity in education for all students including those with documented physical or learning disabilities. If you believe you fall in this category, please visit [this website](#) to take the necessary steps to ensure that you have every opportunity that you deserve to excel here at UBC.

### Grade bumps

When computing final grades, the instructor carefully analyzes every single student to determine whether a grade bump is deserved. Bumps *may* be awarded for consistent performance at a major grade boundary or for marked improvement from the midterm to the final (i.e., 10%+). Bumps are not guaranteed and are *\*not\** awarded for non-academic reasons (i.e., student is graduating and/or involved in sports or other extracurricular activities). **DO NOT send the instructor an email asking for a grade bump.**

### 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. For what how to avoid plagiarism on writing assignments see UBC guidelines for plagiarism:

<http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,54,111,959>

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 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.

Do note that during exams, the instructor and invigilators reserve the right to move students in their seating arrangement with no explanation provided.

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## VIII. LEARNING ANALYTICS

Learning analytics includes the collection and analysis of data about learners to improve teaching and learning. This course will be using the following learning technologies: Canvas & Piazza. Many of these tools capture data about your activity and provide information that can be used to improve the quality of teaching and learning. In this course, I plan to use analytics data to:

- View overall class progress
- Review statistics on course content being accessed to support improvements in the course
- Track participation in discussion forums

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## IX. COPYRIGHT

All materials of this course (course handouts, lecture slides, assessments, course readings, etc.) are the intellectual property of the Course Instructor or licensed for use 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 lectures.

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## X. USEFUL LINKS

### Helpful student information

UBC Academic Calendar

<http://www.calendar.ubc.ca/vancouver/academicyear.cfm>

UBC Centre for Accessibility

<https://students.ubc.ca/about-student-services/centre-for-accessibility>

### WELLNESS RESOURCES

Below you will find links to a wide range of resources you may want to use if you are struggling in any way to manage your responsibilities while in school or the stresses of life in general.

**Campus Lightbox:** One website with links to ALL the mental health resources and more:  
<https://campuslightbox.com/>

**For a neutral third party (Ombudsperson):** <https://ombudsoffice.ubc.ca/>

**Psychology 365 2026: CLASS SCHEDULE**

<u>Lecture</u>	<u>Date</u>	<u>Day</u>	<u>Topic</u>	<u>Assignment</u>
1	Jan 6	T	Introduction/Syllabus	Syllabus
2	Jan 8	Th	Cognitive Neuroscience: The Good, the Bad, and the Ugly	Passingham Chap 1; How to Read a Scientific Paper for Non-Scientists
3	Jan 13	T	Cognitive Neuroscience methods	Neuroanatomy module; Poldrack & Farah, 2015
4	Jan 15	Th	fMRI: Workhorse of Cog Neuro	
5	Jan 20	T	Recognizing objects Part 1	Passingham Chap 2 through p. 58 (up to Classifying Objects)
6	Jan 22	Th	Recognizing Objects Part 2	Neural networks made easy
7	Jan 27	T	What is special about faces?	Harada et al., 2020; Cracking face code.
8	Jan 29	Th	<b>Review</b>	
9	Feb 3	T	<b>Midterm 1</b>	
10	Feb 5	Th	Guest Lecture: Tammy Vanderwal	
11	Feb 10	T	Classifying Objects	Passingham Chap 2 p. 58 (Classifying Objects) on.
12	Feb 12	Th	Predicting Perception	Egner, Monti & Summerfield, 2009
<b>NO CLASS – Reading Week</b>				
13	Feb 24	T	Selecting Attention	Passingham Chapter 3
14	Feb 26	Th	Sustaining attention	Rosenberg et al., 2016
15	Mar 3	T	Emotion, Motivation, and Attention	Inman et al., 2023
16	Mar 5	Th	<b>Review</b>	
17	Mar 10	T	<b>Midterm 2</b>	
18	Mar 12	Th	Reward and attention (& learning)	Anderson et al., 2016; 2 Dopamine blogs
19	Mar 17	T	Neurophenomenology, Participatory Sensemaking & Neurodecolonization	Berkovich-Ohana et al., 2020; Todd, De Jaegher & Di Paolo substack
20	Mar 19	Th	The Hippocampus: From space travel to time travel	Passingham Chapter 4; Fernandez-Velasco & Spiers, 2024
21	Mar 24	T	Episodic memory	Bird et al., 2015
22	Mar 26	Th	<b>Review</b>	
23	Mar 31	T	<b>Midterm 3</b>	
24	April 2	Th	TBA	
25	April 7	T	Final projects	

26	Apr 9	Th	Final projects
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