

Psyc 451
Inside the mind of an expert: The cognitive neuroscience of expertise
Mondays & Thursdays, 4:30 PM to 5:50 PM
Recurring Zoom Link: <https://us02web.zoom.us/j/84404301983>

Seminar Facilitators

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Course Description

Have you ever marveled at the performance of a concert pianist, been transfixed by the play of a chess master, or mesmerized by the slight-of-hand tricks of a crafty magician? While we novices view these feats of expertise with wonder and curiosity, for scientists, the study of expertise is a unique window into the cognitive processes and brain mechanisms that are shaped by biology and experience. Scientific inquiries into the cognitive processes of expertise raise provocative questions: How do we define expertise? How long does it take to become an expert? What are the mental processes that mediate expert performance? Are expert processes qualitatively different from the processes of a novice? What changes in brain function occur as a consequence of expertise? Do the cognitive and neural mechanisms of expertise transfer from one domain to another?

In this course, we will embark on an in-depth exploration into the mind and brain of the expert. We will consider various kinds of expertise and the cognitive processes mediating expert performance. The seminar will be divided into two sections. In the first section, the focus will be on the *domain* of expertise where teams of students will select a specific expertise (e.g., mushroom foraging, juggling, stock market analyst) and introduce this topic to the seminar group. Each team will be responsible for assigning an introductory article, making a short presentation, and leading the seminar discussion on the topic. For the second half of the course, the focus will be on the *individual expert* where students will conduct a semi-structured interview with an expert of their choice asking the expert to reflect on their internal thinking and learning processes. Based on the interview, students will create a short video documentary highlighting cognitive aspects of expertise.

Our Course Goals

The goal of the seminar is to gain a deep understanding of human expertise with respect to how it is acquired and changes in cognitive and neural processes that facilitate expert performance. In this seminar class, our goal is to strengthen your intellectual and scholarly skills in three major areas:

- *Critical reading.* For the seminar, you will be asked to read and critique psychological papers and offer your comments on a learning platform called Perusall (<https://perusall.com>) that teaches you the proper way to read and critique a scientific article. Perusall tracks the amount of time you spend reading an assigned article and awards marks for the number of visits and the quality of your comments.
- *Critical writing.* strengthen your scientific and analytic writing skills, we will be assigning weekly “think” questions where you will encourage to synthesize course material. The essays will be evaluated based on the quality of the writing (e.g., grammar, structure), integration of course concepts and conciseness. You will be asked to write a final research paper where you will integrate material drawn from the readings, seminar discussion, interview and outside sources.

• *Seminar engagement and communication.* To promote intellectual engagement, seminar students are encouraged to actively participate in seminar discussion either through dialogue or via the Zoom chat.

Course Evaluation

Your final grade for Psyc 491 will be based on the following criteria:

1.) *Presence and engagement (5%)* - The success of the seminar depends on student participation and engagement. We value your presence (even remotely). By “showing up,” you contribute to the process of learning and gathering of knowledge for yourself and others. Your “presence” mark will be calculated as the percentage of your overall attendance for the Monday and Thursday sessions. For example, if you attended 90% of the classes, you will receive a Presence mark of 4.5% (90% of 5%). We encourage you to participate in and contribute to discussion in the general seminar. We expect that seminar members will make at least one comment to the group discussion each week.

2.) *Reading annotations (15%)* - To prepare for the week’s discussion, students will be assigned a target article and asked to comment on the paper via Perusall (<https://perusall.com/>). Course code for Psyc 451 is **TANAKA-3XUKY**. *Perusall* is an e-reader platform that allows students to annotate the assigned readings and engage in topic discussion similar to social media posting using “like” comments, hashtags, emoticons, and link. Engagement will be evaluated according to the frequency and quality of the comments and responsiveness to the comments of others.

To access Perusall:

1. Go to <https://perusall.com/>, click *Login*, and then either log in using your Facebook, Twitter, or Google account, or create an account using your email address and password.
2. Select *I am a student* and enter the following course code: **TANAKA-3XUKY**

Articles will be posted on Perusall a week in advance . Perusall will not allow you to make any comments or changes after the due date has passed (11:59pm on the due date). Engagement will be evaluated according to the frequency and quality of the comments and responsiveness to the comments of others. Perusall has a built-in grading system which will grade your comments based on their depth and insight. For each reading assignment, you will be evaluated on a “0 to “10” scale. Please see the general Perusall guidelines below.

General Perusall Guidelines:

Please see the posted rubric (‘Perusall rubric) and scoring examples (‘Perusall scoring examples) on Brightspace (under the folder ‘Perusall’) for guidance on how to score well. In terms of the particular grading settings for this course, **we expect minimum five high-quality comments** to score well. Comments can either be stand-alone or in response to someone else's comment. The majority of your grade is based on these comments; however, there a few other components that contribute to your grade:

- Commenting throughout the reading (i.e., not having all your comments on one page)
- Spending a sufficient amount of time reading each page of the assignment
- Reading all the way to the end of the assignment
- Posing thoughtful questions and comments that elicit responses from classmates

- Upvoting thoughtful questions and helpful answers (upvote by clicking on the check mark in the top right corner of someone's comments)

3.) *Weekly “think” essays (30%)* – Each week, two or three “think” essay questions will be posted highlighting the main ideas and themes for each session. The purpose of the question is to help students synthesize the material into a coherent thesis or argument. The essays will be evaluated based on the quality of the writing (e.g., grammar, structure), integration of course concepts and conciseness. **The word limit for the essays is 400 words** and text beyond this length will not be evaluated. Each essay will be evaluated on a scale of 0 to 10. A score of “9” indicates an essay that is well written in terms of its grammar and exposition integrating material from lecture, readings and family group discussion. A score of “7.5” indicates a fair essay with good integration of course material from lecture, readings, and family group discussion. A score of “6.5” indicates a marginal essay in terms of integration of lecture, readings and family group discussion. The final mark will be determined by the percentage of obtained points out of the total number of possible points. *Students will have the option of selecting 5 of the 7 THINK essays. If you submit more than 5 essays, we compute your mark based on the essays with top 5 marks and will drop your lowest essay(s).* The assigned essay for the week must be submitted on Brightspace by Sunday, 11:59 PM. Late submissions will not be accepted.

4.) *Group presentation on domain of expertise (20%)* – In teams, seminar participants will select a type of expertise to feature for a seminar presentation. Presentations will be marked based on the coverage of the topic, creativity and engagement. Student presenters are encouraged to use a variety of instructional methods, including breakout rooms, short video and audio clips, guest speakers. One week prior to their presentations, groups will submit a required reading and two or three THINK questions that address core ideas of the presentation. Groups are strongly encouraged to consult with Amy and Jim about their presentation.

5.) *“Inside the mind of an expert” documentary (30%)* –Seminar participants will interview an expert of their choice (see examples below) and create a three to five video documentary on their expert. The documentary should provide a first-hand account of the “life of an expert” describing the motivation, development and thinking processes that drives the passion of their expertise. The video will be evaluated according to its content, creativity and production. Following the video presentation, speakers will host a 10 minute Q&A session in which they will respond to questions and comments offered by the seminar audience.

Examples of experts: juggler, mushroom forager, pastry chef, magician, pianist, chess master, poker player, rubik cube champ, stamp (or coin) collector, actor, rock climber, wine taster, sculptor, jig saw puzzler, architect, therapist, graffiti artist, furniture maker, computer programmer, hunter, fisher, choreographer, comedian, graphic novelist, fashion designer, photographer, organic farmer, poet, cryptographer, video gamer, golfer.

Marking Policy: The final letter grade in the course will be based on total percent score rounded to the third decimal point. Final grades that end with a decimal point of 0.5 or above will be rounded to the next higher whole number, and grades that end with a decimal point below 0.5 will be rounded to the next lower whole number. For example, a mark of 89.5 is rounded up to 90%, whereas 89.4 is rounded down to 89%.

Grading Standards (Note the change in scaling)

A+ = 90 - 100%
A = 85– 89%
A- = 80 – 84%
B+ = 77 – 79%

B = 73 – 76%
B- = 70 – 72%
C+ = 65 – 69%
C = 60 – 64%

D = 50 – 59%
F < 50%

Respect for Diversity

We acknowledge the Songhees, Esquimalt and WSÁNEĆ (*wh-sah-nuch*) peoples on whose traditional territory the University of Victoria stands and whose historical relationships with the land continue to this day. It is our intent that learning needs of our students be addressed both in and out of class. The diversity of students in our class is a resource, strength and benefit. It is our intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socio-economic status, ethnicity, race, and culture. Please let us know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you. Know that we value your presence as a learner and student in Psyc 491.

Tentative Course Schedule

Date	Day of Week	Topic	Reading
Jan. 10	M	Introduction to the course	
Jan. 13	Th	Definition of expertise: What is an expert?	
Jan. 16	Su	<i>THINK PAPER #1 Due</i>	
Jan. 17	M	The cognitive psychology of expertise (Jim)	
Jan. 20	Th	The neural bases of expertise (Jim)	
Jan. 23	Su	<i>THINK PAPER #2 Due</i>	
Jan. 24	M	Case Study #2: Visual Search (Amy)	
Jan. 27	Th	Case Study #2: Visual Search (Amy)	
Jan. 30	Su	<i>THINK PAPER #3 Due</i>	
Jan. 31	M	Group #1	
Feb. 3	Th	Group #2	
Feb. 6	Su	<i>THINK PAPER #4 Due</i>	
Feb. 7	M	Group #3	
Feb. 10	Th	Introduction to the ethnographic approach: How to interview an expert	
Feb. 9	Su	<i>THINK PAPER #5 Due</i>	
Feb. 14	M	Individual consultations w/ Jim & Amy (Members from Groups 1-3)	
Feb. 17	Th	Individual consultations w/ Jim & Amy (Members from Groups 4-6)	
Feb. 21	M	Spring Break	
Feb. 24	Th	Spring Break	
Feb. 28	M	Group #4	
Mar. 3	Th	Group #5	
Mar. 6	Su	<i>THINK PAPER #6 Due</i>	
Mar. 7	M	Group #6	
Mar. 10	Th	Individual consultations w/ Jim & Amy (Members from Groups 1-3)	

Mar. 13	Su	<i>THINK PAPER #7 Due</i>	
Mar. 14	M	Individual consultations w/ Jim & Amy (Members from Groups 4-6)	
Mar. 17	Th	Final work session (Attendance mandatory)	
Mar. 21	M	"Inside the mind of the expert" Film Festival with Q&A (Group #1)	
Mar. 24	Th	"Inside the mind of the expert" Film Festival with Q&A (Group #2)	
Mar. 28	M	"Inside the mind of the expert" Film Festival with Q&A (Group #3)	
Mar. 31	Th	"Inside the mind of the expert" Film Festival with Q&A (Group #4)	
Apr. 4	M	"Inside the mind of the expert" Film Festival with Q&A (Group #5)	
Apr. 7	Th	"Inside the mind of the expert" Film Festival with Q&A (Group #6)	

Sexualized Violence Prevention and Response at UVic

UVic takes sexualized violence seriously, and has raised the bar for what is considered acceptable behaviour. We encourage students to learn more about how the university defines sexualized violence and its overall approach by visiting www.uvic.ca/svp. If you or someone you know has been impacted by sexualized violence and needs information, advice, and/or support please contact the sexualized violence resource office in Equity and Human Rights (EQHR). Whether or not you have been directly impacted, if you want to take part in the important prevention work taking place on campus, you can also reach out:

Where: Sexualized violence resource office in EQHR, Sedgewick C119

Phone: 250.721.8021

Email: svpcoordinator@uvic.ca

Web: www.uvic.ca/svp

BE WELL



A note to remind you to take care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress. All of us benefit from support during times of struggle. You are not alone.

Social Life, Friends, & Community at UVic:

Having a social network is an extremely important foundation for positive mental health. There are lots of benefits to joining clubs, course unions, intramurals and teams on campus.

<https://www.uvic.ca/mentalhealth/undergraduate/connecting/index.php>

Counselling Services:

Counselling Services can help you make the most of your university experience. They offer free professional, confidential, inclusive support to currently registered UVic students. www.uvic.ca/services/counselling/

Health Services:

University Health Services (UHS) provides a full service primary health clinic for students, and coordinates healthy student and campus initiatives.

www.uvic.ca/services/health/

Centre for Accessible Learning:

The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations www.uvic.ca/services/cal/. The sooner you let us know your needs, the quicker we can assist you in achieving your learning goals in this course.

Elders' Voices:

The Office of Indigenous Academic and Community Engagement (IACE) has the privilege of assembling a group of Elders from local communities to guide students, staff, faculty and administration in Indigenous ways of knowing and being.

www.uvic.ca/services/indigenous/students/programming/elders/

Mental Health Supports and Services:

Mental health supports and services are available to students from all areas of the UVic community: www.uvic.ca/mentalhealth/undergraduate/

UNIVERSITY OF VICTORIA
Department of Psychology

Important Course Policy Information
Winter 2022

Prerequisites

Students who remain in courses for which they do not have the prerequisites do so at their own risk. Students who complete courses without prerequisites ARE NOT exempt from having to complete the prerequisite course(s) if such courses are required for the degree program.

Program Requirements

For more information see the UVic Calendar January 2022.

Registration Status

Students are responsible for verifying their registration status. Registration status may be verified using My Page, View Schedule. Course adds and drops will not be processed after the deadlines set out in the current UVic Calendar.

Commitment to Inclusivity and Diversity

The University of Victoria is committed to promoting, providing and protecting a positive and supportive and safe learning and working environment for all its members.

In the Event of Illness, Accident or Family Affliction

- ***What to do if you miss the final exam scheduled during the formal exam period***

Apply at Records Services for a "Request for Academic Concession", normally within 10 working days of the date of the exam. Records Services will forward the form to the instructor. If the concession is granted, the instructor will determine how to deal with the situation (for example, a deferred exam). Where a concession is not applied for or where such application is denied, an N grade will be entered on the student's academic record.

OR, you can download the Request for Academic Concession form here:

<http://www.uvic.ca/registrar/assets/docs/record-forms/rac.pdf>

- ***What to do if you miss an exam other than one scheduled during the formal exam period***

Do not apply at Records Services for a "Request for Academic Concession". Instead submit documentation of the illness, accident or family affliction directly to your course instructor (or designated teaching assistant).

- ***What to do if you require additional time to complete course requirements***

Apply at Records Services for a "Request for Academic Concession", normally within 10 working days of the end of the course. Records Services will forward the form to the instructor. If the concession is granted, the instructor will determine how to deal with the situation (for example, a deferred exam). Where a concession is not applied for or where such application is denied, an N grade will be entered on the student's academic record.

OR, you can download the Request for Academic Concession form here:

<http://www.uvic.ca/registrar/assets/docs/record-forms/rac.pdf>

Policy on Academic Integrity including Plagiarism and Cheating

The Department of Psychology fully endorses and intends to enforce rigorously the Senate Policy on Academic integrity

https://www.uvic.ca/calendar/future/undergrad/#/policy/Sk_0xsM_V?bc=true&bcCurrent=08%20-%20Policy%20on%20Academic%20Integrity&bcGroup=Undergraduate%20Academic%20Regulations&bcItemType=policies. It is of utmost importance that students who do their work honestly be protected from

those who do not. Because this policy is in place to ensure that students carry out and benefit from the learning activities assigned in each course, it is expected that students will cooperate in its implementation.

The offences defined by the policy can be summarized briefly as follows:

1. **Plagiarism.** You must make sure that the work you submit is your work and not someone else's. There are proper procedures for citing the works of others. The student is responsible for being aware of and using these procedures.
2. **Unauthorized Use of an Editor.** The use of an editor is prohibited unless the instructor grants explicit written authorization.
3. **Multiple Submission.** Only under exceptional circumstances may a work submitted to fulfill an academic requirement be used to satisfy another similar requirement. The student is responsible for clarifying this with the instructor(s) involved.
4. **Falsifying Materials Subject to Academic Evaluation.** This includes falsification of data, use of commercially prepared essays, using information from the Internet without proper citation, citing sources from which material is not actually obtained, etc.
5. **Cheating on Assignments, Tests, and Examinations.** You may not copy the work of others in or out of class; you may not give your work to others for the purpose of copying; you may not use unauthorized material or equipment during examinations or tests; and you may not impersonate or allow yourself to be impersonated by another at an examination. The Department of Psychology has a policy of not making old examinations available for study purposes. Therefore, use of old exams without the express written permission of the instructor constitutes cheating by the user, and abetting of cheating by the person who provided the exam.
6. **Aiding Others to Cheat.** It is a violation to help others or attempt to help others to engage in any of the conduct described above.

Instructors are expected to make every effort to prevent cheating and plagiarism. This may include the assignment of seating for examinations, asking students to move during examinations, requests to see student identification cards, and other measures as appropriate. Instructors also have available to them a variety of tools and procedures to check for Internet and electronic media-based cheating. In instances of suspected or actual plagiarism or cheating, instructors, following prescribed procedures, are authorized to take steps consistent with the degree of the offence. These measures will range from a zero on the test or assignment or a failing grade for the course, probation within a program to temporary or even permanent suspension from the University.

Rights of Appeal are described in the Policy on Academic Integrity in the University calendar September 2021.

The definitive source for information on Academic Integrity is the University Calendar

Other useful resources on Plagiarism and Cheating include:

1. The Ombudsperson's office: <https://uvicombudsperson.ca/tips/plagiarism/>
The [Office of the Ombudsperson](#) is an independent and impartial resource to assist with the fair resolution of student issues. A confidential consultation can help you understand your rights and responsibilities. The Ombudsperson can also clarify information, help navigate procedures, assist with problem-solving, facilitate communication, provide feedback on an appeal, investigate and make recommendations. Phone: 250-721-8357; Email: ombuddy@uvic.ca; Web: uvicombudsperson.ca.
2. UVic Library Resources <https://www.uvic.ca/library/help/citation/plagiarism/index.php>
3. https://www.uvic.ca/library/research/citation/documents/avoiding%20plagiarism%20guideUpdate_Sept_2013.pdf