PSYO/NESC 2000, Fall 2026, Asynchronous Online Methods in Experimental Psychology and Neuroscience

Component	Instructors	Where & When	TAs
Lectures	Dr. Jennifer Stamp, jastamp@dal.ca **Office hours:** Mondays, 1:30–3pm, Room 2533 or on Teams	Rowe 1028; Tues/Thurs 4:05-5:25pm	Mohammed Askari mh783776@dal.ca Arinze Uzoezie Arinze.Uzoezie@dal.ca
Labs	Dr. Erin Sparks erin.sparks@dal.ca **Office hours:** Wednesdays, 1:30–3pm, LSC Psychology Wing, Room 2324	See Brightspace for your lab schedule. LSC Psychology Wing, Room 4207 **or** 4208	See Brightspace for your lab TA's name and contact information.

Description: This course provides a thorough grounding in scientific methods and research strategies used by psychologists and neuroscientists. Lectures explore concepts, methods, and analytic tools employed to investigate human and animal behaviour and neurophysiology. Students complete a series of lab activities meant to illustrate core scientific principles, with focus on experiential learning and effectively communicating scientific findings. The primary goal is to provide the necessary tools and skills to ask questions scientifically.

Prerequisites: Two terms of Introductory Psychology with a minimum of B- for each term. This course is restricted to Psychology & Neuroscience majors.

Course Materials: All readings and videos are FREE from 1) (in-progress) open access text and 2) primary research articles 3) lecture and active learning videos (see Brightspace).

Technology Requirements: The midterm, final exam, and lab exams will be completed in class, on Brightspace. Students will need a device with internet access that is capable of running Brightspace. This does **NOT** require camera, speaker, or microphone access.

Course Components

Active Learning (Lecture Component)
This course follows an active learning approach, in that most interactions with the instructor (whether synchronously or asynchronously) are devoted to critical thinking exercises to prepare for quizzes and exams. Passive learning, like reading and watching lectures, is done on your own time. Each active learning module emphasizes tangible skills including creating summary tables, identifying research elements from articles, making flowcharts of research design, and critically evaluating research results and practices. Active learning modules will be recorded and posted to Brightspace before respective assessments are due.

Practicing Science (Lab Component)
The lab component involves data-generating activities that form the basis of a research question you will develop, analyze, and write-up. Participation in lab activities as part of the course is required, but sharing your data is voluntary. You will be guided through assignments to help you decipher scientific literature and write a short research manuscript based on class data.

Have Your Say! (Reflections Component)
In a large enrollment class, it's challenging to hear from everyone so students will have opportunities to share opinions and concerns through anonymous surveys. Links are posted on Brightspace and QR codes will be shared in class. **Participation is voluntary but encouraged because results will be covered on exams.**

Course Assessment

Lecture Component:

Tested material includes **1)** readings, **2)** lecture recordings, **3)** other posted material (TED talks, websites) and **4)** reflection surveys. Grades are based on:

- **2 exams**, **20 marks each, (40% total), 80 min, in-class on Brightspace,** *(Multiple choice, multi-select, interpreting images, short answer)*. BRING A CHARGED DEVICE

- **Best 5 of 8 quizzes, 2 marks each (10% total), online, OPEN BOOK, 25 min recommended** *(Multiple choice, multi-select, interpreting images, lowest marks dropped, including missed quizzes.* ***No make-ups for missed quizzes)***

Lab Component:

All lab assignments build toward the research manuscript that you will submit at the end of term ("Final Lab Report"). Questions about the lab components of the course should be directed to your lab TA and/or Dr. Sparks. Grades for the lab component are based on:

Study Plans: Research Question & Method Selection (5 marks)
The experiment that forms the basis for your lab assignments can be used to explore many possible research questions. In this assignment, you will identify the **research questions** you plan to explore in your lab assignments and will summarize the study's **method**.

Topic Sentence Outline (TSO) Assignment (15 marks)
A topic sentence outline is the opening sentence of each paragraph you plan to include in a paper, with the citations you will use to support your points. In this assignment, you will write a topic sentence outline of your paper's **Introduction** and **Method** sections. You are not responsible for writing a full Discussion outline in this assignment, but you will include outlines for two **study limitations** that you plan to discuss in your final lab report.

Under each paragraph's topic sentence, you will **cite the sources** you plan to use to support that paragraph's points. You will summarize the relevant claim(s) from each source, and will include a **screenshot** showing where that source supports your claim.

Your TSO must include a complete, accurate Reference list of all sources cited in the assignment. References must have clickable doi's that go to the correct paper.

Lab "Exam" (10 marks)
After submitting your Topic Sentence Outline, you will complete a Brightspace "exam" during your lab session (week of Nov. 23). You will answer 3–4 short answer questions that ask you to explain the ideas and decisions that shaped your TSO. For example, you might be asked to describe a specific study that you cited in support of claim X, or to discuss how effectively that source supports claim X.

Lab exams will take place during students' regular lab sessions and is designed to be completed in **40 minutes**. Because labs last 80 minutes, students who have extra time accommodations (up to 2x/double-time) can complete the exam in their labs, without going through the Accessibility Centre. Students whose extra time is longer than 2x, or who have other exam accommodations, should schedule their exams with Accessibility using their lab date and start time.

The exam will be completed in Brightspace, so bring a charged device!

Final Lab Report (18 marks)
At the end of term, students will submit a short research manuscript based on the data collected in labs. It will include an Abstract, Introduction, Method, Results, and Discussion sections, and a complete Reference list with clickable doi's. You will incorporate feedback received on assignments throughout the term to complete your final lab report.

Lab Activity Participation (2 marks)
Students are expected to attend and participate in their lab sessions. Throughout the term, students will take part in 8 activities during their lab session. These activities will include generating data, summarizing prior studies, evaluating scientific writing, and working on your lab assignments. Activities will be graded for completion (pass/fail). The best 6 of 8 activity marks will count toward final grades, so students may miss up to two lab activities without penalty.

Summary:

Assessment	% of grade	Date	Details
Midterm	20%	October 20	80 min, regular lecture time/location. Completed on Brightspace: Bring a charged device!
Final exam	20%	Final exam period	80 minutes; date, time, and location to be scheduled by registrar's office. Completed on Brightspace: Bring a charged device!
Quizzes	10%	Due on Mondays, throughout the semester. See *Lecture Schedule* for specific due dates.	Open book, completed on Brightspace outside of class. Best 5 of 8 count toward final grade.
Study Plan	5%	Due Oct. 1 by 11:59pm	"Universal 72-hour extension" applies to this assignment
Topic Sentence Outline	15%	Due Nov. 5 by 11:59pm	"Universal 72-hour extension" applies to this assignment
Lab "Exam"	10%	Week of Nov. 23 (during students' lab session)	40 minutes, regular lab time/location. Completed on Brightspace: Bring a charged device!
Final Lab Report	18%	Due Dec. 10 by 11:59pm	"Universal 72-hour extension" applies to this assignment
Lab Activity Participation	2%	Throughout the term; during labs	Completed during labs, graded for completion. Best 6 of 8 count toward grade.

Letter grades are final at the end of term and cannot be bumped up with extra work.

A+	90-100	B+	77-79	C+	65-69	D	50-54
A	85-89	B	73-76	C	60-64	F	<50
A-	80-84	B-	70-72	C-	55-59		

Course Policies

Missed or late assessments

Missed exams (midterm, final, lab exam):
Missed exams must be communicated to the relevant instructor (Dr. Stamp for midterm and final exam; Dr. Sparks for the lab exam) as soon as possible. Students can extend the due date by 72 hours **for any reason** by uploading a **Student Declaration of Absence** (SDA, see Brightspace assignment folders).

Missed quizzes and lab activities: Students' lowest 3 quiz grades are dropped, and the lowest 2 lab activities are dropped. There are no make-ups for these course components.

Missed lab assignments (Study Plan, Topic Sentence Outline, Final Lab Report):
Everyone gets a universal 72-hour extension, which can be applied to as many assignments as needed. There is no need to email Dr. Sparks or your TA; these extensions will be applied automatically while grading. **Please read the full details of how this policy works!**

Assignments can be submitted up to 10 days after the **original** submission date, but anything beyond the 72-hour extension period will incur a 5% penalty per day.

For example:

- An assignment due on Nov. 5 at 11:59pm will **NOT** incur a late penalty if submitted by Nov. 8 at 11:59pm.

- Assignments submitted between Nov. 9 and Nov. 15 will incur a 5% penalty per day (5% for Nov. 9 submissions, 10% for Nov. 10, etc.)
- Assignments will not be accepted beyond Nov. 16, unless the student is approved for a longer-term extension by Dr. Sparks. This will require documentation explaining why the student was unable to complete the assignment during the time available.

The universal 72-hour extension covers the recommended accommodation plan extensions and the SDA extension period. **You cannot "stack" this extension with others**—72 hours is the maximum extension. Students whose accommodations require an extension longer than 72 hours must consult with their accommodations advisor to arrange this with Dr. Sparks.

Important: You should **only** use this extension if you **absolutely need it**! The syllabus deadline **is the real deadline**, and you should plan to have your assignments done well in advance of that deadline.

- If your assignment is due Nov. 5 and you plan to have it done before that date, the universal extension provides a grace period if life disrupts your plans.
- However, if you treat the extended deadline as the "real" deadline, you won't have recourse if life happens on Nov. 8. No further extensions are available without formal documentation and/or accommodation advisor support.

Use of AI (artificial intelligence)

AI of any form is not permitted on quizzes, exams, or lab assessments (including study plans, outlines, and final lab reports). The work you produce must be your own. Assessments are AI vetted and only AI-resistant questions are used; using it will lower your grades.

Students may use AI as an independent study tool (e.g., to generate practice questions or have concepts explained in different words). However, be aware that AI-generated study materials may not capture the full details taught in class, and the questions AI generates are often easier than those created by your instructors. If you use AI to study, do so thoughtfully; critically evaluate its output to ensure you are fully learning the material.

You may use AI for writing mechanics (grammar, spelling, or reference formatting); if doing so, you remain fully responsible for the accuracy and precision of your work. Inaccurate or fabricated sources are not acceptable in any academic work and are penalized heavily, regardless of whether they are AI generated.

Course Content

Course Learning Outcomes:

1. Differentiate science from non-science and pseudoscience
2. Identify biases that could influence scientific thinking and devise strategies to avoid them
3. Describe the history of research ethics and its current practice
4. Discuss how participants can influence research findings
5. Describe different types of data collected in psychology and neuroscience research
6. Describe the main components of different types of research designs
7. Compare and contrast different research designs and identify strengths and weaknesses
8. Describe strategies to strengthen reliability and validity
9. Conduct and participate in research studies
10. Identify the function of each section of a research article
11. Communicate rationale, methods, findings, and interpretation in scientific manuscripts

Lecture Schedule

Date	Lesson	Recorded Lectures	Quiz Due
Sep 8	Introduction	Course Tour & Class Survey	Q1: Pre-req Check **Sep 14**
Sep 10	Scientific Thinking	Science & Pseudoscience	

Sep 15	Scientific Thinking	Sampling Bias Cognitive Bias	Q2: Scientific Thinking **Sep 21**
Sep 17	Research Participants	Research Ethics	
Sep 22	Research Participants	Research with Humans Research with Animals	Q3: Research Participants **Sep 28**
Sep 24	Research Reporting	Science Communication	
Sep 29	Research Reporting	Replication	Q4: Science Communication **Oct 5**
Oct 1	Dealing with Data	Types of Data	
Oct 6	Dealing with Data	Operational Definitions	
Oct 8	Dealing with Data	Time of Day Effects	
Oct 13	Descriptive Research	Famous Case Studies Naturalistic Observation	
Oct 15	Descriptive Research	Remote Research Exam 1 Review	
Oct 20	**EXAM 1**	**In-Class Brightspace Exam**	
Oct 22	Correlational Research	Elements of Correlations Exploring Causation	Q5: Correlational Designs **Oct 26**
Oct 27	Correlational Research	Surveys	*Not included on Quiz 4*
Oct 29	Laboratory Research	Research Settings Carryover Effects	Q6: Laboratory Research **Nov 2**
Nov 3	Experimental Designs	Elements of Experiments	
Nov 5	Experimental Designs	Complex Experiments	Q7: Experimental Designs **Nov 16**
Nov 9-13	READING	WEEK	NO CLASSES
Nov 17	Experimental Pitfalls	Confounds	
Nov 19	Experimental Pitfalls	Expectancy Effects	Q8: Experimental Pitfalls **Nov 23**
Nov 24	Special Designs	Quasi-experiments	
Nov 26	Special Designs	Neuroimaging	
Dec 1	Special Designs	Clinical Trials	
Dec 3	Review	Exam 2 Review	

EXAM 2 during final exam period (check Dal exam schedule)

Lab Schedule

The “Week of...” column lists the **Monday** of each week. Labs are scheduled from Mon–Thurs, so your lab may occur on a different date than listed here (e.g., if your lab is on Tuesdays, your Lab 1 will occur on Sept. 15). Check DalOnline to confirm what day your lab occurs.

Week of...	Lab #	Lesson
Sept. 7	***No labs this week! (Labour Day closure)***	
Sept. 14	**1**	Data collection: Deep Breathing Experiment

Sept. 21	**2**	Study Design Overview; Choosing Research Question & Methods
Sept. 28	***No labs this week! (National Day for Truth & Reconciliation closure)***	
Oct. 5	**3**	Introduction Sections & Topic Sentence Outlines
Oct. 12	***No labs this week! (Thanksgiving closure)***	
Oct. 19	**4**	Types of Sources; Finding Academic Articles
Oct. 26	**5**	Writing Tips; Structuring Your Ideas
Nov. 2	**6**	Study Results; TSO Assignment Work/Consult Time
Nov. 9	***No labs this week! (Reading Week)***	
Nov. 16	**7**	Discussion Sections
Nov. 23	**8**	**LAB "EXAM"** (explain choices you made in your TSO)
Nov. 30	**9**	Preparing for your Next Steps; Lab Report Work/Consult Time
Dec. 7	***No labs this week! (Last week of classes)***	

University Resources & Supports

Accessibility

You are eligible for accommodations based on protected characteristics such as religion. If you have religious, cultural, or community-significant observances that conflict with course requirements, reach out to your instructor to discuss alternatives for completing the course requirements.

To begin the process of requesting a formal academic accommodation, contact the Student Accessibility Centre

Syllabus Appendix: Student Supports & Guidelines

The Course Syllabus Appendix website (linked below) is a new resource that compiles information traditionally listed in syllabi. It includes a comprehensive list of student supports, and information on how each one can help you. This includes:

- Academic supports (e.g., advising, Dalhousie Libraries, study skills, Student Advocacy Service, etc.)
- Holistic supports (e.g., Dalhousie Student Union, Student Health & Wellness, International Centre, Black Student Advising Centre, Indigenous Student Centre, 2SLGBTQ+ Advising, etc.)

It also includes university statements and policies (e.g., Student Code of Conduct, Class Recording Protocol, Student Use of Course Materials, etc.)

Access the syllabus appendix here: Syllabus Appendix: Student Supports & University Statements, Policies, and Guidelines