

PSYC 371:
Research Problems in Behavioral Neuroscience
FALL 2018

Instructor: Steve Lamontagne
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Office: Craine Bldg. 403
Office hours: by appointment

Teaching Assistants/Lab Instructors: Madison Mailhiot email: mm317@queensu.ca
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Lectures: Time: Tuesday, 11:30 – 13:00
Friday, 13:00 – 14:30
Room: Walter Light Hall, Room 212

Labs: Time: Monday, 10:00 - 11:30 (TA: Edwyn)
Monday, 11:30 – 13:00 (TA: Edwyn)
Monday, 14:30 - 16:00 (TA: Maddy)
Monday, 16:00 - 17:30 (TA: Maddy)
Room: Miller Hall, Room 322

Text: The required readings for the course consist of review articles and book chapters selected to complement the topics covered in the lectures. Links to the readings are available on the PSYC 371 onQ site (under the “Content” tab).

Assessments:	1. Lightning talk:	5%
	2. NeuroTopic presentation:	15%
	3. Labs (3):	45%
	4. Final exam:	25%
	5. Participation:	10%

1. LIGHTNING TALK:

One 3-5 min (MAX) PowerPoint presentation introducing an animal test used in behavioural neuroscience. The species and test that you select is your choice; however, you will be evaluated on the following:

- Accurate description of the test (i.e., the procedure) **/1**
- Limitations of the test (e.g., what are some potential confounds? Disadvantages?) **/1**
- External validity of the test (can we confidently translate findings to clinical practice?) **/1**
- At least one example where the test was used in research (experimental paper) **/1**
- Presentation style & uniqueness (e.g., text to graphic ratio, good pace/timing) **/1**

Lightning talks are designed to convey information in a concise yet informative manner. This is a skill that is invaluable in the behavioural sciences (especially at conferences!) ... and will certainly help prepare you for thesis defenses. All PowerPoint presentations should be sent to the instructor (SJL10@queensu.ca) **no later than Monday September 17 at 11:59PM**. The presentations will be loaded sequentially into a common PowerPoint to facilitate smooth transition between talks. See this resource (or others) for tips: <https://barriebyron.wordpress.com/2013/02/17/so-you-want-to-give-a-lightning-talk/>

2. NEUROTOPIC PRESENTATION / DISCUSSION:

One group seminar presentation (~20 min per group member) followed by 20-30 min class discussion. Seminar presentations should summarize the introduction, methods, results, and conclusions of an experimental paper chosen by the instructor (see *Schedule of Topics*). Included in this presentation is a brief (1 page in enough!, point form acceptable) summary of the paper presented. This summary will be distributed to all students in the course and forms part of the course reading material.

3. LABS:

Three lab assignments (worth 15%, 20%, and 10%). Your lab facilitators will provide detail. Please note that lab attendance is mandatory and will contribute to the mark received for this component of the course.

4. FINAL EXAM:

The final December exam will consist of short-answer and essay-type questions. Material from lectures, NeuroTopic presentations, and the required readings will be examined.

5. PARTICIPATION:

Active contributions to discussions during lectures and NeuroTopic presentations. Please note: attendance is not the same as active participation.

SCHEDULE OF TOPICS

Date	Topic	Readings
SECTION I: THE (RODENT) BRAIN		
Sept. 07	Introduction: The course	Abbott 2010
Sept. 11	Dr. A. Winterborn: Animal use in research and teaching	Handout
Sept. 14	Rats as model to study brain & behavior	Kolb & Tees 1990
Sept. 18	Lightning Talks	
Sept. 21	Enrichment & brain functions I: Fundamentals	Rosenzweig & Bennett 199
Sept. 25	Enrichment & brain functions II: Human Brain	TBA
Sept. 28	Enrichment & brain functions III: Applications	Muente et al. 2002
SECTION II: LEARNING AND MEMORY		
Oct. 01	STRUCTURE REPORT DUE	
Oct. 02	Memory & space I: Systems & Behaviour	
Oct. 05	Memory & space II: Synaptic mechanisms	Morris 2003
Oct. 09	NeuroTopic Discussion #1: Enrichment & HPA Reactivity	Morley-Fletcher et al 2003
Oct. 12	The emotional brain I: "Fear and Anxiety"	TBA
Oct. 15	BELL-RINGER EXAM	
Oct. 16	NeuroTopic Discussion #2: Enrichment: A Protective Factor	Johnson et al 2013
Oct. 19	The emotional brain II: Emotion and memory	McGaugh 2000
Oct. 23	NeuroTopic Discussion #3: Exercise Regulates L&M	van Praag et al 1999
Oct. 26	FALL MIDTERM BREAK	

SECTION III: COMPLEX SYSTEMS AND BRAIN STATES

Oct. 30	NeuroTopic Discussion #4: Cued vs Contextual Fear	Phillips & LeDoux 1992
Nov. 02	Neuropathic pain: Methods & Neurobiology	TBA
Nov. 06	NO CLASS	
Nov. 09	Neurogenesis I: History, evidence, and functions	Leuner 2006
Nov. 13	NeuroTopic Discussion #5: Learned vs Innate Fear	Corcoran & Quirk 2007
Nov. 16	Neurogenesis II: The “Depression Link”	Miller & Hen 2015
Nov. 19	LAB REPORT DUE	
Nov. 20	NeuroTopic Discussion #6: Cerebral Processing of Pain	Schweinhardt et al 2006
Nov. 23	The question of “consciousness”	Vanderwolf 1998
Nov. 26	POSTER DAY	
Nov. 27	NeuroTopic Discussion #7: Stress & Neurogenesis	Lemaire et al 2000
Nov. 30	Behavioural Neuroscience: Big questions, next steps	Krakauer et al 2017

Exam period: FINAL EXAM

Grading Scheme and Grading Method

All components of this course will receive numerical percentage marks. The final grade you receive for the course will be derived by converting your numerical course average to a letter grade according to Queen's Official Grade Conversion Scale:

Queen's Official Grade Conversion Scale

Grade	Numerical Course Average (Range)
A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	63-66
C-	60-62
D+	57-59
D	53-56
D-	50-52
F	49 and below

3. Location and Timing of Final Examinations

The exam dates for each Term are listed on the Faculty of Arts and Science webpage under "Important Dates." Student exam schedules for the Fall Term are posted via SOLUS immediately prior to the Thanksgiving holiday; for the Winter Term they are posted on the Friday before Reading Week, and for the Summer Term they are individually noted on the Arts and Science Online syllabi. **Students should delay finalizing any travel plans until after the examination schedule has been posted. Exams will not be moved or deferred to accommodate employment, travel/holiday plans or flight reservations.** Also, as indicated in Academic Regulation 8.3, student must write all final examination in all on-campus courses on the Kingston campus.

4. Statement on Academic Integrity

Academic Integrity is constituted by the six core fundamental values of honesty, trust, fairness, respect, responsibility and courage (see www.academicintegrity.org). These values are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. Adherence to the values expressed through academic integrity forms a foundation for the "freedom of inquiry and exchange of ideas" essential to the intellectual life of the University (see the Senate Report on Principles and Priorities <http://www.queensu.ca/secretariat/policies/senate/report-principles-and-priorities>).

Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments conform to the principles of academic integrity. Information on academic integrity is available in the Arts and Science Calendar (see Academic Regulation 1 <http://www.queensu.ca/artsci/academic/calendars/regulations/academic-regulations/regulation-1>), on the Arts and Science website (see <http://www.queensu.ca/artsci/academics/undergraduate/academic-integrity>), and from the instructor of this

course. Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forger and falsification, and are antithetical to the development of an academic community at Queen's. Given the seriousness of these matters, actions which contravene the regulation on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the failure of a course to a requirement to withdraw from the university.

5. Calculator Policy

As noted in Academic Regulation 9.2, "Calculators acceptable for use during quizzes, tests and examinations are intended to support the basic calculating functions required by most Arts and Science courses. For this purpose, the use of the **Casio 991 series calculator** is permitted and is the only approved calculator for Arts and Science students."

6. Copyright of Course Materials

Please see Appendix B (page 8) for discussion of copyright options.

7. Accommodations for Disabilities

Queen's University is committed to achieving full accessibility for people with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. The Senate Policy for Accommodations for Students with Disabilities was approved at Senate in November 2016 (see <https://www.queensu.ca/secretariat/sites/webpublish.queensu.ca.uslclwww/files/files/policies/senateandtrustees/ACADACCOMMPOLICY2016.pdf>). If you are a student with a disability and think you may need academic accommodations, you are strongly encouraged to contact the **Queen's Student Accessibility Services (QSAS)** and register as early as possible. For more information, including important deadlines, please visit the QSAS website at: <http://www.queensu.ca/studentwellness/accessibility-services/>

8. Academic Consideration for Students with Extenuating Circumstances

Queen's University is committed to providing academic consideration to students experiencing extenuating circumstances that are beyond their control and are interfering with their ability to complete academic requirements related to a course for a short period of time, not to exceed three months. Students receiving academic consideration must meet all essential requirements of a course. The Senate Policy on Academic Consideration for Students in Extenuating Circumstances was approved at Senate in April, 2017 (see <http://www.queensu.ca/secretariat/sites/webpublish.queensu.ca.uslclwww/files/files/policies/senateandtrustees/Academic%20Considerations%20for%20Extenuating%20Circumstances%20Policy%20Final.pdf>) Each Faculty has developed a protocol to provide a consistent and equitable approach in dealing with requests for academic consideration for students facing extenuating circumstances. Arts and Science undergraduate students can find the Faculty of Arts and Science protocol and the portal where a request can be submitted at: <http://www.queensu.ca/artsci/accommodations>. Students in other Faculties and Schools who are enrolled in this course should refer to the protocol for their home Faculty.

If you need to request academic consideration for this course, you will be required to provide the name and email address of the instructor/coordinator. Please use the following:

Instructor Name: Steven Lamontagne

Instructor email address: SJL10@queensu.ca

Copyright of Course Materials

This material is copyrighted and is for the sole use of students registered in Psyc 371*. This material shall not be distributed or disseminated to anyone other than students registered in Psyc 371*. Failure to abide by these conditions is a breach of copyright, and may also constitute a breach of academic integrity under the University Senate's Academic Integrity Policy Statement.