

Psychology 355
Laboratory in Comparative Cognition: Cognitive Origins
Syllabus

Instructor:

Prof. Valerie Kuhlmeier
Phone: 613-533-2478
Email: vk4@queensu.ca

Teaching Assistants:

Ellen O'Donoghue
E-mail: 0demo1@queensu.ca

Scott Robson
E-mail: 9sr58@queensu.ca

Course Description

This course provides advanced study in the field of comparative cognition for undergraduate students with an interest in the evolution and function of cognitive processes across animal species. Through a combination of in-class lectures, laboratory activities, and assigned readings, theory and research methodology in the areas of number, timing, causal reasoning, social learning, tool use, and communication will be discussed. With successful completion of this course, students will have a knowledge base that will promote critical thinking, application, and effective communication outside of the classroom as well as support further learning in advanced psychology, biology, and neuroscience courses.

Learning Outcomes

With successful completion of PSYC355, students will be able to:

- Identify and discuss primary areas of research in comparative cognition.
- Determine the relationship between cognitive processes and operational definitions of behavior in animal models.
- Evaluate and effectively communicate the rationale, methodology, results, and implications of research on key topics in comparative cognition.
- Design an experimental protocol to test a novel hypothesis of cognition in nonhuman animals.

Course Website

Some communication related to this course will occur on the course website on OnQ, including: weekly timetables, online readings, submission of assignments, and the posting of grades/feedback. Access to this site is restricted to students who are registered in this course. In addition, course announcements may be sent through Queen's email addresses, so it is important to access this account on a regular basis throughout the term.

Required Reading

All students should purchase or have access to the following textbook (which was also used in the prerequisite course, PSYC 205):

Olmstead, M.C., & Kuhlmeier, V.A. (2015). *Comparative Cognition*. Cambridge, UK: Cambridge University Press.

Readings from primary sources (e.g., journal articles) relating to specific class topics will be available on the course website.

Lectures

Lectures will be designed to elaborate and clarify topics presented in the required reading and laboratory sessions. Material presented in lecture will appear on the exams.

Lecture Outlines (in Word format) will be available on the course website by the morning of lecture days. In many cases, the outlines will be available earlier (e.g., the evening before a lecture day). Many students find it best to handwrite or type their notes directly onto the outlines (these are not 'slides' but true 'outlines').

Laboratory Sessions

Laboratory sessions are an integral part of PSYC355. Students are required to attend all scheduled lab sessions and to complete each assignment as specified.

Evaluation

Exam 1	15%
Exam 2	15%
Paper Assignment: Study Proposal	25%
Writing Plan (5%)	
Final Proposal (20%)	
Laboratory Participation	10%
Laboratory Session Assignments	35%
Week 3 (3%)	
Week 4 (7%)	
Week 5 (5%)	
Week 7 (5%)	
Weeks 9 & 10 (7%)	
Weeks 11 & 12 (8%)	

Exam 1 and Exam 2 (15% each)

There will be two exams, each worth 15% of the final mark. Each exam will take 1.5 hour. These exams will consist of multiple choice and short answer questions with all of the test material based on the course readings, lectures, and laboratory sessions. The material covered in each test is non-cumulative: Exam 1 will cover material from the first half of the course and Exam 2 from the second half of the course. The dates for these tests are listed in the class timeline (Exam 2 will occur during the Final Exam period). There are no re-writes for the exams. If a student misses an exam and provides written documentation for their absence (e.g. medical note, death certificate), the completed exam will be recalculated to constitute 30% of their final mark.

Paper Assignment: Study Proposal (25%)

Students will create a study proposal in the style of many graduate school scholarship applications in Canada. Detailed instructions can be found in the Paper Assignment Instructions on the course website.

Writing Plan (5%)

Each student will prepare a writing plan for their paper. (See the course timeline for specific dates.) The writing plan should include the subject of the paper as well as an outline for the main topics to be discussed.

Final Proposal (20%)

Details regarding paper format can be found on the course website. A late penalty of 10% per day (including weekends) will be applied to all late papers.

Laboratory Participation (10%)

Each student will receive a participation mark for their contribution to 11 different in-class laboratory activities (the lowest mark or one missed laboratory activity will be dropped). Dates are listed in the course website. These marks will be based on the averaged, confidential evaluation of other group members as well as that of the laboratory instructor. Students will only receive their mark for participation if they submit participation marks for other group members.

Note on Late Assignments

Deadlines for all assignments are listed on the course website. A late penalty of 10% per day (including weekends) will be applied to all late assignments.

Request for Academic Accommodation

Students registered with Queen's Health, Counseling, and Disability Services who require alternative accommodation for exams and/or assignments should notify the instructor or TAs as soon as possible. Please consult Queen's Disability Service for more information:

<http://www.queensu.ca/hcds/ds/students/accommodations.htm>.

Academic Integrity

"Academic integrity is constituted by the five core fundamental values of honesty, trust, fairness, respect and responsibility (see http://www.academicintegrity.org/fundamental_values_project/index.php). 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)

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), on the Arts and Science website (see <http://www.queensu.ca/artsci/academics/academic-integrity>), and from the instructor of this course.

Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery 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."

Queen's Copyright Information:

"This material is copyrighted and is for the sole use of students registered in Psychology 355. This material shall not be distributed or disseminated to anyone other than students registered in Psychology 355. 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."

Grade Conversion:

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 Faculty of Arts and Science 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

WEEK	READINGS	DATE	PRE-MEETING ACTIVITY	CLASS MEETING	POST-MEETING ACTIVITY
1	Chapter 1 (Optional) Shettleworth (2010)	Jan. 11	Download lecture outline	Lecture 1: Cognitive Origins	
		Jan. 12		Laboratory Session: Clever Animal Stories & Killjoy Explanations	<u>Participation:</u> Summarize your small group discussion in 3-5 sentences. Please complete the summary by yourself, not as a group. (1 pt.) [Due: Friday, Jan. 13 5:00pm]
2	Boesch (2007) Olson et al. (1995)	Jan. 18	Download lecture outline	Lecture 2: What is Comparative about Comparative Cognition?	
		Jan. 19		Laboratory Session: Inter- and Intra-specific Variation	<u>Participation:</u> Complete the Peer Evaluation of Group Participation Form. (1 pt.) [Due: Friday, Jan. 20 5:00pm]
3	Chapter 6 (p. 185-195) Rakitin et al. (1998)	Jan. 25	Download lecture outline	Lecture 3: Timing	
		Jan. 26		Laboratory Session: Timing Intervals	<u>Participation:</u> Complete the Peer Evaluation of Participation Form. (1 pt.) [Due: Friday, Jan. 27 5:00pm] <u>Assignment:</u> Complete & submit. (3 pt.) [Due: Sunday, Jan. 29 5:00pm]
4	Chapter 6 (p. 195-212) Halberda & Feigenson (2008)	Feb. 1	Download lecture outline	Lecture 4: Counting	
		Feb. 2	Complete number task	Laboratory Session: Approximate Number System	<u>Participation:</u> Complete the Peer Evaluation of Participation Form. (1 pt.) [Due: Friday, Feb. 3 5:00pm] <u>Assignment:</u> Complete & submit. (7 pt.) [Due: Sunday, Feb. 5 5:00pm]

WEEK	READING	DATE	PRE-MEETING ACTIVITY	CLASS MEETING	POST-MEETING ACTIVITY
5	Chapter 8 (p. 254-258) Cacchione et al. (2009)	Feb. 8	Download lecture outline	Lecture 5: Object Physics	
		Feb. 9	Read Introduction to ICE	Laboratory Session: Extensions	<u>Participation</u> : Complete the Peer Evaluation of Participation Form. (1 pt.) [Due: Friday, Feb. 10 5:00pm] <u>Assignment</u> : Complete & submit. (5 pt.) [Due: Sunday, Feb. 12 5:00pm]
6		Feb. 15		Exam 1	
		Feb. 16		Proposal Writing Workshop	Read Study Proposal and Writing Plan Instructions
7	Chapter 8 (p. 248-253) Blaisdell (2010)	Mar. 1	Download lecture outline	Lecture 6: Causality	
		Mar. 2		Laboratory Session: Causal Reasoning	<u>Participation</u> : Complete the Peer Evaluation of Participation Form. (1 pt.) [Due: Friday, Mar. 3 5:00pm] <u>Assignment</u> : Complete & submit. (5 pt.) [Due: Sunday, Mar. 5 5:00pm]
8	Chapter 8 (p. 258-268) Martin-Ordas et al. (2008)	Mar. 8	Download lecture outline	Lecture 7: Tool Use	
		Mar. 9		Laboratory Session: Tool Use Transfer Tasks	<u>Participation</u> : Complete the Peer Evaluation of Participation Form. (1 pt.) [Due: Friday, Mar. 10 5:00pm] <u>Writing Plan</u> : Submit on OnQ. (5 pt.) [Due: Friday, Mar. 10 5:00pm]

WEEK	READING	DATE	PRE-MEETING ACTIVITY	CLASS MEETING	POST-MEETING ACTIVITY
9	Chapter 13 (Optional) Horner et al. (2006)	Mar. 15	Download lecture outline	Lecture 8: Social Learning I	
		Mar. 16		Laboratory Session: Cultural Transmission	<u>Participation</u> : Complete the Peer Evaluation of Participation Form. (1 pt.) [Due: Friday, Mar. 17 5:00pm]
10	Tennie et al. (2009) Dean et al. (2014)	Mar. 22	Download lecture outline	Lecture 9: Social Learning II	
		Mar. 23		Laboratory Session: Cultural Transmission (cont.)	<u>Participation</u> : Complete the Peer Evaluation of Participation Form. (1 pt.) [Due: Friday, Mar. 24 5:00pm] <u>Assignment</u> : Complete & submit. (7 pt.) [Due: Sunday, Mar. 26 5:00pm]
11	Chapter 12 (optional) Bekoff (1995)	Mar. 29	Download lecture outline	Lecture 10: Natural Communication Systems I	
		Mar. 30		Laboratory Session: Play Behaviour	<u>Participation</u> : Complete the Peer Evaluation of Participation Form. (1 pt.) [Due: Friday, Mar. 31 5:00pm]
12	Horowitz & Hecht (2016)	Apr. 5		[No Lecture] Submit Study Proposal (20 pt.) [Due Wednesday, Apr. 5 5:00pm]	
		Apr. 6		Laboratory Session: Play Behaviour (cont.)	<u>Participation</u> : Complete the Peer Evaluation of Participation Form. (1 pt.) [Due: Friday, Apr. 7 5:00pm] <u>Assignment</u> : Complete & submit. (8 pt.) [Due: Sunday, Apr. 9 5:00pm]

Exam 2 will be held during the final exam period