Biology 445 – Neuroethology
Winter Term 2017

Calendar description:

The current status of research in the study of the neural control of the natural behaviour of animals. Topics include the detection and coding of information in the environment, the integration of this information in the process of decision-making, the generation of the motor patterns that underlie behaviour, and general constraints on form and function of neural circuits.

Instructor	**M. Robertson**
Instructor Contact	robertrm@queensu.ca Phone: 613-533-6533
Office and Hours	3118 Biosciences Complex; TBA
TA:	TBA
TA Contact Information	TBA
Office Hours	TBA

Teaching Assistant: TBA

Lecture Schedule: Rm. 1120 Biosciences Complex
Monday 13:30 - 14:20 hrs
Wednesday 12:30 - 13:20 hrs
Friday 11:30 - 12:20 hrs

Tutorial: Rm. 3110 Biosciences Complex
Section Tuesday 11:30 - 12:50 hrs
Section Wednesday 14:30 - 15:50 hrs

Course Prerequisites:

BIOL 339 or PHGY 214 and a minimum GPA of 2.0 in the Biological Foundations List: BIOL 102/3.0; BIOL 103/3.0; BIOL 201/3.0; BIOL 202/3.0; BIOL 205/3.0; BIOL 206/3.0; BIOL 302/3.0; BIOL 303/3.0; BIOL 330/3.0; BIOL 334/3.0; BIOL 339/3.0; BIOL 341/3.0

Course Objectives:

At the end of this course students should be able to:

1. Demonstrate an understanding of the central principles of neuroethology
2. Search, read and understand the primary literature in neuroethology
3. Explain, orally and in writing, neural mechanisms that generate behaviour
4. Synthesize information from multiple sources to describe in detail a model system in neuroethology

Learning Hours:

Teaching method		*Average hours per week*	*Number of weeks*	*Total hours*
In-class hours	Lecture	3	12	36
	Seminar			
	Laboratory			
	Tutorial	1.5	12	18
	Practicum			
	Group learning			
	Individual instruction			
Other	Online activity	2	12	24
	Off-campus activity			
	Private study	4	12	48
Total hours on task				126

Course outline:

Introduction to Neuroethology
Neurons and Synapses
Circuitry and Pattern Generation
Sensory Coding
Behavioural Choice
Developmental Plasticity
Learning and Memory
Genetic Constraints
Evolutionary Constraints
Ecological Constraints
Parasites and modelling
Consciousness

Evaluation:

1. Participation in tutorial – 15%
2. Assignment – 15%
3. Quizzes – 10%
4. Seminar Peer Evaluation – 10%
5. Seminar – 15%
6. Final exam – 35%

Assessment Policy:

All assignments must be fully completed and on time. Time penalties will be in effect for the late submission of assignments, unless certified medical documentation is provided. You are responsible for attending all lectures and for reading the specified assignments.
Last day to ADD/DROP – 20th January
Last Date to drop Winter term course without academic penalty – 3rd March

Academic Integrity

Academic integrity is constituted by the five core fundamental values of honesty, trust, fairness, respect and responsibility (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/senateandtrustees/principlespriorities.html).

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/2011-2012-calendar/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, 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.

Copyright of Course Materials

Grading Method:

In this course, some components will be graded using numerical percentage marks. Other components will receive letter grades, which for purposes of calculating your course average will be translated into numerical equivalents using the Faculty of Arts and Science approved scale:

Arts & Science Letter Grade Input Scheme

Assignment mark	Numerical value for calculation of final mark
A+	93
A	87
A-	82
B+	78
B	75
B-	72
C+	68
C	65
C-	62
D+	58
D	55
D-	52
F48 (F+)	48
F24 (F)	24
F0 (0)	0

Your course average will then be converted to a final 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