

# Hormones, Neurochemistry, and Behaviour

## Psychology, Neuroscience & Behaviour 4Y03: January - April, 2012

**Instructor** Dr. Denys deCatanzaro, Professor, Office in PC314  
Office hours: to be announced - *otherwise by appointment only please*  
Telephone: 905-525-9140, extension 23014  
e-mail: decatanz@mcmaster.ca

**TAs** Adam Guzzo, Ph.D. student, e-mail: aguzzo2@gmail.com  
Brent Crawford, M.Sc. student, e-mail: crawfobr@mcmaster.ca

### **Background**

This is a senior, high-level course that will demand regular attendance and active student participation. Students should be in a senior year of an Honours program with a solid background in Biology, Psychology, and Neuroscience.

### **Course Objectives**

We will examine hormonal and neurochemical processes that interact with behaviour in vertebrates, with especial focus on mammalian processes that shed light on human psychology.

### **Textbook and Readings**

Nelson, R.J. (2011). *An Introduction to Behavioral Endocrinology (4<sup>th</sup> edition)*.  
Sunderland MA: Sinauer Associates.

Assigned readings from this textbook are given on the next page.  
Additional material will be made available on-line.

### **Evaluation**

- 1) **Midterm Test #1:** This is worth 25% of the final grade, and will be held in the normal class hour on February 13th. It covers all readings and lectures prior to that date.
- 2) **Essay & Presentation:** Each student should prepare an essay, on a unique specialized topic, structured and pre-approved as described in a separate handout. Each student is expected to make a brief oral presentation during one of the tutorials on their topic and to submit a full written essay. This component is worth 35% of the final grade, with 10% for the oral presentation and 25% for the written paper. The deadline for the written essay is March 26th, but it may be submitted at any time before that date.
- 3) **Class and Tutorial Participation:** Students are encouraged to participate actively in classes and especially in tutorials. Attendance at tutorials will be recorded. The tutorial leader's (and instructor's) appraisal of individual participation (including attendance) will comprise 10% of the final grade.
- 4) **Final Examination:** This will be scheduled by the Registrar's Office, and is worth 30% of the final grade. This will cover the whole course, with some extra emphasis on material since the midterm test.

## **Evaluation (continued)**

Students are responsible for both lecture material and assigned readings, with roughly equal weighting. The midterm test can only be written at the time indicated, so plan to attend. Normally, there can be no make-up tests or special sessions for any student. Students with valid reasons for missing the midterm test or any deadline must follow procedures for the McMaster Student Absence Form if they qualify (once per term and only for components worth <30%), and otherwise must consult the Dean of Studies office for their faculty (*e.g.* Science or Social Science). If the oral presentation is missed, it will be re-scheduled insofar as possible. The essay must be submitted for any credit to be received. Essay deadline extensions will not be granted unless there are legitimate reasons validated by the Dean of Studies office; otherwise, a penalty for lateness will be applied at the instructor's discretion. If the midterm test or any other component is entirely missed for legitimate reasons, the value of that test/component will be added to the weight of the final examination. The test and examination will consist of questions in diverse formats, including true-false, multiple choice, short answer, and essay questions, at the instructor's discretion. Grades will be assigned according to the following convention: 90-100% = A+, 85-89% = A, 80-84% = A-, 77-79% = B+, 73-76% = B, 70-72% = B-, 67-69% = C+, 63-66% = C, 60-62% = C-, 57-59% = D+, 53-56% = D, 50-52% = D-, 0-49% = F. Appeal procedures for test and essay grading are strictly structured, and must be in writing by a specified deadline, as will be explained.

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

Attention is drawn to the Statement on Academic Ethics and the Senate Resolutions on Academic Dishonesty. Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, *e.g.* the grade of zero on a test or assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy (<http://www.mcmaster.ca/univsec/policy/AcademicIntegrity.pdf>).

## **Schedule of Lecture Topics and Readings** (*Lecture dates are approximate*)

**Friday classes from January 27<sup>th</sup> through March 23<sup>rd</sup> (and if necessary March 30<sup>th</sup>) will be tutorial sessions. There will be discussion and student presentations during these sessions as will be announced in class.**

**January 4 - 30: *Introduction. Hormonal and neurochemical systems. Neuroendocrine anatomy. Comparative perspective and evolution. Nutrition, metabolism, receptors, excretion. Chapters 1, 2***

**February 1 - 8: *Sex differences and sexual differentiation. Chapters 3, 4***

**February 13: MIDTERM TEST (Held in class)**

**February 15 - 17: *Male and female reproductive behaviour. Chapters 5, 6***

**Feb. 27 - 29: *Parental behaviour. Chapter 7***

**March 5 - 12: *Affiliative and aggressive behaviour. Chapter 8***

**March 14 - 21: *Homeostasis, biological rhythms, and stress. Chapters 9, 10, 11***

**March 26: ESSAY DEADLINE**

**March 26 - 28: *Hormones, learning, and memory. Chapter 12***

**March 30 - April 4: *Neurochemistry and mood. Psychonutrition. Chapter 13***

**FINAL EXAMINATION SCHEDULED BY THE REGISTRAR**