

Hormones, Neurochemistry, and Behaviour

Psychology, Neuroscience & Behaviour 4Y03: January - April, 2009

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Background

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

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. (2005). *An Introduction to Behavioral Endocrinology (3rd 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 Thursday Feb. 10th. 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 30th, 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. There may be a brief (one-question) quiz at the beginning of each tutorial. The instructor's and tutorial leader's individual appraisal 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 other component of evaluation must consult the Dean of Studies office for their faculty (e.g. Science or Social Science). If (and only if) there is adequate written justification for missing the test, such students will normally have the components of their final grade proportionally reweighted at the instructor's discretion. Essay deadline extensions will not be granted unless there are legitimate reasons validated by the Dean of Studies office. 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 the test and essay are strictly structured, as will be explained by the instructor. 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 an 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, specifically Appendix 3, located at <http://www.mcmaster.ca/univsec/policy/AcademicIntegrity.pdf>.

Schedule of Lecture Topics and Readings

(Lecture dates are approximate)

Thursday classes from January 29th through March 26th, and if necessary April 2nd will be tutorial sessions. There will be discussion and student presentations during these sessions as will be announced.

Jan. 5 - 27: *Introduction. Hormonal and neurochemical systems. Neuroendocrine anatomy. Comparative perspective and evolution. Nutrition, metabolism, receptors, excretion. Chapters 1, 2*

Feb. 2 - 9: *Sex differences and sexual differentiation. Chapters 3, 4*

Feb. 10: MIDTERM TEST (Held in class)

Feb. 23 - 24: *Male and female reproductive behaviour. Chapters 5, 6*

Mar. 2 - 3: *Parental behaviour. Chapter 7*

Mar. 9 - 16: *Affiliative and aggressive behaviour. Chapter 8*

Mar. 17 - 24: *Homeostasis, biological rhythms, and stress. Chapters 9, 10, 11*

Mar. 30: ESSAY DEADLINE

Mar. 30 - 31: *Hormones, learning, and memory. Chapter 12*

Apr. 2 - 7: *Neurochemistry and mood. Psychonutrition. Chapter 13*

FINAL EXAMINATION SCHEDULED BY THE REGISTRAR