

Psychology 3T3-Behavioural Ecology

Time: Tuesday Evening 19:00-22:00 (Term 2)

January 6 – April 7, 2009

Location: [ITB/AB102](#)

Instructor: Dr. Sigal Balshine

Contact Info: Office - PC 304

Email: sigal@mcmaster.ca

Office Hours: Wednesdays 9:30-10:30 by appointment only

Web page:

www.science.mcmaster.ca/psychology/undergraduate/courses/217-3t03e-behavioural-ecology-.html

or

www.science.mcmaster.ca/psychology/undergraduate/courses.html#level3

TAs: Marla Anderson, Julie Marentette, Vicky Mileva and Adam Sparks

Emails: andermv@mcmaster.ca
marentjr@mcmaster.ca
milevavr@mcmaster.ca
sparksam@mcmaster.ca

TA Office Hours (by appointment): - Mondays 14:30-15:30 (Julie)
Tuesdays 17:00 – 19:00 (Marla & Adam)
Wednesdays 10:30-11:30 (Vicky)

Course description and objectives: Behavioural Ecology is a field devoted to understanding animal behaviour in terms of evolution and ecology. In this course, we will study the behaviour of animals, why such behaviour evolves and how behaviour may enable animals to adapt to their environments. As a field, behavioural ecology emerged from a synthesis of many scientific disciplines including ethology, evolutionary biology, psychology, anthropology, zoology and population genetics. Note, this course is NOT centrally concerned with *Homo sapiens*, and will take a comparative approach to the study of animal behaviour. Students seeking a course that focuses on human behaviour are advised to consider taking a course devoted to human evolution and behaviour such as Psychology 3F3 or Anthropology 2E03.

It is your responsibility to ensure that you have met all prerequisites listed in the McMaster calendar for this course. If you lack any prerequisites for this course, the Department may cancel your registration at any time.

Textbook: Animal Behavior (2005, 8th edition). J. Alcock, Sinauer Associates Inc., Sunderland, Massachusetts, (ISBN 0-471-29502-7). There are used versions of the textbook floating around campus. You are advised to buy the textbook as 8 of the 14 chapters are required reading.

Evaluation will be based on:

Grades will be assigned on the basis of (1) a 3-hr registrar-scheduled final exam, worth 50% of your grade, and (2) 3 term tests, to be held in class on January 27, February 24 and March 24. The exam and tests will consist of either long, short answer and/or multiple-choice questions (with some choice). The questions will be based on the both the readings assigned for class and on the material covered in the lectures. Good marks will require thorough familiarity with and comprehension of the content of both the textbook and the lectures.

The best 2 of the term tests will each count for 25%. Term tests will assess knowledge and comprehension of lectures prior to the test night and of readings *up to and including* those assigned for the test night. There will be no "make-up tests". If you miss 1 test without filing some sort of excusing (e.g. medical) documentation with your Dean of Studies, your term mark will be based on the other 2. If you miss 1 (or more) and *do* file documentation with your Dean, then your grade will be based on the test(s) and exam that you completed, with appropriate re-weighting.

If class assignments conflict with a personal religious observance, please notify the course instructor at least three weeks in advance.

The tests and the final exam may include multiple choice and/or short answer and/or essay questions. A deferred final exam will NOT necessarily be of the same format as the April exam. Grades will be computed out of 100 points and converted to a letter grade as follows:

A+ = 100-90, A = 89-85, A- = 84-80,
 B+ = 79-77, B = 76-73, B- = 72-70,
 C+ = 69-67, C = 66-63, C- = 62-60,
 D+ = 59-57, D = 56-53, D- = 52-50,
 F = 49-0

The instructor reserves the right to adjust final marks up or down, on an individual basis, in light of special circumstances and/or the student's total performance in the course.

Course Schedule

| | Class Dates | Topic | Chapters to Read |
|----|--------------------|--|---------------------------|
| 1. | January 6 | Evolution, Natural Selection, Levels of Analysis | 1-2 & Required Reading |
| 2. | January 13 | Optimality & Behaviour | 6, 7 |
| 3. | January 20 | Sex and Mating Systems | 11 |
| 4. | January 27 | Exam 1 & Sexual Selection 1. Mating Competition | 10 |
| 5. | February 3 | Sexual Selection 2. Mate Choice | 10 |
| 6. | February 10 | Sexual Conflict & Sex Ratio Allocation | Required readings |
| 7. | February 17 | Reading week – No Class! | |

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|-----|-------------|--|-------------------|
| 8. | February 24 | Exam 2 & Parental Care | 12 |
| 9. | March 3 | Parent-Offspring Conflict | Required reading |
| 10. | March 10 | Sibling Rivalry | 12 |
| 11. | March 17 | Kinship & Kin Recognition | Required readings |
| 12. | March 24 | Exam 3 & Cooperation in Social Groups | 13 |
| 13. | March 31 | Conflict in Social Groups | 13 |
| 14. | April 7 | Animal Behaviour in Action | |

Assigned readings will be available as *.pdf* files on the class webpage. Lecture notes will also be found there, and will in the future be available before the class. I will get the notes up by 4:00 pm each Tuesday afternoon. Feedback on tests and other course-related materials will also be placed on the Psych 3T3 site.

* Chapters 3-5 from Alcock's Animal Behaviour 8th Edition Text Book are also highly recommended. They will be considered supplementary material and will not be tested.

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/senate/academic/ac_integrity.htm

The following illustrates only two forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
2. Copying or using unauthorized aids in tests and examinations.

Required Readings

1. Reading for January 6th (Evolution)

Grant PR & Grant BR 2006. Evolution of character displacement in Darwin's finches. *Science* 313: 224-226.

2. Readings for February 10th (Sexual Conflict & Sex Ratio Allocation)

Chapman T, Arnqvist GR, Bangham J & Rowe L 2003. Sexual Conflict & Sex Ratio Allocation. *Trends in Ecology and Evolution* 18, 1: 41-47.

Ellegren H, Gustafsson L & Sheldon BC 1996. Sex ratio adjustment in relation to paternal attractiveness in a wild bird population. *Proc. Natl. Acad. Sci. USA* 93: 11723-11728.

3. Reading for March 3rd (Parent-offspring conflict)

Kilner, R. & Johnstone, R. A. (1997) Begging the question: are offspring solicitation behaviours signals of need? *Trends in Ecology and Evolution* 12: 11-15

Kilner, R. (1997) Mouth colour is a reliable signal of need in begging canary nestlings. *Proceedings of the Royal Society, Series B* 264: 963-968

4. Readings for March 17th (Kinship and Kin Recognition)

Sherman PW 1977. Nepotism and the evolution of alarm calls. *Science* 197: 1246-1253.

Mateo J.M. & Johnston, R.E. 2000. Kin Recognition and the 'armpit effect': evidence of self-referent phenotype matching. *Proceedings of the Royal Society B*. 267: 695-700