

BEHAVIOURAL ECOLOGY

Psychology 3T03

Time: Monday and Wednesday 14:30-15:20; Friday 16:30-17:20

January 6 – April 8, 2014 (Term 2)

Location: ITB-137

Instructor: Dr. Sigal Balshine

Contact Info: Office - PC 309

Email: sigal@mcmaster.ca

Office Hours: 15:30-16:30 on Wednesdays, please make an appointment

Web page: Psych3T03 on Avenue to Learn

Course Email: psych3t3@gmail.com

Note: Please contact us primarily using this course email. Use this email to ask questions (these will be answered by email) or to set up appointments to meet up with your TAs in their office hours.

TAs:	Blake Anderson	anderbb@mcmaster.ca
	Aneesh Bose	boseap@mcmaster.ca
	Kasia Pisanski	pisanska@mcmaster.ca

TA Office Hours (by appointment):	Mondays	15:30-16:30 (Blake)
	Wednesdays	13:30-14:30 (Aneesh)
	Friday	15:30-16:30 (Kasia)

Textbook: Animal Behavior (2013, 10th edition).

J. Alcock, Sinauer Associates Inc., Sunderland, Massachusetts, (ISBN 13: 978-0878939664).

Objectives: Behavioural Ecology is a field devoted to understanding animal behaviour in terms of evolution and ecology. The aim of this course is to further build on the theoretical foundations of the 2nd year Animal Behaviour and Evolution courses Psych 2TT3 and PNB 2XC3. In this course we will cover some basic but mostly advanced behavioural ecology theory using empirical examples and focusing on key research findings. During the course we will examine various aspects of animal behaviour and consider why such behaviour evolves, and how this behaviour may enable animals to adapt to their environments. By the end of the term students should be able to: understand and describe many important theories, empirical studies, and be able to critically analyze and discuss the research and issues of this discipline. 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 mainly focus on human behaviour are advised to consider taking a course devoted to human evolution and behaviour such as Psychology 3F03 or Anthropology 2E03.

Evaluation: Grades will be based on 2 midterm exams, 2 in-class workshops and a 3-hr registrar-scheduled final exam. Each workshop is worth 2% of your final grade. Because each workshop is interactive **no make up is possible**. Each of the two in-class midterms (**February 7th**, and **March 14th**) will be worth 23% of your final mark. The final exam will be worth 50% of your final grade. The exam and midterms will consist of long (essay), short answer (definitions, short phrases, or paragraphs) and/or multiple-choice/true false questions. The questions will be based on 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 covered in the textbook, readings, and lectures. Please bring a pencil, ruler and calculator to each exam. NOTE: If any exam does not take place on the scheduled date due to weather, facilities, or any other unforeseen circumstance, THE EXAM WILL TAKE PLACE AT OUR NEXT MEETING.

McMaster's Grading Scale:

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

Term tests will assess knowledge and comprehension of lectures prior to the test and of readings *up to and including* those assigned for the test. There will be no "make-up tests". If you miss 1 exam, please fill out the excusing (e.g., medical) documentation with your Dean of Studies, and your term mark will be based on the other exam with appropriate re-weighting.

Policy Reminder: 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.

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. 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.

Please note the Statement on Academic Ethics and the Senate Resolutions on Academic Dishonesty as found in the Senate Policy Statements distributed at registration and available in the Senate Office. Any student who infringes one of these resolutions will be treated according to the published policy. 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, at <http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf>

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

Tentative Course Schedule

Assigned readings will be available as *.pdf* files on the class webpage in AVENUE. Lecture notes will also be found there, and will be available in the morning before the class. I will try to get the notes up a few hours before class.

Feedback on tests and other course-related materials will also be placed on the Psych 3T03 site hosted by AVENUE to Learn.

Week	Dates	Topics	Readings
1	January 6 January 8 January 10	Introduction Evolution & Natural Selection Levels of Analysis and Pillars	Assigned Reading 1 Chp 1, 2 & 10
2	January 13 January 15 January 17	Evolution of Sex Sex Allocation Sexual Selection & Pair Dynamics	Assigned Reading 2 Assigned Reading 3 Chp. 7
3	January 20 January 22 January 24	Mating Competition Alternative Mating Strategies Sperm Competition	Chp. 7 Chp. 7 Assigned Reading 4
4	January 27 January 29 January 31	Mate Choice Cryptic Female Choice Workshop 1.	Chp. 7 Assigned Reading 5
5	February 3 February 5 February 7	Sexual Conflict Mating System Evolution Midterm 1.	Assigned Reading 6 Chp. 8
6	February 10 February 12 February 14	Family Dynamics Parental Care (part 1) Parental Care (part 2)	Chp 9 Chp 9 Chp 9
7	February 17 February 19 February 21	READING WEEK No Classes	
8	February 24 February 26 February 28	Parental-Offspring Conflict Parent Offspring Conflict Sibling Rivalry (part 1)	Chp 9 Assigned Reading 7 Assigned Reading 8
9	March 3 March 5 March 7	Sibling Rivalry (part 2) Kinship & Kin Recognition Workshop 2.	Chp. 2 Chp. 2, 3 & 9

10	March 10 March 12 March 14	Living in Groups Conflict in Social Groups Midterm 2.	Chp. 3 & 4 Assigned Reading 9
11	March 17 March 19 March 21	Cooperation 1	Chp. 3, 4
12	March 24 March 26 March 28	Cooperation 2	Chp. 3 & 4 Assigned Reading 10
13	March 31 April 2 April 4	Class Debate: The Future of Zoos Local & Global Change & Animal Behaviour Behaviour & Conservation	Assigned Reading 11 Assigned Reading 12
14	April 7	Class Hike	

Required Readings

1. Reading for January 8th (Evolution)

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

2. Reading for January 13th (Evolution of Sex)

Otto S.P. & Gerstein AC 2006.
Why have sex? The population genetics of sex and recombination
Biochemical Society Transactions 34: 519-522

3. Reading for January 15th (Sex Ratio Allocation)

Adaptive Secondary Sex Ratio Adjustments via Sex-Specific Infanticide in a Bird.
Heinsohn R, Langmore, N, Cockburn A & Kokko H 2011.
Current Biology, 21: 744-1747

4. Reading for January 24th (Sperm Competition)

Pilastro A, Scaggiante M & Rasotto MB 2002.
Individual adjustment of sperm expenditure accords with sperm competition theory
Proceedings of the National Academy of Science 99(15): 9913-9915

5. Reading for January 29th (Cryptic Female Choice)

Pizzari T & Birkhead TR 2000.
Female feral fowl eject sperm of subdominant males.
Nature 405: 787-789.

6. Reading for February 3rd (Sexual Conflict)

Chapman T, Arnqvist G, Bangham J & Rowe L 2003.
Sexual conflict
Trends in Ecology and Evolution 12: 255-259.

7. Readings for Feb 26th (Sibling Rivalry)

Mock, DW 1984.
Siblicidal aggression and resource monopolization in birds.
Science 225: 731–733.

8. Readings for Feb 28st (Sibling Rivalry)

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.

9. Reading for March 12th (Conflict in Social Groups)

Clutton-Brock TH, Brotherton PNM, Russell AF, O'Riain MJ, Gaynor D, Kansky R, Griffin A, Manser M, Sharpe L, McIlrath GM, Small T, Moss A & Monfort S 2001.
Cooperation, conflict and concession in meerkat groups.
Science 291(5503): 478-481.

10. Reading for March 26th (Cooperation)

Komdeur J, Huffstadt A, Prast W, Castle G, Mileto R & Wattel J. 1995.
Transfer experiments of Seychelles warblers to new islands: changes in dispersal and helping behaviour.
Animal Behaviour 49: 695-708.

11. Reading for March 31st (Should we have zoos?)

Swaigood RR & Shepherdson DJ 2005.
Scientific Approaches to Enrichment and Stereotypes in Zoo Animals: What's Been Done and Where Should We Go Next?
Zoo Biology 24:499–518

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12. Reading for April 2nd (Behaviour, Conservation and Global Change)

Bell A, 2004.

An endocrine disrupter increases growth and risky behaviour in three-spined sticklebacks.
Hormones and Behaviour 45: 108-114.