

2015 Syllabus

BIO D53: Special Topics in Behavioural Ecology



Prof. Maydianne Andrade



Course Overview

The field of Behavioural Ecology uses ecological and evolutionary perspectives to produce a predictive framework for understanding the evolution and maintenance of the behaviour of animals (and sometimes, of plants) in their natural context. We will consider this field broadly as the study of behaviour, the morphology, life history and physiological traits underlying adaptive behaviour, and the effects of behaviour on population-level phenomena. This course will introduce you to the higher-level reasoning, empirical and theoretical research that underlies modern Behavioural Ecology. In this course we will emphasize scientific approaches to information use in a way that is applicable to many different fields of inquiry.

Learning Objectives

In this course you will:

- 1) develop your ability to identify, answer, and communicate questions in any area of scientific enquiry.
- 2) develop your ability to access, evaluate, and interpret factual information from a variety of sources, and use information to make inferences in the context of hypothesis testing.
- 3) develop your ability to read and interpret papers from the primary literature.
- 4) learn the methodologies & approaches used to answer questions in Behavioural ecology
- 5) understand theory underlying selected areas of Behavioural Ecology

GENERALIZABLE
COMPETENCIES

SUBJECT-SPECIFIC
KNOWLEDGE

In this course you will **NOT** be required to memorize facts, rather you will learn theory and how to tackle problems in the way an expert in this field would...by accessing relevant information (new data acquisition or the published literature) and interpreting it. You will communicate your understanding to different audiences using different vehicles.

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Course Instructors

Office: SW551

Professor: Maydianne Andrade

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TA: Sheena Fry

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Course Materials

All course information & communication is via Blackboard.



Lecture/Tutorials Location/Time

AA208 (except where otherwise noted on the schedule)

- Mondays 12:00 – 14:00
- Fridays 12:00 – 14:00
-

Office hours: Thursdays 1pm to 2pm, AC254 (library study room)

Course homepage. The course syllabus, lecture slides, and assignment rubrics will be posted on Blackboard.

Class discussion board. This is an excellent way to connect with your classmates and seek input on your understanding of class material. I will comment on discussions or questions once per week. As always, inclusive and civil discussion is the required standard. Disagreements are fine, personal attacks are not.

Readings: There is no required text for this course. You may find it helpful to consult reference texts on occasion. Some useful texts are available on course reserves in the library:

- **Behavioural Ecology.** 2008. Danchin, Giraldeau & Cezilly
- **Evolutionary Behavioral Ecology.** 2010. Westneat & Fox
- **An Introduction to Behavioural Ecology, 4th Edition.** 2012. Davies, Krebs & West. ISBN: 978-1-4051-1416-5

Primary Literature Papers. Citation information/DOI's for the main papers relevant to each lecture will be posted on Blackboard on Fridays. Read the main paper prior to Monday's lecture!

Lecture slides will be posted on the course homepage as pdf files by the day **after** the lecture to allow you to fill in details or refer to figures/tables/references. It is your responsibility to take notes, engage with the material as you hear it, and ask questions to clarify whenever it would help your understanding.

Research Help & Resources: University of Toronto Scarborough Library

Subject librarian: Research help is available by phone, e-mail, or in-person in the Library. Contact the Biology subject librarian for in-depth help: Angela Hamilton (ahamilton@utsc.utoronto.ca; 416-208-5174).

The BIOD53 Library guide: <http://guides.library.utoronto.ca/biod53> includes a range of useful tools and FAQ's, including a guide to online tools, search-engines, tips for handling scientific information, and tools useful for assignments in this course.

RefWorks. We will be making use of this free, online reference management-software for creating a collaborative annotated bibliography. Please ensure you have an account, and know your login information,

Course Highlights

How do I do THAT?' Workshops

- introduce key tools and approaches to support your work on assignments
- held in computer labs
- occur throughout term

Courtship & Competition lab

- formulate and test your own sexual selection hypotheses in a hands-on lab using spiders

Behaviour @ the Toronto Zoo

- hear from curators about the importance of behaviour in conservation, captive breeding and animal welfare
- 'behind the scenes' visit to animal exhibits

Open-book final exam

- emphasis on *using* rather than *memorizing* information

before the tutorial on Friday Jan 9. If you need guidance, go to the [BIOD53 Library guide](#) and click on '[Refworks](#)' under 'Contents'.

Course Format

'Foundation lectures' provide background and the theoretical framework underlying a given area of focus.

Usually 1 – 2hr sessions on Mondays, these sessions are intended to be interactive, with questions, discussion, and challenges encouraged.

Flip it! There will be two weeks (one in February, one in March) when introductory material will be provided as narrated slideshows or videos that must be viewed at home prior to attending class. Classes that week will focus entirely on working through applications (in a behaviour lab and in a visit to the Toronto Zoo).

Lecture Topics. A tentative schedule of topics is provided [in this document](#) (p. 9). Associated readings for the first few weeks will be posted on Blackboard and updated as the course progresses. This will allow some flexibility to follow up on topics that may emerge from class discussions, or recently published papers.

Tutorials. Tutorial sessions are discussion-oriented and will include: student led-seminar presentations based on primary-literature topics introduced in foundation lectures; real-time peer review; and special tutorial sessions ('How do I do THAT?') aimed at providing timely aid for completing course assignments.

How do I do THAT? These classes will be held in a computer lab (see schedule) and will function as facilitated work sessions during which you will receive information on tools and approaches that will help with your assignments. You will also have time during these sessions to make progress on your assignments with feedback from us and your peers.

- (1) Digital scholarship & the library
- (2) 'Talk boot camp'
- (3) Research papers: data and inference
- (4) Persuasive Public Service Announcements (PSA's)

Practicals.

1. ***Courtship & competition lab.*** You and a collaborator will be helped to conduct a behavioural experiment utilizing spiders from my research lab. The class will devise hypotheses and tests that will be implemented during the lab period. You will write a research paper based on a larger dataset which includes the data you collect during this session. *Attendance is Mandatory.*

2. ***Behavioural Ecology & conservation at the Toronto Zoo.*** Friday March 13, noon to 3pm. At this visit to the Toronto Zoo we will receive a 'behind the scenes' visit to animal exhibits, meet and talk with an zoo-keeper and listen to a curator discuss the importance of behaviour in captive breeding/animal welfare programs.

Cost: \$25 - \$28/person (cost depends on the number of attendees, will be confirmed 2 weeks before the trip). This covers admission, behind the scenes access and talks. Students are welcome to stay at the zoo for the remainder of the day if they choose. *Attendance is strongly encouraged, but not mandatory.*

Evaluation

Item	Value	Due date
Participation	5%	Every class
Student-led seminar (1)	10%	As per blackboard sign-up
Informed Responder (2)	10% (5% each)	As per blackboard sign-up
Annotated Bibliography entry (3)	12% (4% each)	Due the week following the due date when your seminar or informed responder role is scheduled
Research Paper: Courtship/competition	(Total: 28%)	Friday February 6 (SW240)
• Quiz	2%	Friday January 30
• Draft	6%	Monday February 23, 11am
• Real-time Peer Review	1% + 4%	Friday February 27
• Final paper	15%	Friday March 6
Role of Behavioural Ecology in Zoos	(Total: 10%)	Zoo visit: Friday March 13, noon – 3pm
• Thought paragraph	2%	Monday March 16, 11am
• Public service announcement	8%	Monday April 6, 11am
Open-book Final exam	25%	TBA, exam week

Participation (5%)

Prepared attendance and participation in all classes is mandatory. A small class is nice because of the interaction it allows, but a rewarding experience depends on your full engagement. Your participation score will decrease proportionately with the number of classes in which you do not participate. You may miss 3 classes without penalty if a valid excuse (documentation) is provided. Valid excuses are as outlined in the university's policy for missing exams and include illness, family crisis, etc. If you must miss more than 3 classes, contact me to agree on alternative arrangements for this portion of your mark.

I value input from students with different strengths. If active participation in oral discussions is difficult for you, contact me directly to explore other ways you can contribute to class each week and retain your participation mark.

Discussions in this class may include topics that are politically or emotionally charged for some people. Students are reminded that all interactions (in class and online) must be consistent with the [University's Code of Student Conduct](#). While all academic inquiries and discussion are welcome, only respectful discourse will be tolerated.

Final Exam

There is no midterm in this course. The final exam will be comprehensive and include short-answer and essay-style questions. You will complete your final exam on a computer with full access to any and all digital tools to aid exam completion (including the class's annotated bibliography). Final exams will be submitted via Turnitin.com with the standard expectations for original writing. If you feel that completing your exam on a computer will be a handicap, you may request that you be allowed to submit your exam on paper.

Assignments

Here I provide a brief overview of the required assignments in this class. Detailed rubrics, including marking schemes, will be provided on Blackboard.

Student-led seminar (1 presentation)

Once this term, you will lead a class seminar and discussion session based on a primary literature paper (i.e., a first-hand report of a scientific study). A list of potential papers, related to lecture topics, will be provided. You may base your presentation on this paper, or choose another relevant paper. Depending on course enrolment, this assignment may be completed in pairs or teams. This aspect of the presentation will be determined in the first week of classes.

Citation information/DOI for the paper to be presented must be emailed to Prof Andrade at least 1 week prior to the presentation. If you choose to find your own paper, you must have that approved by me at least 1 week prior to your presentation.

Presentations should be approximately 20 - 30 min long, and should be designed to encourage questions and discussion. Discussion and /or Q&A should last **approximately 5-10 min in addition to your presentation**.

and should have three main goals:

- (1) bring the whole class 'up to speed' on the context, hypotheses, procedures and conclusions of the study and study organism. This will require:
 - a. filling in background information not likely to be common knowledge
 - b. consulting papers other than the main one being presented
- (2) highlight where the paper links to theory and general principals of Behavioural Ecology.

Your successful presentation will be supported with a tutorial workshop and 'boot camp' exercise. Also see tips from the Centre for Teaching and Learning: <http://ctl.utsc.utoronto.ca/ac/>.

Informed Responder (2 commentaries)

Twice this term, you will sign up to be an 'informed responder' for a student-led seminar. An 'informed responder' is expected to engage in the material more deeply than other audience members, and **devise 1 or 2 questions or commentaries** on the paper that is being presented. The questions/commentaries should be a **total of 100-400 words long and must be submitted online by 11am on the day**

Did you know?

The Wildscreen Arkive is a great source for Images and videos of animal behaviour available for fair use in presentations:

www.Arkive.org



of the student seminar. Informed responders should be prepared to use their commentaries to initiate discussion following the student-led seminar presentation.

General Audience responsibilities:

Everyone is expected to read the papers that will be presented in tutorial prior to class and be prepared to ask questions and participate in discussions during class. The role of the audience is to provide an attentive, receptive, but critical response to the material presented.

Collaborative Annotated Bibliography (3 entries)

The class will **collaborate** to produce an annotated bibliography which will be a permanent record of the primary literature papers that are discussed over the course of the term, and the relevance of these papers to broader concepts in the course. The annotated bibliography should be a useful source of information when you write your open-book final exam. More information will be given in the January 9th tutorial, at which the UTSC Biology Subject Librarian (Angela Hamilton) will outline how to construct an annotated bibliography using RefWorks (online and free via the library), and how to access a class account.

In preparation for this class, please register for your [free RefWorks account via the library website](#).

Each student will contribute THREE annotated entries for the class bibliography:

- (1) Each time you are the *informed responder* (2): submit an entry based on the paper that is the subject of the talk to which you are assigned.
- (2) When you are the *seminar leader*: submit an entry based on a paper that you consulted to inform your student-led seminar. This must **NOT** be the paper that is the main subject of your talk.

Research Paper: Courtship/competition

You will collect data on courtship and competition in live spiders. Prior to the lab, you and a collaborator will determine hypotheses and tests that are tractable in a lab-based system of spider behaviour (spiders are the real-life subjects of much of [my own research](#)). You and your collaborator will then 'pitch' your idea to the class. The class will reach consensus on (a maximum of) two hypotheses. These will be tested in a lab in which you will work individually to record relevant data. Compiled and analyzed data will be provided to you as the basis for a research paper.

Quiz. A brief quiz will focus on preparatory materials assigned for review prior to the hypothesis-generating session.

Research Paper. You will work write an abbreviated research paper based on the data compiled from the lab. This will be a formal research paper, but will omit the methods section. More details will be provided on Blackboard. Your successful completion of this assignment will be supported with three tutorial sessions/workshops. Submission of a draft paper is mandatory, and this will be used to get feedback from peers.

Real-time Peer review. Peer review is an important part of producing any written document. Your draft research paper will be reviewed by a peer during an interactive workshop session in a computer lab. You will first provide a

Need more help?

You can attend additional workshops or schedule private consultations:

@ [The Writing Centre](#)

You can drop in to:

['Just in Time'](#) research help sessions @ UTSC Library

brief written overview of your comments/critiques (1%), then you and your peer will work together to improve both papers (45 min. spent on each paper). The balance of your peer review mark (4%) will be based on how much improvement there is in your peer's paper by the end of the review session.

Role of Behavioural Ecology in Zoos

The research and conservation mission of the Toronto Zoo depends on a detailed understanding of how animal behaviour is affected by captivity, breeding programs, stress, diet, and a number of other factors. The class will visit the zoo and learn first-hand about how some of these issues are applied, or are problematic, in this context.

Thought Paragraph

You will produce an informal, free-form, reflective commentary on your thoughts/reaction following our visit to the zoo. You may choose to focus on key insights from the visit and how you think the visit links to course material. This can be a maximum of 1000 words, and does not require references.

Public Service Announcement

Why is it important to understand basic aspects of behaviour? Can you convince the zoo-going public that basic research is important? **You and three or four collaborators** will design a public service announcement about the importance of behaviour research for animal welfare/captive breeding/conservation and present it to the class. Your PSA may be a webpage (one page only though you may have supplementary information available as links) and/or short (max. 2 minute) video. For examples, see: [Time Magazines top 10 PSA's \(videos\)](#) and [Vintage PSA posters about healthy eating](#). More details will be given when the assignment rubric is circulated later in the term.

Course Policies & Administration

AccessAbility

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services as soon as possible. AccessAbility Services staff (located in Rm SW302, Science Wing) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations 416-287-7560 or email ability@utsc.utoronto.ca. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

Academic honesty & plagiarism

Academic integrity is one of the cornerstones of the University of Toronto. It is critically important both to maintain our community which honours the values of honesty, trust, respect, fairness and responsibility and to protect you, the students within this community, and the value of the degree towards which you are all working so diligently.

According to Section B of the University of Toronto's [Code of Behaviour on Academic Matters](#), which all students are expected to know and respect, it is an offence for students:

- To use someone else's ideas or words in their own work without acknowledging that those ideas/words are not their own with a citation and quotation marks, i.e. to commit plagiarism;
- To include false, misleading or concocted citations in their work
- To include copyrighted images without permission or attribution

There are other offences covered under the Code, but these are by far the most common ones that are likely to apply in this course. Please respect these rules and the values which they protect.

Turnitin.com

Normally, students will be required to submit all assignments and their final exam to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their work to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com website. **To hand in your assignments**, you will need a Turnitin.com account, [see instructions online](#) and note that our **Class ID = '9081427'** and **Enrollment password = 'Behave!'**

If you are not sure what constitutes plagiarism, see:

www.utoronto.ca/academicintegrity or www.writing.utoronto.ca/advice/using-sources

or talk to Prof Andrade, Sheena, or visit the Writing Centre

Missed final exam

Students who miss the final exam must [petition the Registrar](#).

Late assignments

Students who are unable to submit an assignment on time due to illness must notify me by email within 3 working days of the due date. Students must then present to me a completed [UTSC medical certificate](#) which confirms their illness, and medical attention, at the time specified. Students who contract a flu-like illness are advised by University of Toronto policy to avoid attendance during their illness, although they must still contact me to declare that they have contracted a flu-like illness, even if medical attention is not sought. If medical excuses are validated, no late-penalty will be assessed for the assignment. Note however that I will require submission of earlier draft versions of the assignment, as illness on the due date is not sufficient excuse for a lack of progress on the assignment.

Contact

The best ways to contact me are during office hours (Thursdays, 1pm – 2pm, AC254), during/after class, and via the course discussion board. The course website will include a discussion board for student interaction, and I will comment on ongoing threads once each week.

My response time to email is relatively slow, and if I receive a course content question that is likely to be of general interest to the class, I will post and answer it on the discussion board. Please try to reserve email contact for course administration issues (e.g., illness, missed classes).

This course is Green!

This course is recognized as a [UTSC Green Course](#) which has steps in place to reduce the amount of course-generated paper.

Join me in committing to minimizing the use of paper in this course:

- think twice before printing lecture slides or papers
- use recycled paper where possible
- print double-sided or with multiple slides per page if you must print!



Tentative Schedule

(meetings in AA208, noon to 2pm unless otherwise noted)

Date	Monday 12-2pm	Date	Friday 12 – 2pm
January 5	Intro to Behavioural Ecology	Jan 9	How do I do THAT? Digital research tools with Angela Meet in BV469
January 12	Plasticity, constraints & personalities	Jan 16	How do I do THAT? Talk Boot camp Meet in BV469
January 19	Information & telling the future (Communication)	Jan 23	Student-led seminars 1: <i>Topics: Communication/Information OR Plasticity/ constraints / personalities</i>
January 26	Sexual selection	Jan 30	Flip it! Quiz & Hypothesis exercise
February 2	Student-led seminars 2: <i>Topics: Sexual selection OR Communication/Information</i>	Feb 6	Competition & courtship lab Meet in SW240
February 9	Student-led seminars 3: <i>Topics: Free-form</i>	Feb 13	How do I do THAT? Research Paper Boot Camp Meet in BV469
READING WEEK (Feb 16 – 21)			
Feb 23	Research paper draft 1 due: 11am Workshop: Research Papers Meet in BV466	Feb 27	Peer review notes due: 11am Workshop: Real-time peer review Research Paper Draft 2 due: 2pm Meet in BV469
March 2	Behavioural ecology, conservation & animal welfare I	March 6	Final Research paper due: 10am Behavioural ecology, conservation & animal welfare II
March 9	Student-led seminars 4: <i>Topics: Behavioural Ecology, conservation & animal welfare</i>	March 13	Flip it! Zoo field trip
March 16	<i>Thought paragraphs due: 10am</i> How do I do THAT? PSA workshop Meet in BV466	March 20	Student-led seminars 5: <i>Topics: Free-form</i>
March 30	Course review session	Feb 3	<i>Good Friday Holiday</i>
Mon. April 6	PSA due: 11am Presentations to class	April 7 - 9	<i>Study Break</i>
April 10 - 25	Open-book final exam		

