BIOC62H 2014
The Role of Zoos in Conservation

Lecturers:	Staff of the Toronto Zoo
Course coordinator:	Dr. Katharina Braeutigam (katharina.braeutigam@utoronto.ca)
Tutorial assistant:	Mr. Andrew Masson (amasson@uvm.edu)
Lectures:	Wednesdays 11:00 am - 1:00 pm in SW128
Tutorials:	Thursdays 4:00 pm - 6:00 pm in AA209 Fridays 10:00 am - noon in AA205
Office hours:	By appointment
Exclusions:	None
Prerequisites:	BIOB50H (Ecology) & BIOB51H (Evolutionary Biology)
Required text:	Hosey G, Melfi V, and Pankhurst S. 2013. *Zoo Animals: Behaviour, Management & Welfare*. Oxford University Press, Oxford. 696 pp. ISBN 978-0199693528

Course Description

A lecture/discussion course that examines the role of zoos in conservation, with an emphasis on contemporary topics such as: the involvement of zoos in *in situ* and *ex situ* conservation; captive breeding and re-introduction of species; new technologies to assist reproduction in wild populations; the importance of nutrition and behavioural enrichment in captive animals; zoos and animal health and welfare; zoos and public involvement/education; and the role of zoos in wildlife research.

Evaluation

Midterm test **25%**
(on lecture and tutorial materials, including required readings, up to test date)

Essay **25%**
(due February 24th at noon. Penalty for late submission is 10% per day of maximum mark available for assignment)

Tutorial participation **15%**

Final exam **35%**
(cumulative, on all lecture/tutorial materials, but with emphasis on post-midterm material)

Essay

The existence of zoos is often controversially discussed in the public. Zoos counteract criticism by stating that: Zoos play important roles in conservation efforts and are not exclusively showcases for animals**.** What do you think? Consider a broader picture, *e.g*. zoo concepts, cost-benefit of programs, scientifically measurable success of conservation efforts (sustainable population size and genetics etc.), focus on locally or globally endangered species, flagship species.

Your essay should be a critical examination of the topic, and should make use of specific examples of animals and/or plants to support your critique. Your essay can focus on a specific animal to support your position, if you would find this easier. Regardless, the essay must have the structure of a peer-reviewed position paper (*i.e.*, published in Trends in Ecology & Evolution), and, as such, must properly reference peer-reviewed literature. Maximum length is 15 pages, double-spaced, including tables and figures. More details on the essay will be provided on Blackboard. The **submission deadline is 12:00 noon, on February 24th, 2014 (in Room SW567).**

Required reading & background reading

Lecture readings are provided below. You are expected to read this material before the lecture and/or tutorial indicated. Knowledge of the textbook material will be expected for the mid-term and final examinations. The readings will comprise chapters from the following text, which is available from the UTSC Bookstore.

- Hosey G, Melfi V, and Pankhurst S. 2013. *Zoo Animals: Behaviour, Management & Welfare*. Oxford University Press, Oxford. 696 pp. ISBN 978-0199693528

Background readings are provided to supplement course material. This material will not be included on mid-terms or exams. These sources include the following list, and other material may be posted on the intranet.

- *Toronto Zoo Conservation, Education and Research Activities Report 2011-2012* (Zoo will provide copies for all students enrolled)
- Toronto Zoo - www.torontozoo.com/conservation
- Association and Zoos and Aquariums - www.aza.org
- World Association of Zoos and Aquariums - www.waza.org
- International Union for Conservation of nature:
  https://www.iucn.org & http://www.iucnredlist.org

Lecture Schedule

(1) Wednesday, January 8th 2014
Introduction, including course details
Lecturers: Dr. Katharina Braeutigam UTSC; Andrew Masson UTSC
Required reading: Chapters 1, 2 & 10

(2) Wednesday, January 15th 2014
The "visible" zoo: Visit to the Toronto Zoo.
Required reading: Chapters 5 & 6

(3) Wednesday, January 22nd 2014
Conservation, Education and Research at the Toronto Zoo - an overview.
Lecturer: Dr. William Rapley, Executive Director, Conservation, Education and Wildlife, Toronto Zoo, and Adjunct Faculty Member, UTSC

Recommended Reading: Toronto Zoo Conservation, Education, and Research Activities Report 2011-2012
Required reading: Chapters 3 & 10 (in chapter 3 focus on "international", not UK)

(4) Wednesday, January 29th 2014
Biodiversity, Conservation, Selection of Zoo Collections.
Lecturers: Bob Johnson, Curator of Reptiles and Amphibians, Toronto Zoo; Dr. Kevin Kerr, Curator of Birds & Invertebrates, Toronto Zoo
Required reading: Chapter 10
Recommended Reading: CBD Global Biodiversity Outlook3

(5) Wednesday, February 5th 2014
Aquatic conservation challenges and success.
Lecturer: Cindy Lee, Curator of Fishes and Marine Invertebrates, Toronto Zoo
Required reading: Chapters 10 & 14

(6) Wednesday, February 12th 2014
Case studies in amphibian and reptile conservation: integration of biology, culture and community based social marketing.
Lecturer: Bob Johnson, Curator of Reptiles and Amphibians, Toronto Zoo
Required reading: Chapter 14

Reading Week

(7) Wednesday, February 26th 2014
Captive breeding and recovery of two critically endangered mammals at the Toronto Zoo.
Lecturer: Maria Franke, Curator of Mammals, Toronto Zoo
Required reading: Chapters 4 & 9

(8) Wednesday, March 5th 2014
The conservation challenges facing botanical gardens.
Lecturer: Dr. David Galbraith, Head of Science, Royal Botanical Gardens

(9) Wednesday, March 12th 2014
Animal health in zoo collections and conservation programs.
Lecturer: Dr. Graham Crawshaw, Senior Veterinarian, Toronto Zoo
Required reading: Chapter 11

(10) Wednesday, March 19th 2014
Reproductive management in zoo species.
Lecturer: Dr. Gabriela Mastromonaco, Curator of Reproductive Programs & Research, Toronto Zoo
Required reading: Chapters 7 & 9

(11) Wednesday, March 26th 2014
Zoo nutrition programs, feeding of browse to zoo animals.

Lecturer: Jaap Wensvoort, Nutritionist, Toronto Zoo
Required reading: Chapters 8 & 12

(12) Wednesday, April 2nd 2014
Education programming in zoos: inspiring action and changing behaviours.
Lecturers: Heather House, Manager of Education, Toronto Zoo;
Steve Jones, Education Programs Coordinator, Toronto Zoo
Required reading: Chapters 13 & 15

Tutorials

There will not be a tutorial every week, but it is expected that students will use the tutorial time when there is not a tutorial to read the required readings. Each tutorial that is scheduled will run for up to 2 hours. The tutorial will have a structured format in which ideas, opinions, data, and interpretation of the topic can be aired. Students will be divided into groups, and group members will each present group thinking throughout the term. Each student is expected to contribute, and therefore will be expected to have (minimally) read the required readings. Marks will be assigned for participation in tutorials.

Tutorial Schedule

I **The "visible" versus the "invisible" zoo. Compare and contrast the facets of zoo operations, using the Toronto Zoo as a case study.**
Session 1: Thursday, January 30th from 4:00-6:00 pm in AA 209
Session 2: Friday, January 31st from 10:00-noon in AA205
Required reading: Chapters 5 & 6

II **Biodiversity, conservation, and the role of zoos**
Session 1: Thursday, February 13th from 4:00-6:00 pm in AA 209
Session 2: Friday, February 14th from 10:00-noon in AA205
Required reading: Chapter 10, Toronto Zoo Conservation and Education Activities Report 2011-2012
Required assignment: The tutorial will focus on what we understand by biodiversity, its classification and value. Species of interest will be used to illustrate these concepts. Focus will be on species currently included in zoo conservation programs. You and your group will present two taxonomic groups with representative species. This will also allow you to incorporate what you've learned so far.

Reading week

III **Ethical debate tutorial: based on the balance between conservation and animal welfare**
Session 1: Thursday, March 6h from 4:00-6:00 pm in AA 209
Session 2: Friday, March 7th from 10:00-noon in AA205

Required reading: Chapters 7 & 10
Required assignment: You and your group should prepare a 5 minute debate around the following provocative statement: "Zoos support animal conservation at the expense of animal welfare". You and your group should work together to develop two cases: one case in favour of the resolution, and one case against the resolution. Your group will be called upon to present one or the other case in the tutorial.

IV **Behind the scenes tour of the Toronto Zoo**
Session 1: Thursday, March 13th.
Session 1: Friday, March 14th.

V **Zoos in the press, Contemporary topics related to the role of zoos in conservation.**
Session 1: Thursday, March 20th from 4:00-6:00 pm in AA 209
Session 2: Friday, March 21st from 10:00-noon in AA205
Special guests: Dr. William Rapley, TZ staff
Required reading: Chapters 4, 7, 8 & 10
Required assignment: You and your group will chose and read two popular press articles concerning animal welfare and/or conservation related to zoos. In the tutorial your group should make a presentation indicating how these press articles relate to the material you have learned in the course, and how they represent real or perceived issues related to the role of zoos in conservation.

VI **Future of Zoos**
Session 1: Thursday, April 3rd from 4:00-6:00 pm in AA 209
Session 1: Friday, April 4th from 10:00-noon in AA205
Required assignment: You and your group will make a presentation on what zoos will look like in the future. Don't be afraid to think "out of the box".

Special Dates

February 18th – 22nd - **READING WEEK** - no lectures
TBA (likely the week following Reading Week) - **MIDTERM EXAMINATION** - based on all material prior to Reading Week
Monday February 24th, 12:00 noon, SW567 - **ESSAY DUE**
April 5th - 9th - STUDY BREAK – no lectures
TBA - **FINAL EXAMINATION** - in examination period and based on material in the entire course.