

Course Syllabus

Course Title: Animal Behaviour

Course Code: Biology 472

Course Credits: 3

Class Section: 1

Class Location: Biology 125

Class Time: 8:30-9:50 am T/Th

Term: 1

Delivery: Lecture and lab

Start Date: September 4, 2014

Lab location: Biology 307

Lab Time: Monday 1:30 -5:30 pm

Course Description:

Fundamental concepts in animal behaviour. An introduction to the form, control and adaptive significance of animal behaviour.

Learning Outcomes:

By the completion of this course, students will be expected to gain a comprehensive understanding of the behavior of animals. They will understand the proximate controls of behavior including the role of hormones, the animal's genotype and the animal's environment in the development of behavior. Much of our work will take an evolutionary approach, consequently, students will have a comprehensive understanding of the adaptive significance of behaviour, emphasizing animal communication, social behavior, territoriality, sexual selection and mating systems.

University of Saskatchewan Grading System (for undergraduate courses)

Exceptional (90-100) A superior performance with consistent evidence of

- a comprehensive, incisive grasp of the subject matter;
- an ability to make insightful critical evaluation of the material given;
- an exceptional capacity for original, creative and/or logical thinking;
- an excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently.

Excellent (80-90) An excellent performance with strong evidence of

- a comprehensive grasp of the subject matter;
- an ability to make sound critical evaluation of the material given;
- a very good capacity for original, creative and/or logical thinking;
- an excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently.

Good (70-79) A good performance with evidence of

- a substantial knowledge of the subject matter;
- a good understanding of the relevant issues and a good familiarity with the relevant literature and techniques;
- some capacity for original, creative and/or logical thinking;
- a good ability to organize, to analyze and to examine the subject material in a critical and constructive manner.

Satisfactory (60-69) A generally satisfactory and intellectually adequate performance with evidence of

- an acceptable basic grasp of the subject material;
- a fair understanding of the relevant issues;
- a general familiarity with the relevant literature and techniques;
- an ability to develop solutions to moderately difficult problems related to the subject material;
- a moderate ability to examine the material in a critical and analytical manner.

Minimal Pass (50-59) A barely acceptable performance with evidence of

- a familiarity with the subject material;
- some evidence that analytical skills have been developed;
- some understanding of relevant issues;
- some familiarity with the relevant literature and techniques;
- attempts to solve moderately difficult problems related to the subject material and to examine the material in a critical and analytical manner which are only partially successful.

Failure <50 An unacceptable performance

Class Schedule/Lecture Topics:

What is Animal Behaviour?

The Proximate/Ultimate Dichotomy

Approaches to the Study of Behaviour (Ethology, Comparative Psychology, Neurobiology)

Hypothesis Testing in Behavioural Research

Classification and Description of Behaviours

Behaviour and Evolution

The Genetics of Behaviour

Learning and Ontogeny of Behaviour

Behavioural Endocrinology

Animal Senses

Biological Rhythms, migration

Foraging Behaviour

Communication

Social Behaviour

Dominance and Territoriality

Sexual Selection and Mating Systems

Parental Care

Instructor Information:

Dr. Doug Chivers

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Dr. Karen Wiebe

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Office Hours: by appointment

Lab Demonstrator:

Adam Crane

Rm. 2202 WCVL

Adam.Crane@usask.ca

Office Hours: by appointment

Required Readings: Altmann, J. 1974. Observational study of behavior: sampling methods. Behaviour 49:227-266.

Reference Texts: Dugatkin, L.A. 2013. Principles of Animal Behavior. 3rd Edition. WW Norton and Co.

R. Dukas & J.M. Ratcliffe. 2009. Cognitive ecology II. University of Chicago Press, 2009

Kappeler, P.M. 2010. Animal Behaviour: Evolution and Mechanisms (electronic resource). Berlin, Heidelberg : Springer-Verlag Berlin Heidelberg.

Grier, J.W. and T. Burk. 1992. Biology of Animal Behaviour. 2nd Edition, Mosby.

Alcock, J. 2009. Animal Behavior: An Evolutionary Approach. 9th Edition, Sinauer.

Drickamer, L.C., Vessey, S.H. and Meikle, D. 2002. Animal Behavior: Mechanisms, Ecology and Evolution. WMC Brown Publishers.

Goodenough, J., McGuire, B., and Jakob, E. 2010. Perspectives on Animal Behavior. 3rd Edition. John Wiley and Sons.

Martin, P. and Bateson, P. 1986. Measuring Behaviour: An Introductory Guide. Cambridge University Press.

Journals: Animal Behaviour
Ethology
Behavioural Ecology and Sociobiology
Behavioural Ecology
Journal of Comparative Psychology
Behavior

Grading Scheme:

Mid-term Exam	20%
Final Exam	40%
Crayfish Lab report	5%
Statement of Intent (see attached sheet – Due Oct 7)	5%
Project (including a paper and poster)	30%

Evaluation components:

Midterm Exam 1

Value: 20% of final grade

Date: Oct 13, 2014 during the lab

Length: 2 hours

Description: Closed book written exam

Final Exam:

Value: 40% of final grade

Date: yet to be scheduled

Length: 3 hours

Description: Closed book written exam. The final exam is comprehensive for the whole course and is required coursework.

Crayfish lab report:

Value: 5% of final grade

Date: due on Oct 7th, 8 days after completion of the lab

Description: Preparation of a comprehensive ethogram (a descriptive inventory of the behavior of crayfish). Late assignments will be penalized by 10% per day

Statement of Intent:

Value: 5% of final grade

Date: due on Oct 7th

Description: Preparation of a Research plan for the individual project (see attached for additional details). Late assignments will be penalized by 10% per day

Project:

Value: 30% of final grade

Date: due on Nov 24th

Description: Preparation of a poster and written report for the individual project (see attached for additional details). **You may not start your project until given permission from the lab instructor. You must complete the online Animal Care Course prior to conducting your project.** Late assignments will not be accepted. Late posters will not be accepted. You will receive a zero for the poster if it is not presented on Nov 24th. Written papers will be penalized 10% per day.

Integrity Defined (from the Office of the University Secretary)

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct (http://www.usask.ca/university_secretary/honesty/StudentAcademicMisconduct.pdf) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (http://www.usask.ca/university_secretary/honesty/StudentNon-AcademicMisconduct2012.pdf)

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at: http://www.usask.ca/university_secretary/pdf/dishonesty_info_sheet.pdf

PROJECT OBSERVING ANIMAL BEHAVIOUR

General Remarks:

1. All projects are individual efforts, i.e., no group projects.
2. You should begin planning your project immediately. There are lab periods at the end of the course that are available for field work.
3. A statement of intent for your project is to be handed in by **Oct 7. You may not start your project until given permission from the lab instructor. You must complete the online Animal Care Course prior to conducting your project.**
4. The poster report is to be displayed, and relevant written material handed in, on **Nov 24th**. You will be given suggestions in class for how to prepare the poster.
5. The evaluation will be based primarily on how well your research is designed, not on the number of hours you spend watching the animal, or how attractive your poster may be. Although you may not be able to answer your question, your project should be designed so that it would be possible to answer it. Show that you understand how a research project should be conducted.
6. An exhaustive literature review is not necessary, but you should be aware of at least some major **primary** source references (i.e., journal articles not textbooks, reviews or websites) on the subject.
7. The lab demonstrator is available for counselling.

Suggested Procedure:

1. Choose an area of behaviour that interests you.
2. Formulate a question (the simpler the better).
3. Choose a study animal that is well suited for investigating the question you are attempting to answer.
4. Find, or create, a population of your study animal.
5. Familiarize yourself with the behaviours of your study subjects.
6. Design a method of sampling the behaviours (it must be quantitative).
7. Make the observations.
8. Write the report and prepare the poster (see Biology hallways for examples).

The Poster (15%):

The poster should include the following sections:

Introduction:

State your objectives. What question (hypothesis) are you investigating? Tell the reader what is known about your study subject and the subject area.

Study Site:

Where is it? What features of the environment are relevant to your study?

Methods:

How and when did you conduct the observations? List any equipment used. What sampling method did you use?

Results:

Present an ethogram of the behaviours you quantified. Present your data (summarized, not in raw form) in tables and/or figures.

Discussion:

Interpret your results. What is the relevance of your study to the biology of the animal and/or the science of ethology? Discuss potential biases and problems with how you collected the data or how you interpreted your findings. Do your results agree with what is known in the literature?

Literature Cited:

List all the literature that you cite in your poster. Make sure that the complete reference is given (e.g., volume number and page numbers of each article).

Note: Marks will be taken off if you do not follow these instructions for preparation of the poster. Your lab demonstrator is the person to whom you should go to ask questions about your project.

The Paper (15%):

The style of the paper will be that published in *Animal Behaviour*.

Statement of Intent (5%):

Prepare a one to three page (double spaced) "Statement of Intent" about the project you are planning to carry out to be handed in no later than **Oct 7**. We encourage you to hand it in even earlier so you can get a head start on the project. This requirement will allow us to check that projects are suitable and have a reasonable chance of success. The statements will be worth 5% of your final mark, and **must be approved** before you continue with your project. Statements of intent that are totally unsuitable will be returned, ungraded, for revision. The revised version can then be given a maximum of only 3 marks (instead of 5).

The statement of Intent should include the following information:

1. The biological question (hypothesis) you are asking, stated as clearly as possible.
2. The organism you are planning to study.
3. The general methods you intend to use.
4. A list of some key references on the subject of your question.

LAB OUTLINE
 Biology 472.3 2013
 Mondays 1:30-5:30, Room 307

<u>Date</u>	<u>Subject</u>	<u>Preparation</u>	<u>Requirements</u>
Sept 8	no lab		
Sept 15	Training videos and research discussion	read Altmann (1974)	none
Sept 22	walking tour of campus & planning for the project	Make sure you are prepared for being outdoors for a few hrs. (i.e., warm clothes & boots); bring binoculars if you have them	no formal report
Sept 29	Ethogram of the on the crayfish	read handout	lab report
Oct 6	Thanksgiving	no lab	
Oct 13		MID-TERM EXAM	
Oct 20- Nov 17	Project	no labs	
Nov 24	Poster session	posters and written text	attendance, poster & written report

UCACS Animal Care Course

A mandatory part of the Education and Training Program is completion of the UCACS Animal Care Course. This core training course is available as an online, web-based course. There are four different courses (laboratory animals, farm animals, fish, and wildlife) available, to allow flexibility and choice depending on one's research program. A course is also available specifically for SVMA licensed veterinarians or for principal investigators who are not directly involved in the use or supervision of live animals.

Each section contains a number of modules. A quiz at the end of each group of modules constitutes the formal grade for the course. When all three module groups have been passed successfully (average of 80% is required), the registrant will have passed the online course.

Registration:

Except for graduate students, all other animal users (faculty, technicians, research associates, undergraduate students, etc) with an active U of S NSID are provided with access to the UCACS Animal Care Course. Individuals must first Log In to Blackboard with their active NSID and then self-register in the online course. Animal users are requested to complete the course within one month of registration.

If you have a NSID but it is not active, please contact the ITS Help Desk at 966-4817 or help.desk@usask.ca for assistance. Researchers, or other animal users, not affiliated with the U of S who are interested in registering for the UCACS Animal Care Course should contact ucacs.office@usask.ca for further instructions.

Graduate students using animals in their research, must register for the web-based GSR 962: Ethics Integrity Animal Research course. As of May 1, 2008, all new graduate students enrolled at the U of S must complete the web-based GSR 960: Introduction - Ethics Integrity course which covers academic ethics, including integrity, conflict and intellectual property. Graduate students should register for these courses via PAWS, similar to registration for other U of S courses.

Registration and Log In:

The UCACS Animal Care Course can be accessed as follows:

From the University of Saskatchewan home page click on the "A-Z" and select "C"
 Scroll down in the directory to select: Course- Blackboard
 Click on "Log In to Course Tools (Blackboard)"
 Click on "Log In with U of S NSID" and enter your NSID and password when prompted.
 Once you are in Blackboard, remain on the main page and use this link:
https://bblearn.usask.ca/webapps/blackboard/execute/enrollCourse?context=Course&command=SavedSearch&searchField=CourseName&searchOperator=Contains&searchText=ucacs&dateSearchOperator=LessThan&startDate=LessThan&course_id=_4503_1

The access code for the course is onlineUCACS.

Click on "Submit" when prompted at the next screen.

A self-enrolled screen will appear once you are registered. Click “OK” in the bottom right corner.

The course content will appear and you will have access to the course.

Note: To access the course again, Log In directly to Blackboard. The middle box on the screen (U of S Course List) will contain courses you are registered for in the Blackboard system.

Click on “ucacs_live: Non-Credit Experimental Animal Care and Use Core Course - (UCACS Animal Care Course”. This will bring you to the main screen of the course where you can select which content to complete.

Through PAWS, the UCACS Animal Care Course can be accessed as follows:

Log In with your NSID and password through PAWS and select the "Course Tools" icon (upper right).

Select “Course List For... Course Assistants and Guests”, which will bring you to the “My Courses” page in Blackboard.

Remain on this Blackboard page and then use this link:

https://bblearn.usask.ca/webapps/blackboard/execute/enrollCourse?context=Course&command=SavedSearch&searchField=CourseName&searchOperator=Contains&searchText=ucacs&dateSearchOperator=LessThan&startDate=LessThan&course_id=_4503_1

The access code for the course is onlineUCACS.

Click on “Submit” when prompted at the next screen.

A self-enrolled screen will appear once you are registered. Click “OK” in the bottom right corner.

The course content will appear and you will have access to the course.

Note: To access the course again, follow the first two steps listed above. The middle box on the screen (U of S Course List) will contain courses you are registered for in the Blackboard system.

Click on “ucacs_live: Non-Credit Experimental Animal Care and Use Core Course - (UCACS Animal Care Course”. This will bring you to the main screen of the course where you can select which content to complete.

If you have any questions or problems with the course, please email ucacs.office@usask.ca .