

Syllabus for Biology/Psychology 250 Animal Behavior

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Office Hours: MWF 10:00 AM - 11:00 AM and by appointment

Classrooms: Lecture - 330 Pricilla Payne Hurd Academic Complex (PPHAC)
Lab – 300 Collier Hall of Science

Course Description: One of science's most absorbing mysteries continues to be the varied behaviors of animals. Ethology, behavioral ecology, and sociobiology are those branches of biology which, by observing and manipulating the behaviors of animals under natural conditions, hope to better understand these processes. Broadly comprehensive in their approach, these disciplines seek to trace the outward manifestations of behaviors back through their requisite anatomical and physiological machinery. Ultimately these behaviors are hoped to be understood in light of the genetic and evolutionary mechanisms that have shaped them through time.

Course Objectives: Upon completion of this course students will be able to demonstrate:

- 1) knowledge of basic concepts in animal behavior, including examples of specific behaviors and their scientific justification
- 2) knowledge of and ability to apply the scientific process as it applies to the study of animal behavior
- 3) an ability to find, evaluate, & use published scientific information
- 4) an ability to objectively interpret data and to use quantitative methods to analyze these data
- 5) competence in scientific writing and oral communication
- 6) an ability to work together in teams
- 7) an ability to integrate concepts within and among disciplines of science
- 8) understanding of the relevance of the animal behavior to society

Text/Materials: Dugatkin, L.A. 2004. *Principles of Animal Behavior*. Norton & Co., NY.
Student Lab Notebook (Supplied by instructor).
Additional readings as assigned.

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| Grading: | Lecture Exam 1 | 15% |
| | Lecture Exam 2 | 15% |
| | Lecture Exam 3 | 15% |
| | Lecture Final Exam | 15% |
| | Laboratory Reports/Assignments | 30% |
| | Laboratory Poster Presentation | <u>10%</u> |
| | | 100% |

Grading Scale: The grading scale is as follows:

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|-------------|-------------------|
| A = 93-100% | C = 73-76% |
| A- = 90-92% | C- = 70-72% |
| B+ = 87-89% | D+ = 67-69% |
| B = 83-86% | D = 63-66% |
| B- = 80-82% | D- = 60-62% |
| C+ = 77-79% | F = 59% and below |

Class Attendance: It has been my experience that students who do poorly in class generally have numerous absences. While no formal lecture attendance will be taken, I strongly suggest that you attend all sessions unless you have a valid reason not to. Be aware that a portion of your final grade involves discussion of readings and class participation. Your excessive absence from these discussions will affect your grade in this area. I will speak personally with anyone who, in my judgement, shows excessive absences. It is in your best interest, therefore, to attend and participate in class.

Laboratory sessions, because they involve hands-on experiences which cannot be effectively mastered without performing them, are especially critical. Therefore, I will be taking attendance at these sessions. If you are unable to attend a laboratory session because of illness or other valid excuse please see me about the possibility of making up the session. Because of the nature of the subject matter this may not always be possible.

Policy on Academic Honesty: Moravian College's policies on academic honesty and disruptive course-related student behavior can be found in the Student Handbook. It is assumed that each of you has read and understands these policies and the consequences of violating them.

**Animal Behavior
Lecture Schedule
Fall 2007**

| Date | Lecture Topic | Dugatkin Chapter* |
|-------------|--|-------------------|
| M Aug. 27 | Principles of Animal Behavior | Chapter 1 |
| W 29 | Principles of Animal Behavior | Chapter 1 |
| F 31 | Natural Selection, Evolution & Behavior | Chapter 2 |
| M Sept. 03 | No Class-Labor Day | |
| W 05 | Behavioral Genetics | Chapter 2 |
| F 07 | Adaptation | Chapter 2 |
| M 10 | Proximate Factors: Hormonal Control of Behavior | Chapter 3 |
| W 12 | Proximate Factors: Neural Mechanisms | Chapter 3 |
| F 14 | Proximate Factors: Nervous Systems & Behavior | Chapter 3 |
| M 17 | Conditioning & Individual Learning Behavior | Chapter 4 |
| W 19 | Evolution of Learning Behavior | Chapter 4 |
| F 21 | What Animals Learn | Chapter 4 |
| M 24 | Exam 1 | Chapters 1-4 |
| W 26 | Social Learning & Cultural Transmission | Chapter 5 |
| F 28 | Interaction of Genetic & Cultural Transmission | Chapter 5 |
| M Oct. 01 | Sexual Selection | Chapter 6 |
| W 03 | Mate Selection-Male/Male Competition & Female Choice | Chapter 6 |
| F 05 | Mating Systems-Monogamy & Polygamy | Chapter 7 |
| M 08 | No Class-Fall Break | |
| W 10 | Mating Systems-Promiscuity & Polygyny | Chapter 7 |
| F 12 | Kinship & Inclusive Fitness | Chapter 8 |
| M 15 | Parent/Offspring Conflict & Sibling Rivalry | Chapter 8 |
| W 17 | Kin Recognition | Chapter 8 |
| F 19 | Exam 2 | Chapters 5-8 |
| M 22 | Cooperation | Chapter 9 |
| W 24 | Reciprocal Altruism | Chapter 9 |
| F 26 | Coalitions and Interspecific Mutualisms | Chapter 9 |
| M 29 | Optimal Foraging Theory | Chapter 10 |
| W 31 | Learning & Foraging Behavior | Chapter 10 |
| F Nov. 02 | Antipredator Behavior | Chapter 11 |
| M 05 | Alarm Signals & Learning | Chapter 11 |
| W 07 | Communication | Chapter 12 |
| F 09 | Communication | Chapter 12 |
| M 12 | Exam 3 | Chapters 9-12 |
| W 14 | Habitat Selection | Chapter 13 |
| F 16 | Territoriality | Chapter 13 |
| M 19 | Migration & Navigation | Chapter 13 |
| W 22 | No Class-Thanksgiving | |
| F 23 | No Class-Thanksgiving | |
| M 26 | Game Theory & Aggression | Chapter 14 |

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| W | 28 | Agressive Behaviors | Chapter 14 |
| F | 30 | Endocrinology & Aggression | Chapter 14 |
| M Dec. | 03 | Play Behavior | Chapter 15 |
| W | 05 | Social Play Behavior | Chapter 15 |
| F | 07 | Evolution of Play Behavior | Chapter 15 |
| M | 10 | Wrap-up | |

Final Exam: Date, Time & Place to be announced

Chapters 13-15

Biology/Psychology 250
Laboratory Schedule
Fall 2007

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|--------------|---|
| August 31 | Constructing an Ethogram; Using Statistics in Behavior Studies |
| September 7 | Analysis of Behavior: Constructing Mallard Duck Ethograms (Illick's Mill Park) |
| September 14 | Simple Behaviors |
| September 21 | Analysis of Behavior: Constructing Ethograms (Philadelphia Zoo) |
| September 28 | Learning Behavior in Mice & Planaria |
| October 5 | Raptor Migration Behavior (Bake Oven Knob) |
| October 12 | Raptor Feeding Behavior: An Analysis of Owl Pellets |
| October 19 | Sexual Selection & Mating Behavior in <i>Drosophila</i> (Part I) |
| October 26 | Altruism and the Evolution of Cooperative Behavior |
| November 2 | Sexual Selection & Mating Behavior in <i>Drosophila</i> (Part II) |
| November 9 | Behavior Genetics of Mice-Exploratory Behavior |
| November 16 | Behavior Genetics of Mice-Agonistic Behavior |
| November 23 | No Lab – Thanksgiving Recess |
| November 30 | Individual Project Work |
| December 7 | Fifth Annual Moravian College Behavior Society Meeting |