Ethology
WFSC 422/632 (on campus 500; DE 700 or 720)

Texas A&M University
Department of Wildlife & Fisheries Sciences

SYLLABUS - FALL SEMESTER 2011

Instructor: Dr. J.M. Packard, 106/107 Nagle Hall, 845-1465, j-packard@tamu.edu (help: l-causey@tamu.edu)
Course website portal: http://wfsc.tamu.edu/jpackard/behavior/wfsc422/wfsc422home.html
Blackboard Vista learning tools: http://elearning.tamu.edu
Lecture period (on campus section 500): Nagle 104, TTh 12:45-2:00
Chat period (Distance Education sections 599, 700, 720): http://elearning.tamu.edu, M or W 8-9 pm
Office Hours: TTh 2:00-3:00 p.m. and by appointment

Catalogue Description: Survey of the control, ontogeny, function and natural selection of behavior in a variety of vertebrate and invertebrate species; interaction between the organism and its environment with regard to the mechanisms and adaptive significance of behavior; evolution of anti-predator, feeding, reproductive and cooperative traits. Prerequisite: BIOL 114 or equivalent.

Textbook *(both cover the same information, the undergrad text is less technical)*
Undergrad: WFSC 422 -Animal Behavior. 1994. (Tim Halliday, editor) University of Oklahoma Press, Norman OK.
Grad: WFSC 632 -Principles of Animal Behavior. 2009. (by Lee. A. Dugatkin) Norton Press, NY

Supplements on Reserve *(your choice to fulfill specific interests in relevant current scientific content)*
Peer reviewed literature: use Web of Science search engine (http://library.tamu.edu) or scholar.google.com

Intelligence in Animals. 1997. (Michael Bright) Readers Digest Association, London. ISBN: 0-89577-913

Encyclopedia of Animal Behavior. 2004. (Marc Bekoff, ed.) Greenwood Press.

Learning Goal ***(Graded Learning Activities)***	**Points**	
	Undergrad WFSC422	**Grad WFSC632**
Participate *(cumulative 48 points; Mix or match: chats, BLOG, field-trip, problem-solving)*	48	48
Comprehend *(10 quizzes; each 10 multiple choice questions @ 1 pt)*	100	100
Inquire- guided *(all grads & undergrads: 2 guided-inquiry workbooks @ 40 pts)*	80	80
Inquire- open *(grads only: 1 open inquiry individual project @ 100 pts)*	n/a	100
Apply *(1 Comprehensive Final Exam; 24 short-answer questions @ 3 pts)*	72	72
TOTAL POSSIBLE	300	400

You can check your grades at anytime using the My Grades tool (elearning). The letter grades will be assigned as: A (90-100%), B(75-89%), C (60-74%), D (45-59%), F (<45%), I (only by written approval, see below).

Additional Requirements for Graduate Students
In consultation with the instructor, graduate students will design and complete an open-inquiry project that meets your personal learning goals for the subject matter. A semester plan must be submitted and approved, including the elements of scientific inquiry: observation, research question, data collection, public report of results.

Incomplete Grade
Occasionally, students encounter stressful problems (eg. loss of a loved one, illness, accident, hard-drive crash, over-commitment, etc.) that make it extremely difficult to complete course requirements within the allotted time. An Incomplete is one option for solving such problems, yet not one to be taken lightly in fairness to other students who complete the work within the time constraints. For an incomplete grade to be granted, a written Problem Solving Message must be filed and approved prior to the Final Exam date.

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Course Outline (assigned reading in textbook)

	KEYWORD TOPICS FOR LECTURES	Undergrad	Grad
	Part 1 (4 weeks). Minds: instinct & intelligence	**Halliday 1994**	**Dugatkin 2009**
1	**Unit 1. Living with other animals** : Introduction to the course: what? * Reflections in the mirror: who? * Basic Questions: proximate & ultimate	8-9, 105-111, 140	1-117
2	**Unit 2. Adapting to changing worlds** : Learned intelligence * Social transmission * Heritable instinct	133-139	118-187
3	**Unit 3. Survival/migration skills**: Adaptations: stressful conditions * Cause & function of migration * Development & evolution of migration	113-131	430-455
4	*Review of Part 1 (see study guide)*		
	Part 2 (4 weeks). Social: living in groups		
5	**Unit 4. Communicating**: Sensory channels * Flexible signs: learned* Fixed signals: inherited	81-87	400-429
6	**Unit 5. Attack & defense** : Intense combat: fight or flight * Minor conflict: escalation & avoidance * Assessment of asymmetry	89-96	456-485
7	**Unit 6. Hierarchy:** Social structure: stability/instability * Social function: access to resources * Stress, health & reproduction	97-104	538-564
8	*Review of Part 2 (see study guide)*		
	Part 3 (3 weeks). Mating: from birth to maturity		
9	**Unit 7. Rearing the young**: Families: helpers * Parental care * Which parent works?	29-39	260-293
10	**Unit 8. Mating & birth**: Internal fertilization * External fertilization * Asexual/hermaphroditic	21-27	226-259
11	**Unit 9. Courting rituals**: Species specific "flags" * Female choosiness * Male attractiveness	13-19	188-225
	Part 4 (4 weeks). Physical: food & shelter		
12	**Unit 10. Hunting**: Group hunters * Solitary hunters * Anti-predator defense	43-55	368-399
13	**Unit 11, Foraging & storing**: Generalists * Specialists * Store food	57-63	334-367
14	**Unit 12. Creating a home**: Secretions * External objects * Colonies	65-77	317-333
15	*Review for comprehensive final exam (see study guide)*		
16	**FINAL EXAM (Fri. 12:30-2:30 pm; proctored open book)**	Assigned & Supplemental	

Course Goal / Objectives
The goal of this course is to prepare you for life-long learning beyond the classroom: to interpret science and to answer questions in the capacity of an educator, docent, keeper, curator, ranger, naturalist, or extension specialist.

Objective 1. Participate regularly in dialogue to clarify knowledge and strengthen communication skills
a. *Activity (mix or match options):* weekly chat (in class or on-line), BLOG, optional field-trip, problem-solving (PS)
b. *Assessment tool:* cumulative points tallied after each Part of course (elearning assignment tool)

Objective 2. Comprehend readings and lecture notes: discover and remember examples as "fun facts" about behavior
a. *Activity:* read and think about assigned chapters relate to lecture notes (use study guide quiz questions)
b. *Assessment tool:* weekly quizzes (elearning assessment tool)

Objective 3. Inquire about the evidence needed to test scientific hypotheses about animal behavior
a. *Activity:* practice observation & critical thinking skills via guided-inquiry and open-inquiry projects
b. *Assessment tool:* Excel workbooks (grad and undergrad), manuscript or poster (grad) (elearning assignment tool)

Objective 4. Apply concepts to examples in a logical framework consistent with modern behavioral biology
a. *Activity:* review lecture notes, readings and search for scientific sources relevant to hypotheses
b. *Assessment tool*: short paragraph final exam (elearning assessment tool)

Course Approach

In this capstone course for the Behavior Management option (undergraduate curriculum), we assume you have taken the introductory courses (300-level) that prepare you to integrate physiology, ecology and evolution. If your chosen career involves actually working with animals outside academia, you will need this basic understanding for effective problem-solving. The course will be useful for graduate students who plan to teach an undergraduate behavior course or want an explicit concept map prior to taking the intermediate (WFSC 622) or advanced (WFSC 620).behavior courses.

The course materials are organized in four parts, each containing 3 units of lectures. The 12 lectures highlight keyword concepts that build on each other from the beginning to the end of the course. For example, the first part clarifies the basic concept map: proximate (Cause, Development) and ultimate (Evolution and Function). These basic concepts are like threads running through all four parts of the course. This is why the comprehensive final exam is open book. While learning how the concepts are applied to examples in each of the four parts of the course, you are expected to internalize the knowledge of the concept map by storing it in long-term memory. This will help you retrieve specific information about scientific examples that will be most relevant to you in your career. The final exam is cumulative, to measure skill at retrieving knowledge under time pressure, as in preparation for challenges of communicating with the general public.

A study guide is provided to aid you in focusing on preparing for the exam questions, which will be chosen randomly from lists provided for each part of the course. In preparing to answer these questions throughout the semester, you will be asked to choose examples that most interest you, either from the assigned readings or from supplemental sources. You are encouraged to search for the science behind the myths in the popular media, practicing skills of critical thinking to distinguish between "Folk Psychology" and the "Scientific Perspective". You will be expected to practice skills of scholarly communication, citing the author and date of scientific publications so your reader may read the evidence you use to support your logical statements about how hypotheses were tested. Learning activities (i.e. chats, BLOGS, inquiry projects, field trip) are designed to help you learn how to make the transition from popular Folk Psychology (myth) to communicating about testable scientific hypotheses.

The course will be conducted according to the principles of collaborative learning, in which you are expected to interact with other participants, using the course materials as a springboard to find the most current scientific sources available. "Collaboration" means expressing ideas and listening to others' perspectives: i.e. form your own logical arguments about what would be considered credible evidence to test hypotheses about the biological basis of behavior. In the truest spirit of collaboration, you are responsible for your own learning. Assessment of achievement is based on individual performance, not a class curve, a group project ("just say no to slackers") or parroting "what the professor wants to hear".

Academic Integrity Statement: **"An Aggie does not lie, cheat, or steal or tolerate those who do."**

Let us pause to reflect seriously on the last phrase in the above statement about academic integrity. We need to be very clear about the "three strikes and you are out" policy on plagiarism in this class. **Strike 1**: a written PS message will direct you to read materials posted at the Aggie Honor System Office http://www.tamu.edu/aggiehonor., **Strike 2**: a written PS message will direct you to make an appointment to file an online report to the Aggie Honor System Office , **Strike 3**: a "Fail" grade will be assigned for the course. To avoid any appearance of misconduct, always (1) paraphrase and summarize in your own words, (2) use quotation marks and cite the source (i.e. "types of questions"; (Dugatkin 2009:5), and (3) provide reference to primary (peer-reviewed; e.g.Vannoni & McElligott 2009) and secondary sources of information (personal communications, websites and copyrighted materials; i.e. Halliday 1994).

Expectations of Course Participants

Participants will be responsible for reading all information on the course website. For example, the excuse “I did not know that it was wrong to copy words without quotation marks” will not be an acceptable reason for plagiarism.

In this course, we expect you to practice the inquiry skills needed for a successful professional career: (1) as an Aggie who is a leader and (2) as a role model with high standards of character and integrity. Whether you will be translating science to a general audience, or doing inquiry projects yourself, you will be working at the interface between society and science. Science is a very public activity, subject to scrutiny and to debate about the validity of the evidence. We want you to have

the knowledge and skills to contribute to such healthy debate. Therefore you will be expected to learn and apply skills of public communication. In this course you will be expected not only to do the learning activities, but to also think about the process of learning, and to share your reflections with your peers so that you would be able to step to the front of a group and lead any of these exercises. Furthermore, we hope you will adopt or even invent learning activities that are adapted to your workplace, using the examples in this course as a springboard.

Public communication is a skill that is learned, and we expect you to make use of the resources on and off Campus for sharpening your communication skills. One of the best sources is the University Writing Center. They are eager to work with you, as communicated on their website:

> "The University Writing Center (UWC), located in Evans Library 1.214, offers help to writers at any stage of the writing process including brainstorming, researching, drafting, documenting, revising, and more; no writing concern is too large or too small. These consultations are highly recommended but are not required. While the UWC consultants will not proofread or edit your papers, they will help you improve your proofreading and editing skills. If you visit the UWC, take a copy of your writing assignment, a hard copy of your draft or any notes you may have, as well as any material you need help with. To find out more about UWC services or to schedule an appointment, call 458-1455, visit the web page at writingcenter.tamu.edu, or stop by in person."
> *(http://writingcenter.tamu.edu; accessed July 10, 2009)*

There will be no make-up quizzes (see elearning assessment tool for details on timing). The two lowest quiz grades will be dropped from calculation of the course grade. You may choose between a hard-copy or on-line format for the proctored final exam (open book and hard copy notes must be available for inspection by the proctor). For exams conducted off-campus, previous arrangement must be made for a suitable proctor, at least one week in advance. A make-up exam time will be permitted only by written approval at least 1 week prior to the scheduled exam date, and the only option will be the hard-copy format.

As would be expected in the workplace, you should notify the instructor prior to missing a course meeting (in the classroom, on-line chat, or field trip). In case of unanticipated events, a message should be delivered within 24 hours of the scheduled meeting. Reasons for excused absences are specified in the Student Handbook.

Should any other problem arise with course procedures or materials, you are expected to communicate using the positive problem-solving approach (specified below). Failure to do so may result in a failing grade for the assignment if it is not completed by the due date and time specified on the elearning calendar and assignment tools.

Send a **Problem-Solving (PS) message** to the instructor (email, phone, hard copy) Answer these 4 questions:
1. PROBLEM: What is the problem, from your perspective?
2. GOOD ASPECTS: What is good about taking a positive approach to finding solutions?
3. OPTION: What specific options are you proposing which would solve the problem?
4. PREFERRED OPTION: Which specific option do you prefer (explain)?

Your instructor will reply in writing about
1. PROBLEM: Perspectives of others involved, directly or indirectly
2. OTHER OPTIONS: Potential solutions that could be added to your list
3. PREFERRED OPTION: The “best” option to meet the needs of both you and the group
4. YOUR PERSPECTIVE: A request to hear from you whether the “preferred” option would be acceptable to you

American Disability Act (ADA)
ADA is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life/Services for Students with Disabilities, in Cain Hall. The phone number is (979) 845-1637.