FLORIDA ATLANTIC UNIVERSITY

NEW COURSE PROPOSAL
Graduate Programs

Department Biological Sciences

College College of Science

*(To obtain a course number, contact **erudolph@fau.edu**)*

UGPC Approval _____
UFS Approval _____
SCNS Submittal _____
Confirmed _____
Banner Posted _____
Catalog _____

Prefix ZOO **Number** 6516	*(L = Lab Course; C = Combined Lecture/Lab; add if appropriate)* **Lab Code**	**Type of Course** Lecture	**Course Title** Principles in Behavioral Ecology

Credits *(Review Provost Memorandum)* 3

Effective Date *(TERM & YEAR)* spring 2018

Grading *(Select One Option)*
Regular (●)
Sat/UnSat ( )

Course Description *(Syllabus must be attached; see Guidelines)*

Behavioral ecology is a field that seeks to understand the evolution and fitness consequences of behavior. Students will read scientific papers and discuss key concepts and areas of study in the field of behavioral ecology.

Prerequisites	**Corequisites**	**Registration Controls** *(Major, College, Level)*
a B.S. in Biology, Zoology, or Psychology		MS and PhD candidates in College of Science

Prerequisites, Corequisites and Registration Controls are enforced for all sections of course

Minimum qualifications needed to teach course:	**List textbook information in syllabus or here**
Member of the FAU graduate faculty and has a terminal degree in the subject area (or a closely related field.)	None.
Faculty Contact/Email/Phone	**List/Attach comments from departments affected by new course**
Rindy Anderson, andersonr@fau.edu, 954-236-1144	

Approved by	***Date***
Department Chair	11-6-17
College Curriculum Chair	11-6-17
College Dean Dr. Charles Roberts	11-6-2017
UGPC Chair	11-7-17
UGC Chair	11-21-17
Graduate College Dean	
UFS President	
Provost	

Email this form and syllabus to UGPC@fau.edu one week before the UGPC meeting.

GRADUATE COLLEGE
NOV 06 2017
Received

Topics in Behavioral Ecology

ZOO 6516 Credits: 3

Spring 2018

W F 11:00 am – 12:20 pm ES 121

Instructor: Dr. Rindy Anderson Office: 336 Davie West
954-236-1144 Office hrs: 12:30 – 1:30 pm W F
andersonr@fau.edu

Course description and general objectives

Why does the animal do that? Behavioral ecology is a field that seeks to understand the evolution and fitness consequences of behavior. Behavioral Ecology can be viewed as a subfield of Animal Behavior. The field of Animal Behavior is concerned with "Tinbergen's Four Questions" – development of behavior, mechanisms of behavior, function of behavior, and evolution of behavior. Behavioral Ecology, and thus this course, is focused primarily on the last two of these questions: how animal behaviors relate to their fitness consequences (survival and reproductive success) and how studying such relationships helps us to understand how behavior evolves. Behavioral ecology utilizes field observations and experiments as well as theoretical approaches and mathematical modeling to generate evolutionary hypotheses and predictions. In this course, students will explore key concepts and areas of study in behavioral ecology including evolutionary arms races between predators and prey, aggression and competition for resources, cooperation and living in groups, sexual conflict, altruism, cognitive ecology, and communication.

Learning Objectives

Students successfully completing this course will become familiar with the major topics and research approaches in the field of behavioral ecology. By the end of this course, students should have gained experience and skills in the following areas:

- Team work: work in teams comprising diverse personalities, levels of knowledge and skill sets to answer questions and solve problems
- Presentation: use Microsoft Powerpoint and web-casting software to create student presentations and video lectures
- Communication: write clear, succinct "Five-minute Essays" providing a hypothesis, explaining a concept, or arguing a position
- Synthesis: read, critically evaluate and discuss scientific literature in a productive way
- Skill: understand how to frame scientific questions, hypotheses, and predictions and explain how scientists use the scientific method to understand how and why behavior evolves
- Knowledge: explain Tinbergen's Four Questions and how they provide a framework for research in behavioral ecology

Semester at a glance

Jan 10	Course introduction, student introductions
Jan 12	How to read and discuss a scientific paper, class discussion of assigned reading *Pre-class work: Read Herborn et al. 2014, and "How to read a scientific paper"*
Jan 17	Formation of teams, icebreaker exercises, in-class assignment
Jan 19	What is Behavioral Ecology? RAT quiz #1 *Pre-class work: Read Alcock text chpt 1, watch video lecture #1*
Jan 24	How do we ask questions and test hypotheses in behavioral ecology? - RAT quiz #2 *Pre-class work: Read Davies text chpt 2, watch video lecture #2*
Jan 26	How do we ask questions and test hypotheses in behavioral ecology? – Paper discussion *Pre-class work: Read Bateson and Laland paper, bring three discussion points*
Jan 31	Darwin, natural selection and adaptation - RAT quiz #3 *Pre-class work: Davies text chpt 1, watch video lectures 3 and 4*
Feb 2	Darwin, natural selection and adaptation - Paper discussion *Pre-class work: Read Seddon 2005, bring three discussion points*
Feb 7	Sexual selection and choosing mates - RAT quiz #4 *Pre-class work: Read Dugatkin chpt. Sexual Selection, watch video lectures 5 and 6*
Feb 9	Team work on Team Takeover presentations
Feb 14	Application Exercise 1 – Human Non-Verbal Communication
Feb 16	Altruism, kin selection and social conflict - RAT quiz #5 *Pre-class work: Read Alcock chpt 2, watch video lecture 7*
Feb 21	Altruism, kin selection and social conflict - Paper discussion *Pre-class work: Read Carter and Wilkinson 2013, bring three discussion points*
Feb 23	Predators vs. prey - RAT quiz #6 *Pre-class work: Read Dugatkin chpt on Predation, watch video lecture 8*
Feb 28	Predators vs. prey - Paper discussion *Pre-class work: Read Vallin et al. 2006, bring three discussion points*
Mar 2	Application Exercise 2 – The case of the seaside sparrow
Mar 6 – 12	***SPRING BREAK***
Mar 14	Communication: fighting, mating and assessment - RAT quiz #7 *Pre-class work: Read Dugatkin chpt on Communication, watch video lecture 9*
Mar 16	Communication: fighting, mating and assessment - Paper discussion *Pre-class work: Read Laubach et al. 2013, bring three discussion points*
Mar 21	How neurons and hormones organize behavior - RAT quiz #8 *Pre-class work: Read Dugatkin chpt on Hormones and Neurobiology, watch video 10*
Mar 23	How neurons and hormones organize behavior - Paper discussion *Pre-class work: Read Kabelik et al 2013, bring three discussion points*
Mar 28	The development of behavior: nature and nurture - RAT quiz #9 *Pre-class work: Read Alcock chpt 11, watch video lecture 11*
Mar 30	Team Takeover – Team 1 - RAT quiz #10 *Pre-class work: Reading and video lecture provided by the team*
April 4	Team Takeover – Team 2 - RAT quiz #11 *Pre-class work: Reading and video lecture provided by the team*
Apr 6	***NO CLASS Teams work on Team Takeover presentations***
Apr 11	Team Takeover – Team 3 - RAT quiz #12 *Pre-class work: Reading and video lecture provided by the team*
Apr 13	Team Takeover – Team 4 - RAT quiz #13 *Pre-class work: Reading and video lecture provided by the team*
Apr 18	Team Takeover – Team 5 - RAT quiz #14 *Pre-class work: Reading and video lecture provided by the team*
Apr 20	Team Takeover – Team 6 - RAT quiz #15 *Pre-class work: Reading and video lecture provided by the team*
TBD	***Final cumulative exam***

Course format

There is no required textbook for this course.

Please keep in mind that this course will be demanding and challenging, but it is not designed to "weed out" students. Every student can do well in this course if they come prepared, work well in teams, participate in all aspects of the course and act professionally. I want you to have fun in this course. I want to have fun. If you are struggling with any aspect of the course please talk to me so that we can work on a solution together.

I will post pre-class assignments and other course materials on the Canvas course web site on the FAU server. Please make sure you have regular access to that page.

Working in teams: Team work is central to this course so it is important that you are prepared, courteous, respectful and professional while working with your team. A good attitude is important. You will be assigned to a team at the beginning of the course and you will work with this team throughout the course on quizzes, activities and presentations. Part of your grade will be determined by how well you work with your team. *If you have a concern about a team member who is disruptive, chronically unprepared, or has a bad attitude, please see me as soon as possible.*

Readiness Assessments (quizzes): At the beginning of class one day each week (typically Monday) we will begin class by taking a quiz composed of 8 questions. These will be multiple choice or fill-in answer format. You will first take the RA on your own and will be given 10 minutes to complete it. You will then take the same quiz again only this time your team will work on the answers together. You will get 10 minutes take the RA as a team. We will then discuss the answers as a class to make sure that everyone understands the correct answers. Your individual score and group score count equally toward your final grade.

Paper discussions: Once a week we will use class time to discuss a published scientific paper that you will read ahead of time. For each paper you will write down three points for discussion and bring them to class. These could be questions that you pose and attempt to answer, definitions that you provide, arguments that you make (based on knowledge or evidence), or critiques that you offer (based on knowledge or logical reasoning). We will use these talking points to guide our discussions during class. You will receive points for completing the assignment only if you bring three talking points for each paper.

Application exercises: These are case studies in which background information pertaining to a given behavioral scenario is presented in a handout for students to read. Students then work in their teams to answer questions, solve problems or design experiments. The goal of these exercises is to deepen student understanding of the material and to practice applying the knowledge gained about the topic to real-world behavioral ecology scenarios.

Team Takeover presentation: This presentation project will provide the largest component of the students' final grade. During the first part of the course, Professor Anderson will cover key topics in the field of Behavioral Ecology by creating video lectures, writing RA quizzes, choosing readings and facilitating discussions, and creating and leading application exercises. During the last several weeks of class, each team will take over an entire class period to cover a chosen topic. The team will create video lectures, assign readings, write an RA quiz, and create Application Exercises for the class to complete. Teams will meet with Professor Anderson during class several weeks before the presentations begin to discuss the

topic chosen for their presentation and the activities they have planned for the class. Time will be given in class for teams to work on their presentations, but teams should plan to meet outside of class as well.

Cumulative final exam: There will be approximately 20 questions including multiple choice, matching and fill-in-the-blank, and two essay questions.

How grades will be determined

Graded work	pts per unit	no. of units	total pts	%grade
Individual RA scores*	8	12	96	19
Group RA scores	4	12	48	10
Paper discussion participation/attendance	8	9	72	14
Application exercises	5	12	60	12
Team Takeover score	100	1	100	20
Team Takeover participation	20	1	20	4
Attendance	2	16	32	6
Cumulative Final Exam	70	1	70	14
TOTAL			498	100

* We will take 14 Individual and Group RA quizzes. You may drop your 2 lowest Individual and 2 lowest group scores.

Determination of letter grades will be based on your total point score as follows:

95% or greater = A
88% - 94% = A-
86% - 87% = B+
78% - 85% = B
76% - 77% = B-
74% - 75% = C+
68% - 73% = C
66% - 67% = C-
64% - 65% = D+
58% - 63% = D
55% - 57% = D-
<55% = F

Expectations

Religious holidays: Students who wish to be excused from course work, class activities or examinations must notify Professor Anderson of their intention to participate in religious observation and request an excused absence within the first three days of class meeting.

Ethical and courtesy expectations:
Please do not be late for class. In addition to disrupting the class, you may miss a quiz. You will not be given extra time to complete the quiz.

Please do not leave early before the class ends. This disrupts the class. If you must leave early, please sit at the back of the class or near an exit and leave quietly.

Please stay on task during discussions and while working in teams. Do not have irrelevant conversations as this disrupts the class and makes it difficult for me to keep the class focused and for your team to complete assignments.

Attendance Policy: Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by Professor Anderson. The effect of absences upon grades is determined by Professor Anderson, and the University reserves the right to deal at any time with individual cases of non-attendance. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student's responsibility to give Professor Anderson notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

Academic Integrity: FAU and I expect academic integrity of our students. Academic dishonesty is considered a serious breach of ethical standards because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, please see the details in the Undergraduate Catalog, and Students Handbook. In addition, do not copy any material from other students during exams and quizzes. Do not copy material from published sources for your written projects or presentations.
http://www.fau.edu/ctl/4.001_Code_of_Academic_Integrity.pdf

Disability policy: In compliance with the Americans with Disabilities Act (ADA), students who require reasonable accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) – in Boca Raton, SU 133 (561-297-3880); in Davie, LA 240 (954-236-1222); in Jupiter, SR 110 (561-799-8010); or at the Treasure Coast, CO 117 (772-873-3441) – and follow all OSD procedures.

Credit Hour Definition
This course involves 50 minutes of in class instruction for each credit hour per week, and a minimum of two hours of out of class assignments each week for 15 weeks. To master the material covered in this course it is expected that the student will spend a minimum of two hours per week per credit hour on the out of classroom assignments.

Reasonable Accommodation Statement for Makeups
Reasonable accommodation will be made for students participating in a religious observance or in University-approved activities, including athletic or scholastics teams, musical and theatrical performances and debate activities.