BEHAVIORAL BIOLOGY
FALL 2015 BIOLOGY 4471-A SYLLABUS
TR 1:35-2:55 pm, Cherry Emerson 204

Course description
This course is an introduction to the study of the principles of behavior of all kinds of organisms, from microbes to mammals. We will examine basic principles derived from evolution, ecology, ethology, and development, and use these principles to explain how and why organisms behave as they do. We will focus on many important biological activities such as foraging, communication, social behavior, predator-prey interactions, mating, and parental care. We will consider the physiological mechanisms which generate and control behaviors, the immediate environmental conditions and stimuli which elicit behaviors, the ecological contexts in which behavior occurs, the ontogeny of behavior patterns in the individual, and the evolutionary development of the behaviors of the species.

Instructors
Dr. Michael Goodisman: michael.goodisman@biology.gatech.edu ; 404-385-6311; Cherry Emerson #A110. Office hours: By appointment.
Dr. Linda Green: linda.green@biology.gatech.edu ; 404-385-6517; CULC 474C; Office hours: By appointment.

Required resources
Principles of Animal Behavior, Third Edition; Lee Alan Dugatkin; ISBN: 978-0-393-92045-1. The textbook is an excellent resource for learning and understanding behavior.
Subscription to Learning Catalytics, purchased at lcatalytics.com

Learning outcomes
By the end of this class, students will be able to:
1. Demonstrate how evolutionary and ecological processes shape behavior
2. Explain how genetic, developmental, and physiological systems affect behavior
3. Design and implement experiments to test behavioral hypotheses
4. Distinguish between proximate and ultimate causes of behavior
5. Understand concepts that explain behavioral differences within and between species.
6. Effectively communicate scientific findings concerning behavior in both oral and written modes
7. Read, interpret, and explain primary literature that concerns behavior

Class organization
This is a three credit course intended for advanced undergraduates. BIOL 1510 or 1511 is a prerequisite. Class time will consist of a variety of small group activities designed to discuss, clarify, and apply new ideas by answering questions, drawing diagrams, and analyzing primary literature. We expect you to demonstrate persistent learning by attending every class period, reading ahead, bringing appropriate notes from the readings that support quality participation during class, and taking personal responsibility for the success of both yourself and your peers.

Attending and participating in class is fundamental to this course. To maximize your understanding of course material and do well on the class assignments, you will need to complete each reading

assignment *before* the relevant class. Class time will be devoted to activities that promote discussion and mastery of course concepts. Therefore, attendance is fundamentally important to understanding course content and class activities will be a large part of your grade. Please be courteous to your fellow students and do not disrupt class by entering and leaving the room, reading, talking, allowing cell phones to ring, etc.

Computers will be allowed in the class and may, in fact, be necessary on some class days. However, computer (or smartphone or smartpad) use must be restricted to relevant, class activities. The use of computers for non-class activities will result in dismissal from that day's class period and the loss of any points associated with that class period.

If you miss class, you are responsible for obtaining all notes, announcements, and assignments. There are no make-up assignments. Therefore, if you legitimately miss a class, your grade will be calculated from the remaining graded assignments. Written confirmation of a legitimate excuse, such as a severe illness, will be required for an excused absence. If you miss a without legitimate excuse then you will receive no credit for that day's assignments.

Honor policy:
Your conduct should conform to the Student Honor Code (http://www.honor.gatech.edu/). Students found in violation of the Honor Code will be reported to the Dean of Students for disciplinary measures.

Learning Accommodations:
Please contact the instructors during the first week of class or as soon as possible if you need classroom accommodations. Accommodations should be arranged in advance and in accordance with the Office of Disability Services (http://disabilityservices.gatech.edu/)

Assessments:
Students will be required to complete a series of assessments and engage in several activities in order to perform well in the class. The required assessments and activities follow:

1) Students will work in groups to study and report on a specific behavior topic of their choosing. You will lead a class discussion about a primary literature paper that the class has read by providing contextual knowledge and your critical analysis of its relevance to related work on the topic. Your 'presentation' should include a maximum of 10 minutes of prepared comments, followed by discussion questions and/or an activity to engage the class in the paper topic. Your **Discussion Leading** grade will be based on three components: your oral summary of the papers, the quality of your discussion-leading techniques (in terms of their ability to generate and sustain discussion), and additional insight material, such as information on the study system, pictures of the organisms, in-class activities related to the readings.
2) Following your presentation, each student will submit a 5 page **Written Report** (single-spaced, one-inch margins, 12 point Time New Roman or 11 point Arial font) on the subject, which must include at least 6 citations to the primary literature. This is due one week after your presentation, or the third class session after your presentation if an exam falls within the week following your presentation.

3) Everyone is also expected to fully participate in the discussions that you do not lead. Your **Discussion Participation** will be scored according to the following rubric: A=regular participation, usually well thought out, useful contributions (10%); B=regular participation, sometimes useful, sometimes not (8%); C= occasional participation, but generally useful (6%); D = occasional participation, but generally non-substantive, adding little new information (4%); F = present by rarely contributed (2%). We reserve the right to assign + or – grades (e.g., B+ may equal 9%). You may ask us at any time where you stand (i.e., what grade I'd assign if it was the end of the term). Regular and insightful participation in classroom discussions is expected.
4) A substantial component of the course grade will consist of written **in-class activities and homework**. These assignments may entail short critiques on particular topics, case study analysis, in-class quizzes, and pre-class reading forums.
5) There will be three **exams** in the class. Two of the exams will be held during the regular semester and third exam will be held during finals week, although this last exam will not be a cumulative exam. The exams will be primarily focused on assessing your understanding of the material discussed in class, in the textbook, and in the assigned discussion papers. Exam questions will be focused on recent material but as content knowledge deepens, some degree of cumulative recall is expected.

Assessment	Value
Discussion Leading	10
Written Report	10
Discussion Participation	5
In-class assignments & homework	25
Exam I	15
Exam II	15
Exam III	20
Total	100%

The most stringent scale used will be: 90-100% an A, 80-89% a B, 70-79% a C, 60-69% a D, and 59% or less an F. This scale is subject to adjustment at the discretion of the instructors.

Tentative Lecture Schedule:
This schedule is subject to change!

Week	Class	Date	Day	Chapter	Instructor
1	1	18-Aug	T	1- Principles of Animal Behavior	MG/LG
	2	20-Aug	R	1- Principles of Animal Behavior	MG
2	3	25-Aug	T	2- The Evolution of Behavior	MG
	4	27-Aug	R	2- The Evolution of Behavior	MG
3	5	1-Sep	T	3- Hormones and Neurobiology	MG
	6	3-Sep	R	3- Hormones and Neurobiology	MG
4	7	8-Sep	T	4- Molecular Genetics and Development	MG
	8	10-Sep	R	4- Molecular Genetics and Development	MG
5	9	15-Sep	T	5- Learning	MG
	10	17-Sep	R	EXAM I	
6	11	22-Sep	T	5- Learning	MG
	12	24-Sep	R	6- Cultural Transmission	MG
7	13	29-Sep	T	7- Sexual Selection	LG
	14	1-Oct	R	7- Sexual Selection	LG
8	15	6-Oct	T	8- Mating Systems	LG
	16	8-Oct	R	8- Mating Systems	LG
9		13-Oct	T	NO CLASS	
	17	15-Oct	R	9- Kinship	MG
10	18	20-Oct	T	9- Kinship	MG
	19	22-Oct	R	10- Cooperation	MG
11	20	27-Oct	T	EXAM II	
	21	29-Oct	R	10- Cooperation	MG
12	22	3-Nov	T	11- Foraging	MG
	23	5-Nov	R	12- Antipredator Behavior	MG
13	24	10-Nov	T	13- Communication	MG
	25	12-Nov	R	13- Communication	MG
14	26	17-Nov	T	14- Habitat Selection, Territoriality, and Migration	LG
	27	19-Nov	R	14- Habitat Selection, Territoriality, and Migration	LG
15	28	24-Nov	T	15- Aggression	LG
		26-Nov	R	NO CLASS	
16	29	1-Dec	T	16- Play	LG
	30	3-Dec	R	16- Play	LG
17		8-Dec	T	EXAM III (2:50-5:40)	