Since its formulation in the 1930s – 1950s, animal behavior remains one of the most available and pivotal sciences. Animal behavior is the first science that most people pursue as children (think of a toddler that mimics a foraging squirrel) and the last science an elderly person practices (consider a grandmother describing how birds interact at her feeder). Animal behavior is also one of the most pivotal branches of all sciences. Animal behavior is "the" integrative science whose research regularly splashes across the pages of Science, Nature, and other primer journals. In addition, animal behavior discoveries are regularly featured in news reports of the popular media.

You will be introduced to the scientific field of Animal Behavior (i.e. Ethology) in this class. Students will explore the mechanisms and adaptive significance of behavior in a wide diversity of species, including wild, domestic, and companion animals. In their study of Animal Behavior, students will explore basic biological principles (e.g. homology, natural selection, and evolution) and basic scientific principles (e.g. scientific method, phylogenetic analysis, and statistics).

The integrative laboratory experience will emphasize description and the design of experiments. Topics include describing, measuring, and modeling behavior; designing experiments; understanding the sensory world of other species; as well as field and laboratory research. Students will conduct independent research projects and present their research in an oral session.
Instructor: Dr. Charles (billy) Gunnels
WH 113
Email: cgunnels@fgcu.edu
Phone: 590-7210
Office Hours: T & Th: after class – 12 or by appointment.

Credits: 3

Prerequisites: Biology 1010 & 1011 are required.

Class Time: T & Th 8 – 10:15 am.
You are expected to attend all lectures and labs. Most labs are scheduled for the regular class period but some might occur at other times. You may not turn in laboratory assignments (e.g. lab reports) if you are absent or late to class involving data collection. There is a voluntary field trip “Science in a Day” on Saturday.

Required Texts and Reading:

Additional required readings will be available on Angel. Readings must be read prior to that class period. It is important that you read the assigned material as well as the text very carefully before each lab or lecture. Lectures and labs assume that you have done all the reading for that week, so please keep up with the weekly reading assignments. A schedule of the reading is given on the syllabus.

Additional Sources (these are great sources introducing you to animal behavior)
Develops/introduces many ideas in evolutionary animal behavior
Good textbook with well-developed introductory theory
This is the standard by which all other animal behavior textbooks are compared. Pleasant read.
Seminal research papers in the field.
Brilliant. Each edition captures the state of the field at the time of publication.

Freeware & Cheapware
j-Watcher [http://www.jwatcher.ucla.edu/] - free
Quantify video data
Statistical add-on to Excel

Notebooks: You will be expected to keep two notebooks: a notebook that is used for data collection and field notes and a separate notebook that is used for taking notes taken from class and lab. I will collect your field notebook throughout the semester.

Angel: Important material is provided on Angel. Please consult Angel for up-to-date information, deadlines and additional information for lectures. Emails should be sent via Angel.

Evaluation: Your grade in the course is based on two equal parts: laboratory and lecture.
(1) Lecture (50%).
Your lecture grade is based on quizzes and class participation (25%; 5% participation & 20% Quizzes) and three exams (25% each). See schedule for dates and times.
(2) Laboratory (50%).
Your lab grade is based on participation (10%) and written work that you submit (30%). All labs require some written work, such as a worksheet, a set of descriptions, a set of graphs, table of data or experimental design.
The laboratory will culminate in this final research project given in an oral presentation describing your research (60%). You will be able to work in groups of 1 – 3 on the final research project.
(3) BONUS (+ 10%). On Saturday 24 Oct 2009 you will have the chance to participate in “Science in a Day”.

1 letter grade will be deducted for each day that an assignment is late.
Letters of Recommendation: Students seeking a letter of recommendation should provide a signed letter waiving their rights to
Disability Statement: Florida Gulf Coast University, in accordance with the Americans with Disabilities Act and the university’s
guiding principles, will provide classroom and academic accommodations to students with documented disabilities. If you
need to request an accommodation in this class due to a disability, or you suspect that your academic performances is
affected by a disability, please see me or contact the Office of Adaptive Services. The Office of Adaptive Services is located
in Howard Hall, room 137. The phone number is 590-7956 or TTY 590-7930.

Letters of Recommendation: Students seeking a letter of recommendation should provide a signed letter waiving their rights to
keep their academic record in this class private. This waiver allows faculty members to discuss your record, grades, work
ethic, and intellectual ability. We are not able to comment on these matters without the waiver.

Tentative Schedule: All aspects of the schedule may be modified. You will be informed of any changes. For example, labs may be
changed at the last minute because of animal training as well as additional readings will be added as needed.

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topic</th>
<th>Tuesday</th>
<th>Thursday</th>
<th>Lab Sits</th>
<th>Final Animal</th>
<th>Lab Location</th>
<th>Readings</th>
<th>Outside Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1 &amp; 3 Sept</td>
<td>Proximate &amp; Ultimate</td>
<td>Integrative Biology (the 4 Questions) &amp; Behavioral Evolution</td>
<td>Ethogram</td>
<td>Describe Behavior</td>
<td>Variable</td>
<td>Bowditch Point Park 5½ hour parking</td>
<td>EAB - Holekamp &amp; Sherman 53 – 60</td>
<td>Build Ethogram²</td>
</tr>
<tr>
<td>3</td>
<td>8 &amp; 10 Sept</td>
<td>Genetics</td>
<td>Kinetic Diagrams</td>
<td>Behavioral Genetics</td>
<td>Observational Data</td>
<td>Brown Anole</td>
<td>FGCU</td>
<td>SR – Robinson 2002</td>
<td>Construct Kinetic Diagram²</td>
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<tr>
<td>7</td>
<td>6 &amp; 8 Oct</td>
<td>Mechanisms</td>
<td>Neuroethology</td>
<td>Behavioral Endocrinology</td>
<td></td>
<td></td>
<td></td>
<td>EAB – Wingfield et al. 102 – 108</td>
<td>Evaluate Endocrinology Data</td>
</tr>
<tr>
<td>8</td>
<td>13 &amp; 15 Oct</td>
<td>Comparative</td>
<td>Behavioral Phylogeny</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EAB – Vanderbergh 190 – 116</td>
<td>Evaluate Phylogeny Data</td>
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<tr>
<td>9</td>
<td>20-22 Oct</td>
<td>Adaptive</td>
<td>Foraging</td>
<td>Habitat Selection &amp; Territoriality</td>
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<td></td>
<td></td>
<td>SR – Perry &amp; Puesch 1907</td>
<td>Evaluate Sociality Data</td>
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<tr>
<td>11</td>
<td>3 &amp; 5 Nov</td>
<td>Sex &amp; Parents</td>
<td>Sexual Selection</td>
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<td></td>
<td>EAB – Borgia 175 – 180</td>
<td>Independent Research</td>
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<tr>
<td>12</td>
<td>10 &amp; 12 Nov</td>
<td>Social Behavior</td>
<td></td>
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<td></td>
<td>EAB – Heinrich &amp; Marler 274 – 281</td>
<td>Independent Research</td>
</tr>
<tr>
<td>14</td>
<td>24 &amp; 26 Nov</td>
<td>Holiday</td>
<td>No Class</td>
<td>Thanksgiving</td>
<td>No Class</td>
<td>Thanksgiving</td>
<td></td>
<td></td>
<td>Independent Research</td>
</tr>
<tr>
<td>15</td>
<td>1 &amp; 3 Dec</td>
<td>Research</td>
<td>Exam 3</td>
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<td></td>
<td>EAB – Sherman &amp; Flaxman 11 – 11</td>
<td>Independent Research</td>
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<tr>
<td>16</td>
<td>7 Dec</td>
<td>Research</td>
<td></td>
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<td></td>
<td></td>
<td>Independent Research</td>
</tr>
</tbody>
</table>

1 EAB = Exploring Animal Behavior; SR = Supplementary Reading on Angel. Reading list is tentative.
2 Assignments will be due at the beginning of class.
3 Describe and illustrate 3 action patterns of an animal of your choice.
4 Create kinetic diagrams comparing females and males
5 Bonus Activity on a Saturday 24 Oct 2009 (8 – 6 pm); site TBA

6 Nov

Last Day to Drop course