Instructor: Dr. Nathan Brennan  
Email: nbrennan@usf.edu

Office: Mote Aquaculture Research Park  
Office Hours: email to setup appointment

PREREQUISITES: SEE LINK...  


and...

- Have a general understanding of the MICROSOFT EXCEL program
- UNLIMITED ACCESS TO A RELIABLE COMPUTER & INTERNET
- FLASH DRIVE for saving work done during data analysis labs
- USF EMAIL ADDRESS & LOGIN for checking Canvas and receiving emails

COURSE DESCRIPTION: An introduction to the basic principles and concepts of ecology at the ecosystem, community, and population level of organization. Lecture only.

Ecology is a subdiscipline of biology concerning the ways in which organisms interact with each other and with their environment. As such, it is central to understanding many other biological phenomena, such as the spread of disease, agricultural production, conservation of endangered species, community disturbance and effects of human development, management of forests and fisheries, mechanisms for physiological tolerance of the environment, and evolutionary change. We will discuss important aspects of ecology at several different levels, including the physiological ecology of individuals, the growth of populations (population ecology), the interaction of populations (community ecology), and the functioning of entire ecosystems (ecosystem ecology).

COURSE GOAL: To provide students with a foundational understanding of ecological concepts and principles and develop their capabilities in applying scientific observation and methodology to further enhance their ecological understanding.

COURSE OBJECTIVES: Upon successful completion of this course, students will have gained

- exposure to the branches of ecology through lecture, reading and homework assignments, class discussions and exercises
- a deeper understanding of interactions between living and nonliving components of the environment;
- the ability to think scientifically and develop and test hypotheses;
- a deeper understanding of challenges facing ecologists and how they approach research
- an integrative understanding of how ecology relates to other areas of biology, and science.
- familiarity with how scientists use models, and how scientists acquire and analyze data to study the world.
- An understanding of the importance of objectivity, perspective, and shifting paradigms in ecological science.

COURSE STUDENT LEARNING OUTCOMES:
COURSE TEXT AND MATERIALS: You may use either the hardcopy version of the required text:


or one of the e-book versions of the same edition, available at http://www.sinauer.com/ebooks/ecology/. This site also provides online quizzes, a glossary, some electronic extensions to the text, flashcards, and reviews of some of the techniques described in the text. Some of the material on this site will be used in class, and some may be used on exams or quizzes.

- SimBio® Lab Pack access card ISBN 978-0-60535-306-7 (this can be purchased jointly with the text above) (this is for the Lab only)

- Download the program “Image J” for measurement exercises (lab mostly) at the following: http://imagej.nih.gov/ij/

CANVAS USE: The class syllabus is posted on Canvas, and online course management system. In this class Canvas will be used for:

- Email correspondence with instructor
- Obtaining class schedules and timelines
- Obtaining additional literature or instructions for specific assignments
- Submission of assignments
- Accessing quizzes

COMPUTER LAPTOP USE: USFSM requires all students to have laptops that can be brought with them to class. Students are expected to bring their laptops to class.

Grading Rubrix: we will use the plus-minus grading system (e.g. a+, B, B-) as follows:

- >=97.5% A+
- >=92.5 and < 97.5% A
- >=90 and < 92.5% A-
- >=87.5 and < 90% B+
- >=82.5 and < 87.5% B
- >=80 and < 82.5% B-
- >=77.5 and < 80% C+
- >=72.5 and < 77.5% C
- >=70 and < 72.5% C-
- >=67.5 and < 70% D+
- >=62.5 and < 67.5% D
- >=60 and < 62.5% D-
- >60 F
Grading categories will be weighted as follows:

- 10% Participation and attendance
- 30% Mid-term Exams
- 20% Final Exam
- 20% Individual presentations
- 20% Quizzes

**Participation and attendance:** 50% of these points will be for showing up for each class and 50% for positively participating verbally

**2 Mid-term Exams and 1 Final Exam:** Each mid-term Exam will focus on the material since the prior exam. The final exam will be cumulative. I am not going to “curve” the grading scale. Exams will include the topics actually covered before the exam. I will provide a list of items that you will be responsible to learn for each exam and details about what to expect at least 1 week prior to each exam. If you have any questions, please ask me.

**Individual Presentations:**
Each student will present a 15 minute power point presentation on a specific class-related article of their choice related to the course, after this, the student will lead a 10 minute discussion about the article (50% of category grade).

Each class period will also cover a section where students present a 5 minute description of a different peer-reviewed manuscript that and will present the basic scientific design and brief discussion about the study and potential issues or components that were interesting. These articles will be discussed in class.

**Quizzes:** Online quizzes will be required to be accomplished outside of class. These will be operated through Canvas.
<table>
<thead>
<tr>
<th>Date</th>
<th>Week</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-Jan-15</td>
<td>1</td>
<td>Chapter 1 Web of Life, Chapter 2 Physical Environment</td>
</tr>
<tr>
<td>12-Jan-15</td>
<td>2</td>
<td>Chapter 3 Biosphere</td>
</tr>
<tr>
<td>19-Jan-15</td>
<td>3</td>
<td><strong>MLK Day No Class</strong></td>
</tr>
<tr>
<td>26-Jan-15</td>
<td>4</td>
<td>Environmental Variation: Chapter 4 Temperature and Water; Chapter 5 Energy</td>
</tr>
<tr>
<td>2-Feb-15</td>
<td>5</td>
<td>Chapter 6 Evolution and Ecology, Chapter 7 Life History</td>
</tr>
<tr>
<td>9-Feb-15</td>
<td>6</td>
<td>Chapter 8 Behavior, Foragina Arena Theory</td>
</tr>
<tr>
<td>16-Feb-15</td>
<td>7</td>
<td><strong>Exam 1; Chapter 9 Population Distribution and Abundance</strong></td>
</tr>
<tr>
<td>23-Feb-15</td>
<td>8</td>
<td>Chapter 10 Population Growth; Chapter 11 Population Dynamics</td>
</tr>
<tr>
<td>2-Mar-15</td>
<td>9</td>
<td><strong>Spring Break; No Class</strong></td>
</tr>
<tr>
<td>9-Mar-15</td>
<td>10</td>
<td>Chapter 12 Competition; Chapter 13 Predation &amp; Herbivory</td>
</tr>
<tr>
<td>16-Mar-15</td>
<td>11</td>
<td>Chapter 14 Parasitism; Chapter 15 Mutualism and Commensulism</td>
</tr>
<tr>
<td>23-Mar-15</td>
<td>12</td>
<td>Chapter 16 Communities; Chapter 17 Succession</td>
</tr>
<tr>
<td>30-Mar-15</td>
<td>13</td>
<td><strong>Exam 2; Chapter 18 Biogeography; Chapter 19 Species diversity and Communities</strong></td>
</tr>
<tr>
<td>6-Apr-15</td>
<td>14</td>
<td>Ecosystems; Chapter 20 Production; Ch 21 Energy Flow and Food Webs</td>
</tr>
<tr>
<td>13-Apr-15</td>
<td>15</td>
<td>Chapter 22 23 Nutrient Cycling &amp; Conservation Biology</td>
</tr>
<tr>
<td>20-Apr-15</td>
<td>16</td>
<td>Last Day of Class; Chapter 24-25 Ecosystem Mgmt. Global Ecology; Course Review</td>
</tr>
<tr>
<td>27-Apr-15</td>
<td>17</td>
<td><strong>Final Exam</strong></td>
</tr>
</tbody>
</table>