BIOL5317
Advanced Community Ecology

GENERAL INFORMATION
Instructor: Dr. Carmen G. Montaña
Office: 123 Biology
Phone: 936-468-2322
Email: montanascg@sfasu.edu
Office Hours: Mondays 12:00 – 5:00pm - or by appointment

MEETING TIME
Wednesday (Section 001): 8:00-10:30AM, room # 225 Miller Science Building

COURSE DESCRIPTION
This course will examine the various theoretical and experimental approaches, and mechanisms structuring ecological communities (both plants and animals). The course consists of lectures, readings and discussion of primary literature, and individual projects.

COURSE GOALS
Through lectures, readings and discussions, students will obtain an overview and achieve in-depth knowledge of the field of community ecology, including historical development of the discipline, current issues and methodologies, and practical applications in areas such as natural resource management, biological conservation, agriculture, and human health. Students also will practice critical thinking, communication skills, and professionalism.

COURSE FORMAT
Approximately half of the class sessions will consist of lectures by the instructor and instructor-led discussions. Other sessions will consist of student-led, instructor-facilitated group discussions of recent journal articles covering cutting-edge topics in community ecology.

PROGRAM LEARNING OUTCOMES (PLOs)
The course is designed to address the following Program Learning Outcomes, as given in the M.S. Program in the Department of Biology:
PLO #1. The student will demonstrate a good knowledge base in biological concepts and be able to integrate knowledge with critical thinking skills to become problem solvers.
PLO #2. Students will clearly communicate scientific information in oral and written form.
PLO #3. The student will demonstrate an understanding of scientific methods and design original scientific research.

STUDENT LEARNING OUTCOMES
Upon completion of this course, successful students will be able to:
1. Demonstrate an understanding of community ecology. Specifically, be able to define ecological community and to articulate the underlying processes that maintain these communities (PLO’s 1 and 2).
2. Demonstrate competency in gathering data and published literature to explain the ecological and evolutionary responses of species to changing environments (PLO’s 1, 2, and 3).
3. Demonstrate competency for applying population dynamics models in the context of community dynamics and metacommunities (PLO 1 and 2).
4. Demonstrate competency in written and oral communication skills (PLO 2).

**REQUIRED BOOK**


**ADDITIONAL (BUT NOT REQUIRED) TEXTBOOKS** – Students may consult the following textbooks that deal with community ecology: *Community Ecology* by Peter J. Morin; *Population Ecology* and *Community Ecology: Processes, Models, and Applications* edited by Herman A. Verhoef and Peter J. Morin; and *Community Ecology* by Gary G. Mittelbach & Brian J. McGill.

**COURSE REQUIREMENTS**

- Attend all lectures.
- Absences for previously scheduled activities will only be excused if they are communicated well in advance. If you have not discussed an absence with instructor ahead of time, it will be considered unexcused unless proper documentation is provided (see class policies below).
- Read all required material.

**GRADING**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final exam</td>
<td>20%</td>
</tr>
<tr>
<td>Class discussion/participation</td>
<td>20%</td>
</tr>
<tr>
<td>Community Ecologist presentations</td>
<td>10%</td>
</tr>
<tr>
<td>Community Ecology Review paper</td>
<td>Bibliographic review (5%) First draft report (10%) Second draft (15%) Final review paper (20%)</td>
</tr>
</tbody>
</table>

**FINAL GRADES**

Final grades will be assigned based on the following: A ≥ 90.0%; 90.0% > B ≥ 80.0%; 80.0% > C ≥ 70.0%; 70.0% > D ≥ 60.0%; 60.0% > F. There will be no curve and no individual extra credit.

**ASSIGNMENT DETAILS**

*Final Exam*

The final in-class exam will cover lectures, textbook chapters, and any other assigned material discussed in class. The format of the final exam will be similar to a written comprehensive preliminary exam at the Master Degree level, consisting of three essay questions. In this exam, students are expected to demonstrate a good knowledge of the concepts learned in class and be able to integrate the knowledge with critical thinking skills.
Community Ecology/Ecologist Presentation
Each student will give two 10-15 minute powerpoint presentations focused on the research of an influential community ecologist. The presentation should focus and discuss their major research accomplishments and any important studies produced (i.e., peer-reviewed publications) during their career. The presentation should focus on their original research studies and **not** review papers. I **strongly** encourage students to come see me **before** they begin their research/presentation for guidance.

Discussion Participation
Students are expected to participate in weekly discussions on the assigned readings. To facilitate discussion, each student is required to bring in two typed questions that they will submit each class. The grade will be determined based on the frequency of their participation as well as thoughtfulness/utility of their contributions to class discussion.

Community Ecology Review paper
The end goal of this course will be to compile a review paper to be submitted a peer-reviewed journal at the end of the semester. M.S. students (enrolled in BIOL5317) will contribute to one section of the manuscript. PhD. students (enrolled in BIOL6317) are expected to contribute substantially to the manuscript and contribute to two or more sections.

**Importantly**, the intended **Review Paper** will require extensive efforts outside of class meeting times, as well as frequent additional discussions with the instructor. I will help provide initial reading lists and suggested in-class papers. The class meeting times are intended primarily for garnering feedback and input from other students, helping to guide the final writing product. Each student (or student group) will likely have a different approach in working toward the final written requirement. For instance, students with topics early in the semester will use the in-class meeting to hone in and identify key components to be included in the subsequent writing effort; students at the end of the semester should already have a draft (Report) of their section compiled, and use the in-class period for refinement and feedback. As a general guide, each final sub-section (Report) should be only ~800-1,200 words (obviously will vary among topics, but a vague target).

**Note:** 50% of the course grade will result from efforts contributing to each section to the final **Review Paper**. Do not wait until the last minute to complete any of these assignments as it may severely impact your grade.

**Bibliographic Review:** the aim of this assignment is to gauge students’ progress in reviewing the literature towards the review paper section. Students must provide references for **at least** 10 studies relevant to their section topic. In addition, students must briefly summarize the major findings of the study (3-5 sentences/paper).

**Important:** More details about the course Review Paper and section of the review paper will be provided in a separate document early in the semester.
## Tentative Lecture Schedule

<table>
<thead>
<tr>
<th>Week of</th>
<th>Topic</th>
<th>Book Chapter/Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/25</td>
<td>Introduction to community ecology&lt;br&gt;Class and Review paper details</td>
<td>Paper # 1</td>
</tr>
<tr>
<td>9/1</td>
<td>Historical perspectives and key contributions, ideas and theories in community ecology</td>
<td>Ch. 3&lt;br&gt;Paper # 2</td>
</tr>
<tr>
<td>9/6</td>
<td>Review paper outlined papers: Ontogenetic niche &amp; community organization</td>
<td>Ch. 2&lt;br&gt;Paper # 3</td>
</tr>
<tr>
<td>9/15</td>
<td>Historical biogeography and macroecology: general patterns</td>
<td>Ch. 4&lt;br&gt;Paper #4</td>
</tr>
<tr>
<td>9/22</td>
<td>Historical biogeography and macroecology: High level processes</td>
<td>Ch. 5</td>
</tr>
<tr>
<td>9/29</td>
<td>Competition, niches and resource partitioning</td>
<td>Paper #4&lt;br&gt;First bibliographic review due</td>
</tr>
<tr>
<td>10/6</td>
<td>The Fundamentals of Predator-Prey Interactions</td>
<td>Paper # 5&lt;br&gt;Paper # 6</td>
</tr>
<tr>
<td>10/13</td>
<td>Food webs and other network perspectives</td>
<td>Paper # 7</td>
</tr>
<tr>
<td>10/20</td>
<td>Community assembly: regime shifts and alternative stable states</td>
<td>Paper # 8&lt;br&gt;First rough draft review paper</td>
</tr>
<tr>
<td>10/27</td>
<td>Metacommunities and assembly rules</td>
<td>Ch. 7&lt;br&gt;Paper # 9</td>
</tr>
<tr>
<td>11/3</td>
<td>Empirical evidence in ecological communities</td>
<td>Ch. 8 ,9, 10</td>
</tr>
<tr>
<td>11/10</td>
<td>Mechanisms creating community structure along gradients, between-region convergence</td>
<td>Paper # 10</td>
</tr>
<tr>
<td>11/17</td>
<td>Application of community ecology</td>
<td>Paper # 11&lt;br&gt;Second rough draft review paper</td>
</tr>
<tr>
<td>11/22</td>
<td><strong>Thanksgiving Break – No Class</strong></td>
<td>Review paper preparation</td>
</tr>
<tr>
<td>12/1</td>
<td>From process to patterns and back&lt;br&gt;The challenge of integrating perspectives. Future of community ecology</td>
<td>Ch. 11 &amp; 12</td>
</tr>
<tr>
<td>12/8</td>
<td><strong>FINAL EXAM</strong></td>
<td>Final review paper due</td>
</tr>
</tbody>
</table>

**NOTE:** I will be assigning **required** papers each week throughout the semester. Each student will be required to lead assigned papers/chapters.
CLASS POLICIES

1. **Communicating to your professor**: Email will be the primary means of communication for the course. So please, check your email often. *Any correspondence to your professor should follow the following format*: subject line: BIOL 5317, to whom (Dr. or professor xx), statement, thank you, and student’s name. The professor has the right of not answering emails to those students that fail to follow this format. *Note*: Do not contact me via D2L as I do not utilize that method for class communication.

2. **Grades cannot be discussed via e-mail at any time** due to federal law. I will speak to you in person instead during my office hours. DO NOT involve a third-party who is not affiliated in an official capacity with SFASU (e.g., friend, roommate) in any matters pertaining to your enrollment in this course. Your instructor is legally prohibited from discussing most course/grade-related issues with third parties according to the Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99).

3. **Complete lecture notes will not be posted online**: I highly recommend coming to lecture and taking notes. Please note that abbreviate lectures notes will be available to students before the class time (I recommend printing/downloading them). However, students tend to retain information better by writing it down. Taking photographs of the slides will not be permitted in class. Taking photographs of the slides will constitute as disruptive behavior (see policy below).

4. **Completing assignments**: It is your responsibility to complete assignments in a timely manner. I will not accept any late submissions on discussion questions.

5. **Attendance policy**: Attendance is mandatory. One unexcused absence will result in your final grade being reduced by one letter grade; two unexcused absences will result in your final grade being reduced to an F.

6. **Entering class late**: Entering a lecture late can qualify as disruptive behavior when the student disturbs me during my lecture or disturbs the students around them while becoming situated. See below for more details.

7. **Missed Exams**: The only exception for missing the final in-class exam is if the absence is planned and approved by the instructor at least 15 days prior to the date of absence or upon receipt of a documented medical excuse or an excuse provided by the office of the Vice President for Academic Affairs. In this case an alternative date for the exam will be given.

8. **Disruptive behavior policy**: A student may be asked to leave the classroom for any behavior I find disruptive. A first offence will not be penalized; however, further offences may be penalized with reduction in a student’s final grade as follows: 10% for a second offence, 20% for a third offence, etc.

9. **Plagiarism policy**: A first offence will be penalized with a zero that cannot be dropped. A second offence will be penalized with an F and/or the option to drop the course.

10. **Extra credit**: There will be NO PERSONAL extra credit or bonus point opportunities under any circumstance or for any reason. I reserve the right to assign class bonus points at any time.
OTHER POLICIES

Conduct Policy: Usage of tobacco products is not permitted in this class.

Academic Integrity (A-9.1): Academic integrity is a responsibility of all University faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by University policy on penalties for cheating and plagiarism. Definition of Academic Dishonesty: Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit. Please read the complete policy at http://www.sfasu.edu/policies/academic_integrity.asp

Withheld Grades Semester Grades Policy (A-54): Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

Students with Disabilities: To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

Responsible Use of Technology: It is expected that all students will only use cell phones, PDAs, laptop computers, MP3 players and other technology outside of class time or when appropriate in class. Answering a cell phone, texting, listening to music or using a laptop computer for matters unrelated to the course may be grounds for dismissal from class or other penalties.

Acceptable Student Behavior: Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom.
Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.

**University Policy 13.9 deals with firearms and the concealed carry policy.** Students with concealed carry licenses that choose to carry on campus are required to follow all Texas laws and University policies and it is their responsibility to understand and comply accordingly. See: [http://www.sfasu.edu/policies/13.9-Firearms-Explosives-and-Ammunition.pdf](http://www.sfasu.edu/policies/13.9-Firearms-Explosives-and-Ammunition.pdf)

**Mental Health Resources.** SFASU values students’ mental health and the role it plays in academic and overall student success. SFA provides a variety of resources to support student’s mental health and wellness. Many of these resources are free, and all of them are confidential.

**On-campus Resources:**
SFASU Counseling Services
www.sfasu.edu/counselingservices
3rd Floor Rusk Building
936-468-2401

SFASU Human Services Counseling Clinic
www.sfasu.edu/humanservices/139.asp
Human Services Room 202
936-468-1041

**Crisis Resources:**
Burke 24-hour crisis line 1(800) 392-8343
Suicide Prevention Lifeline 1(800) 273-TALK (8255)
Crisis Text Line: Text HELLO to 741-741