Advanced Community Ecology
BIOL5317-001

GENERAL INFORMATION
Instructor: Dr. Carmen G. Montaña
Office: 123 Biology
Phone: 936-468-2322
Email: montanascg@sfasu.edu (preferred form of contact)
Office Hours: Mondays 8:00 AM – 1:00pm - or by appointment

MEETING TIME
Wednesday: 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. In addition, we will have four invited as guest lecturer (Ecologists from outside SFASU).

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 rules below).
- Read all required material.

**GRADING**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
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<tbody>
<tr>
<td>Participation - Class paper discussion/presentation (Through the semester)</td>
<td>50</td>
</tr>
<tr>
<td>Participation - Community Ecologist presentations</td>
<td>50</td>
</tr>
<tr>
<td>Community Ecology literature review for research paper</td>
<td>100</td>
</tr>
<tr>
<td>Final Individual Project oral presentation/peer-reviewed evaluation</td>
<td>100</td>
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</tbody>
</table>

Total 300

Final grade will calculate out of 300 total points.
The final grades 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.
**CLASS ACTIVITY DETAILS**

**Participation:** Students are expected to actively participate during class lectures, paper discussions, and presentations.

**Students’ discussion-participation** will be recorded on a scale of 0 through 10 using the following guideline:

- 0-2 rarely, if ever, contributes;
- 3-4 occasional participation, but generally non-substantive, adding little new information;
- 5-6 occasional participation, but generally well thought out, useful contributions;
- 7-8 regular participation, sometimes useful, sometimes not;
- 9-10 regular participation, always useful.

1) **Participation - Paper discussion** – Throughout the semester, each student will have the opportunity to lead 1 or 2 paper discussions. Students are required to provide a critical analysis/summary of each paper discussed. This is, discuss the relevance of the papers for cutting-edge research in community ecology, provide comments on the research design and methods used, and the applications for ecological research.

To facilitate discussion, the presenters are encouraged to make a PP presentation highlighting the main aspects of the paper including: Title, objectives, hypothesis, methods, and results.

The entire class is expected to read each paper as preparation for the discussion and be expected to participate fully in the discussions. 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 (see information-scale above).

A list of papers for discussion will be provided by the professor at the beginning of the semester.

2) **Participation - Ecologist Presentation** – Throughout the semester, each student will have the opportunity to give a 15-20-minute powerpoint presentation focused on the research of an influential community ecologist. The presentation should focus and discuss the major research accomplishments and any important studies produced (i.e., peer-reviewed publications) during the ecologist 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.

A list of Ecologists with focus on community ecology will be provided by the professor the first day of class.

3) **Research paper for final class project presentation** – The end goal of this course will be to deliver an oral presentation of a final project that includes any component of community ecology. The final project will require to write a short manuscript about the research that is intended to be presented for the final project. The final project can be focus on 1) a portion of the student thesis...
research project, 2) an independent graduate study project, 3) or simply a review paper focused on discussing a specific topic in community ecology (please, discuss with the professor about #3).

In order to complete and present the final project, the student will write up a short scientific manuscript of the project. This final research project is intended to provide the student with the opportunity to get feedback in their research proposal or present ongoing research results.

Importantly, the intended Research Paper will require extensive efforts outside of class meeting times, as well as frequent additional discussions with the professor. I will help provide 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 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 of their review, and use the in-class period for refinement and feedback.

As a general guide, each paper will consist of the following sections: 1) Title; 2) Introduction; 3) Aim(s) [question, hypothesis, predictions]; 4) Results (text, figure, tables, others); 6) Discussion/conclusion (interpretation of results); and 7) Cite Reference list.

Throughout the semester, the professor and students will work on the content of the manuscript to provide feedback and make revisions before the final paper is submitted and the presentations start. The student is responsible to discuss the progress of the paper with the professor and get feedback as the semester progresses. If the student does not have a thesis research project yet or an independent research project, then the professor can provide guidance in what project he/she can develop and present.

The final paper must be submitted one week prior to the presentation of the final project (April 17, 2024).

Note: Do not wait until the last minute to complete your research paper as it may severely impact your grade. More details about the research paper and final presentation will be provided in a separate document early in the semester.

4) Final Individual Project [Oral presentation/peer-reviewed evaluation]: each student will give a 20 minutes PP presentation based on the final research paper submitted on April 17.

The oral presentation will follow the format as if you were to present at a scientific meeting. Each section must be consistent with the research paper submitted: 1) first page: Title of the project and presenter name; 2) purpose of the project (brief introduction, theoretical background of the project, etc.), 3) Research question(s), Objectives and Hypothesis; 4) Results / Discussion (this section can be combined, as you present the results, then you discuss them); and finally 5) a section (1-2 slides) that summarize the findings and state the implications of your research for conservation of ecological communities, biodiversity, etc.
The presentation grade will be evaluated on the following factors: 1) the ability to analyze the scientific information being presented, 2) overall understanding of the subject being presented, 3) material organization and use of visual aids, 4) language skills, 5) presence [eye contact with public, body language], 6) communication and use of time allotted, among other. 7) student evaluations by peers are expected.

**TENTATIVE LECTURE SCHEDULE**

<table>
<thead>
<tr>
<th>2024 WEEK OF</th>
<th>TOPIC</th>
<th>BOOK CHAPTER/PAPERS</th>
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<tbody>
<tr>
<td>1/24</td>
<td>Introduction to community ecology&lt;br&gt;Class/presentations/literature review/project details&lt;br&gt;General framework for community ecology</td>
<td>Papers #1&amp;2</td>
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<tr>
<td>1/31</td>
<td>Historical perspectives and key contributions, ideas and theories in community ecology</td>
<td>Ch. 2-3&lt;br&gt;Simberloff (2004)</td>
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<td>2/7</td>
<td><em>Outline and discussion of student projects (Part 1)</em>&lt;br&gt;Ecological communities/community organization</td>
<td>Ch. 2&lt;br&gt;Ricklefs (2008).&lt;br&gt;Boorks &amp; Weir (2009)</td>
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<td>2/14</td>
<td>Historical biogeography: General patterns of ecological communities</td>
<td>Ch. 4-5&lt;br&gt;Losos and Ricklefs (2009)</td>
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<td>2/21</td>
<td>Mechanisms creating community structure along gradients, between-region convergence</td>
<td>Diamond (1973)&lt;br&gt;Bower &amp; Winemiller (2021)</td>
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<td>2/28</td>
<td>Community assembly and species traits&lt;br&gt;Guest lecture: <em>Dr. Caroline Arantes</em> (West Virginia University)</td>
<td>Arantes et al. (2019)</td>
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<td>3/13</td>
<td>Spring Break – No Class</td>
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<td>3/20</td>
<td>Macroecological analysis of communities.&lt;br&gt;Study case.&lt;br&gt;Guest lecture: <em>Dr. Friedrich Keppeler</em> (University of Wisconsin-Madison)</td>
<td>Okie et al. (2014)</td>
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<td>3/27</td>
<td>Metacommunities, local and regional processes&lt;br&gt;Guest lecture: <em>Dr. Christopher Schalk</em> (US Forest Service)</td>
<td>First rough draft research paper&lt;br&gt;Leibold et al. (2004)</td>
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<tr>
<td>4/3</td>
<td>Empirical evidence in ecological communities</td>
<td>Ch. 7</td>
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<tr>
<td>4/17</td>
<td>Application of community ecology.&lt;br&gt;Future of community ecology&lt;br&gt;Beginning of Student presentations</td>
<td>Winemiller et al. (2015)&lt;br&gt;Ch. 12&lt;br&gt;<em>Research paper due</em></td>
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<tr>
<td>4/24</td>
<td>Continuation of Student presentations</td>
<td></td>
</tr>
<tr>
<td>5/1-8</td>
<td>FINAL PRESENTATIONS/CLASS REVIEW</td>
<td></td>
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CLASS RULES

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): **Dr. Montaña (or Professor Montaña)**
   - Statement: xxxxxxxxxxxxxxxxxxxxx
   - Thank you,
   - and student’s name: **Charles Brown**

   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. **Taking photographs of the slides will not be permitted in class. Taking photographs of the slides will constitute as disruptive behavior.**

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 the instructor during the lecture or disturbs the students around them while becoming situated.

7. **Missing assignments:** The only exception for missing the assignments 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 assignment 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.

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.

**CLASS POLICIES**

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

**Academic Integrity (4.1)**: (see [https://www.sfasu.edu/docs/policies/10.4.pdf](https://www.sfasu.edu/docs/policies/10.4.pdf))

*The Code of Student Conduct and Academic Integrity* outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities.

Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements.

Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam.

Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially.

**Withheld Grades Semester Grades Policy (5.5)**: 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. For additional information, go to https://www.sfasu.edu/policies/course-grades-5.5.pdf.

**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/

**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.

**Student Wellness and Well-Being** SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc.

If you are experiencing concerns, seeking help, SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

**On-campus Resources:**

*The Dean of Students Office* (Rusk Building, 3rd floor lobby)
www.sfasu.edu/deanofstudents
936.468.7249
dos@sfasu.edu

*SFA Human Services Counseling Clinic* Human Services, Room 202
www.sfasu.edu/humanservices/139.asp
936.468.1041

*The Health and Wellness Hub* “The Hub”
Location: corner of E. College and Raguet St.
To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit. Services include:

- Health Services
- Counseling Services
- Student Outreach and Support
- Food Pantry
- Wellness Coaching
- Alcohol and Other Drug Education

www.sfasu.edu/thehub
936.468.4008
thehub@sfasu.edu

Crisis Resources:
- Burke 24-hour crisis line: 1.800.392.8343
- National Suicide Crisis Prevention: 9-8-8
- Suicide Prevention Lifeline: 1.800.273.TALK (8255)
- johCrisis Text Line: Text HELLO to 741-741