FOR 4306 – WILDLIFE POPULATION ECOLOGY

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Email: Reuber.Antoniazzi@sfasu.edu
Office Hours M 3:00-5:00 pm or by appointment

MEETING DETAILS
On Tuesdays: 4:00 – 6:30 pm, 222 Forestry

COURSE DESCRIPTION
When organisms, as white oaks, orcas, cougars, fly agaric, or monarch butterfly, are demographically, genetically, or spatially disjunct from other groups of conspecific individuals, they comprise a population. Population ecology is the study of the size, composition, and distribution of populations and the processes that determine these attributes of populations. This course starts with a detailed examination of the dynamics of individual populations and go on to consider how interspecific interactions impact the populations itself. This course is strongly focused on the underlying theories of population ecology and the mathematical formulations that accompany these theories.

COURSE GOALS
Using lectures, readings and class discussions students will be able to immerse in the theoretical background related to population ecology. Students will develop an appreciation for quantitative approaches to population ecology, for simple mathematical models and for ecological population theory. Students will expand an understanding of the principles of population growth and regulation, and the role of interspecific interactions (including competition, predation, herbivory, parasitism and mutualism) on it. Moreover, students will relate the basic principles of population ecology to the higher levels of ecological organization, such as metapopulations. The ultimate goal of this course is to provide the student the ability to better understanding the real wildlife populations, increasing their strength to plan management and conservation actions.

PROGRAM LEARNING OUTCOMES
The course is designed to address the following Program Learning Outcomes, as given in the BSF Program Matrix †:
1. Demonstrate understanding and competency of forest ecology and biology;
2. Demonstrate understanding and competency in the measurement of forest resources;
3. Demonstrate understanding and competency in managing forest resources;
4. Demonstrate understanding and competency of forest resource policy, economics, and administration.
5. Demonstrate understanding and competency in oral and written communication skills.

† Items 1–4 above are required by the Society of American Foresters, the program's accrediting agency.

### B.S. Forestry Program Learning Outcomes
#### Proficiency Levels

<table>
<thead>
<tr>
<th>Forestry Common Core</th>
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<tbody>
<tr>
<td>Course</td>
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<tr>
<td>FOR 4306 Advance</td>
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### STUDENT LEARNING OUTCOMES

Upon completion of the course, students will:

a. **Foundational knowledge**
   - have a clear understanding of the fundamental and current issues in predation theory and predator ecology;
   - have a clear understanding of important concepts related to predator ecology, conservation, and management.

b. **Application**
   - be able to find information on and analyze current predator ecology and conservation issues.
   - be able to identify current knowledge gaps and needs in predator ecology and conservation/management research.

c. **Integration**
   - identify the interactions between predation theory and other realms of knowledge such as conservation biology, ecology, economics, and policy design.

d. **Human dimension**
   - be able to identify ways in which one’s or someone else’s personal life could affect or be affected by addressing issues related to the conservation and management of predators.

e. **Future learning**
   - be familiar with a number of popular ecology journals and other sources of knowledge about animal behavior and community ecology.
   - have some specific ideas about what other knowledge would be desirable to have about predator behavior, conservation, and management.

### TEXTBOOK AND READINGS

The course is majority based on the general textbook: Rockwood, L.L. with Witt, J.W. 2015 (2nd edition). Introduction to population ecology, Wiley Blackwell. It is not a required textbook, but it can help students that want a good source of information to follow the lectures.
Grades

<table>
<thead>
<tr>
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<th>Points</th>
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<tbody>
<tr>
<td>Exams (100 points each)</td>
<td>200</td>
</tr>
<tr>
<td>Class Presentations</td>
<td>80</td>
</tr>
<tr>
<td>Discussion Participation</td>
<td>50</td>
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<tr>
<td>Assignments</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>350</td>
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Grading

Final grade of students (A–F) will be calculated out of 350 total points. There will be no curve and no individual extra credit. Final grades will be assigned based on the grading scale as follows:

- 100% > A ≥ 90%
- 90% > B ≥ 80%
- 80% > C ≥ 70%
- 70% > D ≥ 60%
- 60% > F ≥ 0%

Assignment Details

General course requirements: Knowing and understanding the material presented and discussed in lectures is the keystone for successfully completing this course; then, it is critical being up to date with the reading assignments. Considering that the class meets once a week and I expect all students to have perfect attendance (please see Attendance policy subsection, within Class policies section) and be well prepared for class.

Exams: The in-class exams will cover lectures, textbook chapters, and any other assigned material (papers, videos, etc.). Tests can be viewed during office hours.

Class presentation: Each student will give one 10–12-minute presentations during the semester of a peer-reviewed publication. The presentation should focus and discuss the purpose of the article (theoretical background of the study), methodology (briefly), results and major findings, and discussion/conclusions. The presentation should focus on primary research studies (original articles) and not review papers. The articles will be previously provided by the instructor, at least, one week prior to the presentation. If some student wants to change the paper designated by the instructor, she/he will need to contact the instructor proposing a new paper. Importantly, students must have their research papers approved by the instructor before they begin to work on their presentation. The paper proposed by the student must be the study of populations of any organism and should be published within the last decade (2014-2023) in an indexed peer-reviewed international journal.

Discussion participation: Students are expected to participate in weekly discussions on the assigned readings; *readings are not optional*. Each student will do, at least, one question and will provide one answer for some question each class. The grade will be determined based on the frequency of their participation as well as the thoughtfulness/utility of their contributions to class discussion. The dynamic of article discussions can be structured using different tools and approaches, in order to improve the quality of the interchange of knowledge among all students and the instructor.

Assignments: Some small assignments will be proposed during the course, and they will be graded. It can include, but not limited to, readings, searches, questions, tasks, and others.

TENTATIVE LECTURE SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Day</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>01/23</td>
<td>General concepts of ecology – Introduction to population ecology</td>
</tr>
<tr>
<td>2</td>
<td>01/30</td>
<td>Single Species Populations Density Independent Growth</td>
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<tr>
<td>3</td>
<td>02/06</td>
<td>Density Dependent Growth and Intraspecific Competition</td>
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<tr>
<td>4</td>
<td>02/13</td>
<td>Population regulation and Populations with age structures</td>
</tr>
<tr>
<td>5</td>
<td>02/20</td>
<td>Populations with age structures (cont.)</td>
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<tr>
<td>6</td>
<td>02/27</td>
<td>Metapopulation Ecology</td>
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<tr>
<td>7</td>
<td>03/05</td>
<td>Exam I</td>
</tr>
<tr>
<td>8</td>
<td>03/12</td>
<td>Spring Break</td>
</tr>
<tr>
<td>9</td>
<td>03/19</td>
<td>Life history strategies</td>
</tr>
<tr>
<td>10</td>
<td>03/26</td>
<td>Interspecific interactions among populations, Interspecific competition</td>
</tr>
<tr>
<td>11</td>
<td>04/02</td>
<td>Mutualism</td>
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<tr>
<td>12</td>
<td>04/09</td>
<td>Host-parasite and Predator/prey interactions</td>
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<tr>
<td>13</td>
<td>04/16</td>
<td>Plant-herbivore interactions</td>
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<tr>
<td>14</td>
<td>04/26</td>
<td>Multitrophic interactions</td>
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<tr>
<td>15</td>
<td>04/30</td>
<td>Exam II</td>
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</tbody>
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CLASS POLICIES

Notes: Although lecture slides will be available to students at least before each exam, students are highly recommended to taking their own notes at each lecture. Much information is complemented by the instructor beyond slides, and this will be very helpful to students, in order to obtain maximum success in the exams. The students have to occupy the front rows of the classroom.

Completing assignments: It is the responsibility of students to complete assignments independently and in a timely manner. Deadlines must be accomplished as a premise of the assignments. Any doubt/disagreement/discordance must be talked with the instructor with appropriate anticipation in order to avoid delays or misunderstanding of any nature.
Attendance policy: Punctually attending all lectures is a requirement for this course. Justified absences will be accepted with the proper documentation (e.g., documented medical excuse). Each unexcused absence from a lecture will result in a reduction of 10% in the total number of points accumulated during the entire course. Note that absence from class also results in the inability to earn the points distributed during each class, for example, provided by the discussion participation (please see above on the Assignment details section). In the case of excused absences, the student must contact the instructor to accomplish the lost activities.

Missed Exams: Alternative exams will be given only for students that were absent due to medical issues or under the consent of the Vice President for Academic Affairs, properly documented. A student who wishes to make up an alternative exam will have 7 calendar days after s/he returns; after 7 calendar days, the student will receive a zero for that exam.

Forestry Style Manual: The Forestry Style Manual should be used to guide the students in how to communicate with the instructor and to complete assignments.

Communicating to your professor: Email will be the primary means of communication for the course, so please do not use D2L - Bright space to communicate with the instructor. The student has to check the email often in order to keep up to date with the class instructions and announcements. Grades cannot be discussed via e-mail at any time due to federal law. The instructor will speak to the student in person instead of during office hours (please see above). DO NOT involve a third party who is not affiliated in any 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).

Disruptive behavior policy: A student may be asked to leave the classroom for any disruptive behavior that disturbs the good environment of the class. Offenses may be penalized with a reduction of 10% of the student’s final grade. Examples of disruptive behavior are, but not limited to, entering class late, misuse of cellphone and other gadgets, take pictures or recording videos and audio, debauchery, noises, etc.

Academic integrity: 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.

Extra credit: There will be NO PERSONAL extra credit or bonus point opportunities under any circumstance or for any reason. However, the instructor reserves the right to assign class bonus points at any time.

OTHER POLICIES

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.

Firearms and the concealed carry policy: 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

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](http://www.sfasu.edu/thehub)
936.468.4008
[thehub@sfasu.edu](mailto:thehub@sfasu.edu)