Biology 3017.001 - Laboratory
Biology of Teachers (Grades 4-8)

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Office: S239
Office Hours: posted in Brightspace
Class meeting time and place: TR 1:00-3:50; S119

Course Description:
This course provides instruction in the main areas of biological science for which science teachers (Grades 4-8) are expected to demonstrate competency for teacher certification. Students seeking certification in Early Childhood-Grade 6 Generalist are also encouraged to enroll. Topics include basic principles of science, structure and function of living things, reproduction and heredity, adaptation and evolution, regulatory mechanisms and behavior, and organisms and environment. This course may not be used to meet graduation requirements by a student majoring/minoring in the College of Sciences and Mathematics.

Number of Credit Hours: 4 semester hours – 3 hours lecture and 2 hours lab per week.

Course Prerequisites and Corequisites:
Prerequisites: None; Corequisites: 3417

Program Learning Outcomes:
There are no specific program learning outcomes for this major addressed in this course. This course is a general education course and a service course.

General Education Core Curriculum Objectives:
There are no specific general education core curriculum objectives in this course. This course is not a core curriculum course.

Course Objectives:
To train science teachers, in grades four through eight, on the basic concepts of biological principles. To demonstrate the applications of these concepts in the classroom, especially using appropriate hands-on exercises.

Student Learning Outcomes:
Upon completion of this course, the students are expected to:

- Understand that investigations require a research question, careful observations, data gathering, and analysis of the data to identify the patterns that will explain the findings.
- Understand that scientific investigations are used to learn about the natural world.
- Understand that all living organisms are made up of smaller units called cells.
- Understand that all cells use energy, get rid of wastes, and contain genetic material.
- Understand the internal structures within plant and animal cells that allow them to obtain energy, get rid of wastes, grow, and reproduce in different ways.
- Understand that cells can organize into tissues, tissues into organs, and organs into organ systems.
- Understand that the major functions of human body systems.
- Understand the relationship between living organisms and their environment.
• Understand that different environments support different living organisms that are adapted to that region of Earth.
• Understand that successful organisms can reestablish a balance through different processes such as a feedback mechanism.
• Understand that during both sexual and asexual reproduction, traits are passed onto the next generation.
• Understand that changes in traits sometimes occur in a population over many generations.
• Understand the interactions between organisms in ecosystems
• Understand how biotic and abiotic factors affect the number of organisms and populations present in an ecosystem
• Understand that ecological succession can be seen on a broad or small scale.

Text and Material:  None for the lab

Course Requirements:
Lab will be composed of exercises conducted in class, activities completed outside of class, and selected lab simulation found on-line. Much of the lab experiences will be in cooperative learning groups.

Each student will submit a lab report based on data collected from the group. Lab reports will follow the provided template. Each student is expected to maintain a notebook of the activities, including a student data sheet appropriate to the grade level of the experiment.

Hand-written copies are not acceptable. Lab reports will be turned in weekly and will be accepted if turned in late with a 25% deduction per day late.

Grading Policy:
Lecture and lab are combined into one gradebook for this course. Please see the grading policy for BIOL 3417.

Attendance Policy:
Regular and punctual attendance is expected. The value of a college education depends upon the student’s full participation. Because students are expected not merely to receive information passively or to pass examinations but to participate actively in class, it is important that unnecessary class absences be avoided. Students are expected to be present for all classes and no absence will be automatically excused.

The missing of 6 or more lecture/lab periods will result in the reduction of your course grade by one full letter grade. There will be no distinction between excused and unexcused absences in counting absences. Legitimate excuses for absences only affect whether students may be given an opportunity to make up work. Students will be responsible for all missed work.

If you come in late you must check with me after class to clear any record of absence for that day. This is your responsibility. Reoccurring tardiness should be explained. A seating chart will be utilized in this course. In addition, an attendance sheet will be passed around on which you will put your signature next to your name. It is your responsibility to see that the role sheet is signed before leaving the lecture class. Do not sign in for another student, doing so will result in a significant reduction in your course grade and the assignment of seats for all students in the class. It is also your responsibility to keep up with the number of absences that you have accrued.
Some appropriate reasons for absenteeism are: an illness with dated medical notes; death in the immediate family with clippings from a newspaper announcing the death; scheduled athletic events; scheduled academic events. Other reasons can be discussed, but may not be excused. You are responsible to know what was announced and what material was covered in class during your absence. Lecture notes are not available from your instructor.

The will be no make-up of individual experiments.

**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.

**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 coursework 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 to compute 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 promptly may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).

**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](http://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](http://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

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
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<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Aug 29</td>
<td>Introduction to the Lab and “What is Science?”</td>
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<td>2</td>
<td>Sep 5</td>
<td>Lab – Scientific Method</td>
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<td>3</td>
<td>Sep 12</td>
<td>Lab – Cell Structure and Function</td>
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<td>4</td>
<td>Sep 19</td>
<td>Lab - Photosynthesis</td>
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<td>5</td>
<td>Sep 26</td>
<td>Lab – Respiration</td>
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<td>6</td>
<td>Oct 3</td>
<td>Lab – Mendelian Genetics</td>
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<td>7</td>
<td>Oct 10</td>
<td>Lab – Patterns of Inheritance</td>
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<td>8</td>
<td>Oct 17</td>
<td>Lab - Evolutionary Processes</td>
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<td>9</td>
<td>Oct 24</td>
<td>Lab – Animal Behavior</td>
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<td>10</td>
<td>Oct 31</td>
<td>Lab – Population Ecology</td>
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<td>11</td>
<td>Nov 7</td>
<td>Lab – Taxonomic Systems</td>
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<td>12</td>
<td>Nov 14</td>
<td>Lab – Community Ecology</td>
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<td>13</td>
<td>Nov 21</td>
<td>Thanksgiving Holiday</td>
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<td>14</td>
<td>Nov 28</td>
<td>Lab – Ecosystems</td>
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<td>15</td>
<td>Dec 5</td>
<td>Lab - Biodiversity</td>
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* Schedule and topics to be covered are subject to change based on the availability of lab materials.