Instructor: Dr. A. Van Kley
Department: Biology
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Phone: 468-2569
Office: S236
Office hours: TR 14:00-15:30; 16:45-17:45, or by appointment
Class meeting time and place: each T 11:00 room S236
Text and material: Molecular lab protocols for DNA extraction and preservation, sequencing, Voet & Voet “Biochemistry”, Bioinformatics tools (NCBI web page)

Course description: Individual study/or laboratory research conducted under supervision of a biology faculty member

Number of credit hours: 3

Course Prerequisites & Co-requisites: none

Program Learning Outcomes:
Program Learning Outcome #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. Knowledge base will include: levels of complexity (molecular/cellular through population/communities/ecosystems), biological principles and processes.
Program Learning Outcome #2: The student will clearly communicate scientific information; provide clear structure and transitions; demonstrate scientific tone, language, and form.
Program Learning Outcome #4: Be able to design, carry out and analyze experiments to answer biological questions, including: scientific methods and instrumentation; safe and appropriate use of laboratory equipment; experimental design; data analysis; and familiarity with professional standards in science.
Program Learning Outcome #5: The student will demonstrate preparation for future career and educational goals utilizing the knowledge and training during their academic program.

General Education Core Curriculum Objectives/Outcomes:
This course is not included in the general education core curriculum.

Student learning outcomes:
Student who complete BIO 475 will be able to:
1. Collect samples from environment (plant leaf) and analyze them using PCR (PLO4)
2. Evaluate experimental data to determine bacterial community profiles (PLO4)
3. Draw conclusions from experimental results and effectively summarize them into a written form (PLO 2,5).

4. Oral reports on a weekly basis in lab meetings (PLO 2).

Course requirements:
The student will-
analyze biological samples using molecular techniques. Emphasis on PCR and how it will affect further molecular analysis.
A written report summarizing the results will be required, with a minimum length of 3 double-spaced pages and the reference list.
Participation in on-line student evaluations for BIO 475 is a mandatory course requirement. Failure to participate will result in a 1% reduction in final grade.

Course calendar:
1. Spend at least 5 hour a week (~75 hours/semester)
2. Meet every week
3. Submit a report by December 5

Grading policy:
The written report summarizing the research finding will be used to assess the student's competence in four major areas: theoretical knowledge, knowledge of research methods, ability to synthesize information, ability to support and defend positions.
A letter grade will be assign based on the following scale:
   A—excellent
   B—good
   C—acceptable
   D—unacceptable
There are no extra credit assignments in this course.

ACADEMIC HONESTY: All exam work submitted for grading must be exclusively your own. Any dishonesty or cheating may result in a final score of zero ("F") for the course. SFA Policy A-9.1 is summarized as:“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." (http://www.sfasu.edu/policies/academic_integrity.asp)

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/.

CLASSROOM EXPECTATIONS: Standard classroom decorum is expected. Please arrive in class a bit early as we will be starting promptly on time. Please do not carry on a separate conversation that might be distracting to other students. Behavior that interferes with the learning environment will not be tolerated. If necessary, students violating these standards will be removed from the classroom and reported to the Student Rights and Responsibilities Office. Student who asked to leave the classroom will be required to visit with me in my office before being allowed to return to class

WITHHELD GRADES, SEMESTER GRADES POLICY (SFA POLICY A-54): http://www.sfasu.edu/policies/semester_grds.asp