Name: Stephen Wagner

Department: Biology

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Office Hours: Tuesday, Thursday 8:30-10:00; Thursday 2:00-4:00 pm or by appointment.

Class Meeting Time and Place: 2:00-3:50 pm, Tuesday, Online on Brightspace D2L

Course Description: This laboratory-based course accompanies BIOL 1306 Biology for Science Majors I. Laboratory activities will reinforce the fundamental principles of living organisms, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Study and examination of the concepts of cytology, reproduction, genetics, and scientific reasoning are included.

Number of credit hours: 1

Prerequisite: None   Co-requisite: BIOL 1306 Biology for Science Majors I (lecture)

Instructor’s Background: My name is Dr. Stephen Wagner. I have a B.S. in Environmental Biology from Heidelberg College, an MS in Microbiology from North Carolina State University, and a Ph.D. in Agronomy (Soil Microbiology) from Clemson University. I spent two years as a postdoctoral research associate with the USDA, working on herbicide biodegradation. This is my 25th year at SFA. My major research interest is microbial ecology, emphasizing bioremediation, plant-microbe interactions, and effects of management practices on soil ecology. Besides this course my courses have included Microbiology, Prenursing Microbiology, Cell and Molecular Biology, Microbial Ecology, Industrial Microbiology, Applied and Environmental Microbiology, Planetary and Space Biology, and SFA 101.

Outside of work I enjoy gardening, walking our dog Charlie Brown, hiking, home improvement, cheering on my school and Cleveland, Ohio teams, attending church, and doing volunteer work. We have two children who are both married: Michael (age 33) and our daughter-in-law Katie (age 33) who live in Katy and have a two girls named Lillian (4) and Ella (2); Melissa (age 31) and our son-in-law Matt (age 31) who live in Melissa and have 3 children – Oliver (6) and Isaac (4) and Evelynn (1).

Program Learning Outcomes: Each course objective and student learning outcome listed below corresponds to the Biology Department PLO 1, to develop knowledge of biological concepts.

Student Learning Outcomes: Upon successful completion of this course, students will:

1. Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
2. Use critical thinking and scientific problem solving to make informed decisions in the laboratory.
3. Communicate effectively the results of scientific investigations.
4. Describe the characteristics of life.
5. Explain the methods of inquiry used by scientist.
6. Identify the basic properties of substances needed for life.
7. Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.
8. Describe the structure of cell membranes and the movement of molecules across a membrane.
9. Identify the substrates, products, and important chemical pathways in metabolism.
10. Identify the principles of inheritance and solve classical genetic problems.
11. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
12. Describe the unity and diversity of life and the evidence for evolution through natural selection.

**General Education Core Curriculum. (Tentative):** The Texas Higher Education Coordinating Board has identified six core learning objectives: Critical Thinking Skills, Communication Skills, Empirical and Quantitative Skills, Teamwork, Personal Responsibility, and Social Responsibility. SFA is committed to the improvement of its general education core curriculum by regular assessment of student performance on these six objectives.

By enrolling in Biology for Majors I (lab) you are also enrolling in a Core Curriculum Course that fulfills the Empirical and Quantitative Skills requirement. You will see this course on your D2L list. At one point during the semester, you may receive an assignment that fulfills both the requirements of this course and the needs of Stephen F. Austin State University's Core Curriculum Assessment Plan with the Texas Higher Education Coordinating Board. The chart below indicates the core objectives addressed by this course, the assignment(s) that will be used to assess the objectives in this course.

<table>
<thead>
<tr>
<th>Core Objective</th>
<th>Definition</th>
<th>Course Assignment Title</th>
<th>Date Due in D2L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empirical and Quantitative Skills</td>
<td>To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.</td>
<td>Inheritance Laboratory Exercise</td>
<td>To Be Determined</td>
</tr>
</tbody>
</table>

More information and instructions will be provided concerning submission of this assignment later in the semester.

**Office Hours:** Your success in this course as well as here at SFA is very important. Should you have questions or need additional help I maintain an open door policy and encourage every student to talk freely about any issue that concerns them. My office hours for the fall are listed above. If I am not in my office, I will leave a note as to my whereabouts. Also check rooms 101 (BIO Dept. office), or 207 and 208 (labs). **Unless there is an emergency, the time immediately before and after (15 min) our lab meeting (2:00 – 4:00 Tuesday) does not constitute time**
that I am available to help you. Additionally, please note that if you contact me by cell phone I am not permitted to return your call if it is a long-distance number.

**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. I expect everyone to do her own, original work. This includes all exams, quizzes, and assignments. We will take appropriate disciplinary action, as described in the University Student Handbook, against anyone that does not comply with this policy.

**Definition of Academic Dishonesty**

As stated in the university handbook:

"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."

**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 online, 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.

**STUDENTS WITH SPECIAL NEEDS:** Students who require special accommodations for this course will be provided such accommodations within established university guidelines. Students who are requesting support services from SFA are required to submit documentation through the Office of Disability Services to verify eligibility for reasonable accommodations; the institution must review and evaluate that documentation. To obtain disability related accommodations and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, 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.

Please note that the only way you can get extra time to finish exams work for the course is to be verified by ODS that you are eligible to receive this accommodation.
Course Content:

- Collecting and Analyzing Data
- Biologically Important Molecules
- Microscope
- Cells Structure and Diversity
  - Prokaryotic
  - Eukaryotic
- Diffusion and Osmosis
  - Passive systems
  - Active transport
- Factors Affecting Enzyme Activity
- Photosynthesis
- Cellular Respiration
- Chromosome: DNA isolation
- Mitosis and Meiosis
- Genetics: Principles of Inheritance
- Natural Selection


Each lab session will feature online activities for lab uploaded to Brightspace by D2L website.

Course Requirements: To complete Biology for Majors (I) you must be enrolled in BIOL 1306 & BIOL 1106 in the same semester. Your laboratory grade is determined by daily assignments. Your lecture instructor will calculate your course grade using your lab average as follows:

lab avg. = 1/4
lecture avg. = ¾

Attendance Policy:
A. All BIOL 1106 students are required to complete the scheduled lab.

B. Those students who cannot meet the assignment deadline and have excused absences can be given make-up work.

C. Excused absences will be allowed for these reasons (university policy A-10):
   1. School trips and/or functions - arrangements with the lab coordinator for make-up must be made prior to absence.
   2. Death in the immediate family - a notice from the Office of Student Rights and Responsibilities may be sent to the lab coordinator.
   3. Too ill to attend class - a note from the physician must be sent to the lab coordinator.
   E. An absence is counted if you do not turn in the assignment by the end date and time.
D. Only the lab instructor may excuse a student's absence from lab; documentation must be sent by email no later than five class days upon returning to classes. The scheduled time for the make-up must be arranged with the instructor at least 3 days prior to the makeup.

E. All make-ups will be in the form of a quiz ten questions long. All make-up quizzes must be completed by Dec. 2.

F. No make-up quizzes are permitted after 3 absences, whether they are excused or unexcused. Additionally, ten points will be deducted from a student’s lab grade for every four absences.

G. Students are responsible for all work missed. Notes, data, etc. for missed labs may be obtained from d2L for the make-up. NOTE: Departmental policy prohibits the lab coordinator and instructors from returning phone calls to numbers outside Nacogdoches exchanges. Therefore, contact should be made by email or from local phones if you require a reply.

### Lab Exercise Schedule

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Date</th>
<th>Topic</th>
<th>Lab Manual Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sept 1</td>
<td>Collecting and Analyzing Data</td>
<td>1-29</td>
</tr>
<tr>
<td>2</td>
<td>Sept 8</td>
<td>Biologically Important Molecules</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>3</td>
<td>Sept 15</td>
<td>Microscope</td>
<td>33-45</td>
</tr>
<tr>
<td>4</td>
<td>Sept 22</td>
<td>Cell Structure and Diversity</td>
<td>46-55</td>
</tr>
<tr>
<td>5</td>
<td>Sept 29</td>
<td>Diffusion and Osmosis</td>
<td>61-85</td>
</tr>
<tr>
<td>6</td>
<td>Oct 6</td>
<td>Factors Affecting Enzyme Activity</td>
<td>89-111</td>
</tr>
<tr>
<td>7</td>
<td>Oct 13</td>
<td>Photosynthesis</td>
<td>139-157</td>
</tr>
<tr>
<td>8</td>
<td>Oct 20</td>
<td>Cell Respiration</td>
<td>115-137</td>
</tr>
<tr>
<td>9</td>
<td>Oct 27</td>
<td>Chromosomes: DNA Isolation</td>
<td>245-262</td>
</tr>
<tr>
<td>10</td>
<td>Nov 3</td>
<td>Mitosis and Meiosis</td>
<td>161-187</td>
</tr>
<tr>
<td>11</td>
<td>Nov 10</td>
<td>Genetics: Principles of Inheritance</td>
<td>219-238</td>
</tr>
<tr>
<td>12</td>
<td>Nov 17</td>
<td>Natural Selection</td>
<td>275-302</td>
</tr>
</tbody>
</table>

### Course Requirements and Expectations:

I. Lab Review and Discussion (25 points/lab): You are required to attend a review and discussion session for each lab period. During this time, we will summarize the lab activity and discuss any questions that students may have about the lab. Because of the COVID 19 restrictions on class size for our laboratories, this section cannot meet at the same time in the laboratory. Consequently, students with last names beginning with “A” to “G” will meet within the first hour of the lab period (2:00 – 2:45 pm); students with last names beginning with “H” to “Z” will meet within the second hour of the lab period (3:00 – 3:45 pm). Although attendance is mandatory, you can miss up to 3 of these reviews without penalty, provided that the absence qualifies as an excused absence as described above and you do the makeup work.

Review sessions for our first on Sept. 2 will meet in person in Rm. 103 Miller Science. After that, review sessions will be held online via the through the Brightspace D2L Communication Tools>Chat. Unlike Zoom, Chat is a typed session which ask questions or make comments.
II. Online Lab Activity (100 points/lab): For each lab period, you are expected to complete an online lab activity. This activity may involve watching a youtube or instructor-composed video, viewing a Power Point presentation, completing a lab simulation, etc. The activity will be available in a module for each lab period on Brightspace by D2L at the beginning of the scheduled lab period (Tuesdays at 2:00). You must access the lab activity within the allocated submission period (72 hours). Although you do not receive any points directly, points may be deducted from the overall score for the week’s lab at the discretion of the instructors if there is an indication that you did not view and participate in the lab activity. More specific instructions for each lab activity will be discussed during the lab review period on Chat as well as released as News items on Brightspace by D2L.

III. Lab Assignment (100 points per lab): After attending the Lab Review and Discussion as well as completing the Online Lab Assignment, you must complete a lab assignment. This may be an objective-style quiz or a set of short answer discussion questions. Details for each assignment will be given with the instructions for the online lab activity on Brightspace by D2L and will be completed and submitted via the same D2L portal.

You will have an initial 36 hours from the end of the scheduled lab period (4:00) to complete all lab activities including the lab assignment described below. The initial submission period will be followed by an additional 36-hour grace period. In other words, you will have a total of 72 hours after the conclusion of the lab period to complete and submit your work. You may work on the lab on your own time, as long as you upload your finished assignment by the published end date and time (Fridays at 4:00 pm). Late work will not be accepted unless under extenuating circumstances (e.g. an excused absence).

**Grade Determination:** The 125 points available for each lab will be compiled together determine a total score out of 1500 points available for the entire lab course. A percentage score will be calculated from these points and reported to your lecture instructor to determine your overall grade in the course. Remember that your lab score represents 25% of your final grade for the course. This calculation is summarized below.

<table>
<thead>
<tr>
<th>Course Requirement</th>
<th>Points/Lab</th>
<th>Total Points/12 Labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Review and Discussion</td>
<td>25</td>
<td>300</td>
</tr>
<tr>
<td>Lab Assignment</td>
<td>100</td>
<td>1200</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>1500</td>
</tr>
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