Biology for Science Majors I: BIO 1306.500

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Office: Miller Science room 239

Office Hours: Posted under Office Hours in Brightspace
Department: Biology
Class meeting time and place: On-line

Course Description
Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included. Co-requisite(s): BIOL 1106 Biology for Science Majors I (lab)

Credit Hour Justification
Below is the expected time commitment that the average student should expect to complete during the semester for this course.

BIOL 1306 Biology for Science Majors I: On-line (12 modules)
- 45 hours working through modules (12 modules, 4 hrs/module)
- 48 hours homework/Mastering Biology (3 hrs/week)
- 30 hours reading (300 pages, 5 minutes per page)
- 24 hours quiz studying (12 quizzes)
  - 6 hours exams (30 minutes/exam for 12 modules)

153 hours

General Education Core Curriculum

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. These will not be assessed until Fall 2022.

Program Learning Outcomes
Each course objective and student learning outcome listed below corresponds to the Biology Department PLO 1, to 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.

Student LearningOutcomes
Upon successful completion of this course, students will:
  1. Describe the characteristics of life (CO #1).
  2. Explain the methods of inquiry used by scientists (CO #1, 2).
  3. Identify the basic requirements of life and the properties of the major molecules needed for life (CO #1).
  4. Compare structures, reproduction, and characteristics of viruses, prokaryotic cells, & eukaryotic cells (CO #1, 2).
  5. Describe the structure of cell membranes and the movement of molecules across a membrane (CO #1, 2).
  6. Identify the substrates, products, and important chemical pathways in metabolism (CO #1).
  7. Identify the principles of inheritance and solve classical genetic problems (CO #1).
  8. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins (CO #1).
  9. Describe the unity and diversity of life and the evidence for evolution through natural selection (CO #1, 2).
**Lecture Course Requirements and Grading Policy**

Twelve quizzes worth 50 points each will be administered throughout the semester for a total of 600 points for exams. Twelve discussion questions will be asked during the semester. Students must contribute a substantive response to each question to obtain full credit. All twelve questions will be selected for grading for a total of 240 points. Mastering Biology assignments will account for 200 points. Therefore, a total of 1040 points may be possible in this course.

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>12 exams at 50 points each</td>
<td>600</td>
</tr>
<tr>
<td>Participation (discussion groups)</td>
<td>240</td>
</tr>
<tr>
<td>Mastering Biology Homework</td>
<td>200</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1040</strong></td>
</tr>
</tbody>
</table>

The total points for Mastering Biology assignments will range from 200-400 points. However, these points will be adjusted to a 200-point scale. (e.g., 300 points out of 400 points will be entered as \((300/400 \times 200 = 150\) points).

Lab will count at 25% of your final course grade, while lecture will comprise 75%. Your total points received from lecture tests, discussion questions and Mastering Biology will be divided by 1040 (total points in lecture), thus providing a final lecture average. A final course grade will be determined using the following formula:

\[
\text{Final Course Average} = (\text{Lecture Average} \times 0.75) = (\text{Lab Average} \times 0.25)
\]

Percentages are not round-up at the end of the semester (an 89.97 is still a ‘B’). The time to be concerned about points is each day of the semester while you are preparing for the exams. Extra credit is not available to improve your grade.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100 - 90.0%</td>
</tr>
<tr>
<td>B</td>
<td>89.99 - 80.0%</td>
</tr>
<tr>
<td>C</td>
<td>79.99 - 70.0%</td>
</tr>
<tr>
<td>D</td>
<td>69.99 - 60.0%</td>
</tr>
<tr>
<td>F</td>
<td>59.99% or below</td>
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</tbody>
</table>

**Mastering Biology Homework:**

Mastering Biology assignments deadlines are posted in the Course Timeline and are available with the beginning of new exam material.

**Attendance Policy**

Regular participation is required and will be assessed using quizzes, Mastering Biology and discussion forums. No extensions for deadlines unless a student has an excused absence, as defined by University Policy, Class Attendance 6.7.

**Make-Up Work:**

Make-ups for missed quizzes will only be allowed in the case of a University approved absence (illness with a doctor's note, a family crisis, or a religious holiday). It is your responsibility to inform me that you missed the exam and why as soon as possible. **YOU MUST NOTIFY ME WITHIN 24 HOURS OF A MISSED EXAM TO BE ELIGIBLE FOR A MAKE UP QUIZ.** Written documentation must be submitted that thoroughly supports you missing an exam.

**Academic Integrity (4.1)**

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 his or her own, original work. This includes all homework assignments, exams and quizzes. All quizzes and exams are closed-book! I 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
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. Please read the complete policy at http://www.sfasu.edu/policies/4.1-student-academic-dishonesty.pdf.

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 http://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/.

Mental Health and Wellness
SFA values students’ mental health and the role it plays in academic and overall student success. 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:
SFA Counseling Services
www.sfasu.edu/counselingservices
Rusk Building, 3rd Floor
936.468.2401

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

Crisis Resources:
Burke 24-hour crisis line: 1.800.392.8343
Suicide Prevention Lifeline: 1.800.273.TALK (8255)
Crisis Text Line: Text HELLO to 741-741
### General Lecture Schedule

*For specific dates and deadlines please consult the Course Timeline*

<table>
<thead>
<tr>
<th>Week</th>
<th>%</th>
<th>TOPIC</th>
<th>Chapter</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>Introduction to the Course</td>
<td>1</td>
<td>2-26</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>Evolution, Themes of Biology and Scientific Inquiry</td>
<td>1</td>
<td>2-26</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>Water and Life</td>
<td>3</td>
<td>44-55</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>Carbon and Molecular Diversity</td>
<td>4</td>
<td>56-65</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>Structure and Function of Large Biological Molecules</td>
<td>5</td>
<td>66-91</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>A Tour of the Cell</td>
<td>6</td>
<td>92-125</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>Membrane Structure and Function</td>
<td>7</td>
<td>126-142</td>
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<tr>
<td>8</td>
<td>10</td>
<td>Introduction to Metabolism</td>
<td>8</td>
<td>143-163</td>
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<tr>
<td>9</td>
<td>10</td>
<td>Cellular Respiration and Fermentation</td>
<td>9</td>
<td>164-186</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>Photosynthesis</td>
<td>10</td>
<td>187-211</td>
</tr>
<tr>
<td>11</td>
<td>5</td>
<td>The Cell Cycle</td>
<td>12</td>
<td>234-252</td>
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<tr>
<td>12</td>
<td>5</td>
<td>Meiosis and Sexual Life Cycles</td>
<td>13</td>
<td>253-268</td>
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<tr>
<td>13</td>
<td>10</td>
<td>Mendel and the Gene Idea</td>
<td>14</td>
<td>269-293</td>
</tr>
<tr>
<td>14</td>
<td>5</td>
<td>The Molecular Basis of Inheritance</td>
<td>16</td>
<td>314-334</td>
</tr>
<tr>
<td>15</td>
<td>10</td>
<td>Gene Expression: From Gene to Protein</td>
<td>17</td>
<td>335-362</td>
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<tr>
<td></td>
<td></td>
<td>Decent with Modification</td>
<td>22</td>
<td>465-483</td>
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