



**Syllabus:** Principles of Biology I for Science Majors

**Course Number:** BIOL 1406

**Semester & Year:** Fall 2013

**Instructor Information**

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**Textbook Information**

- **Life: The Science of Biology.** Purves, Sadava, Orians, and Heller 7<sup>th</sup> ed. (2004) Sinauer Associates, Inc. and W.H. Freeman and Co. **ISBN 0-7167-9856-5** (required)

**Student Learning Outcomes for the Course**

*At the conclusion of the lecture portion of this course students should be able to:*

1. Describe the characteristics of life.
2. Explain the reasoning used by scientists.
3. Identify the basic properties of substances needed for life.
4. Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.
5. Describe the structure of cell membranes and the movement of molecules across a membrane.
6. Identify the substrates, products, and important chemical pathways in metabolism.
7. Identify the principles of inheritance and solve classical genetic problems.
8. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
9. Describe the unity and diversity of life and the evidence for evolution through natural selection.

*At the conclusion of the laboratory portion of this course students should be able to:*

1. Be able to 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 investigations.
4. Describe the characteristics of life.
5. Explain the reasoning used by scientists.

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.

### **Student Requirements for Completion of the Course**

#### **Lecture Topics - Biology 1406 Fall 2013**

1. Principles of Life
2. Life Chemistry and Energy
3. Nucleic Acids, Proteins and Enzymes
4. Cells: The Working Units of Life
5. Cell Membranes and Signaling
6. Pathways that Harvest and Store Chemical Energy
7. The Cell Cycle and Cell Division
8. Inheritance, Genes and Chromosomes
9. DNA and Its Role in Heredity
10. From DNA to Protein: Gene Expression
11. Regulation of Gene Expression
12. Genomes

#### **FINAL EXAM (Comprehensive)**

### **Student Assessment**

At least six (6) lecture exams will be given over the units listed above during the course of the semester. “Daily grades” will include all other coursework completed during the semester, including but not limited to quizzes, labs, and homework. A comprehensive final exam will be given at the end of the semester.

#### **The course grade will be calculated from the following schedule:**

<b>Lecture Exams</b>	<b>(3/7)—about 43%</b>
<b>Daily Grades</b>	<b>(3/7)—about 43%</b>
<b>Final Exam</b>	<b>(1/7)—about 14%</b>

## Grading Scale

**IMPORTANT NOTE:** While students earn the same numerical grade for high school and college credit, only letter grades will appear on Texarkana College transcripts. The conversions from numerical grades to letter grades used by Texarkana College are shown in Table I below. Numerical grades will appear on Texas High School transcripts for the local credit earned in this course. The corresponding letter grades for Texas High School are shown in Table II.

**Because Texarkana College uses the grade of "D" for numerical averages 60-69, students earning semester average grades of 60-69 will earn credit (a "D") on their Texarkana College transcripts but will earn a failing grade (an "F") on their Texas High School transcripts and WILL NOT earn local science credit for this course.**

**Texarkana College**

Semester Grade	Course Average
A	90-100
B	80-89
C	70-79
D	60-69
F	59-below

**Table I. Semester Letter Grade Equivalents for Texarkana College**

**Texas High School**

Numerical Grade	Letter Grade
90 - 100	A
80 - 89	B
70 - 79	C
0 - 69	F

**Table II. Semester Letter Grade Equivalents for Texas High School (Texarkana Independent School District (TISD) policy)**

## Class Schedule

Topics will be covered in the approximate order below. Biology topics often contain overlapping material.

1. Principles of Life
2. Life Chemistry and Energy
3. Nucleic Acids, Proteins and Enzymes
4. Cells: The Working Units of Life
5. Cell Membranes and Signaling

6. Pathways that Harvest and Store Chemical Energy
7. The Cell Cycle and Cell Division
8. Inheritance, Genes and Chromosomes
9. DNA and Its Role in Heredity
10. From DNA to Protein: Gene Expression
11. Regulation of Gene Expression
12. Genomes

**FINAL EXAM** (Comprehensive)

**Attendance Policy**

In accordance with Texarkana Independent School District (TISD) policy, the attendance policy will be as follows:

**Attendance for Credit:** To receive credit in a class, a student must attend at least 90 percent of the days the class is offered. A student who attends at least 75 percent but fewer than 90 percent of the days the class is offered may receive credit for the class if he or she completes a plan approved by the principal that allows the student to fulfill the instructional requirements for the class. If a student is involved in a criminal or juvenile court proceeding, the approval of the judge presiding over the case also will be required before the student receives credit for the class.

If a student attends less than 75 percent of the days a class is offered or has not completed a plan approved by the principal, then the student will be referred to the attendance review committee to determine whether there are extenuating circumstances for the absences and how the student can regain credit, if appropriate. [See policies at FEC.]

In determining whether there were extenuating circumstances for the absences, the attendance committee will use the following guidelines:

- All absences will be considered in determining whether a student has attended the required percentage of days. State-allowed exemptions to the compulsory attendance requirements also will be considered, if make-up work is completed. [See policies at FEA.]
- A transfer or migrant student begins to accumulate absences only after he or she has enrolled in the district. For a student transferring into the district after school begins, including a migrant student, only those absences after enrollment will be considered.
- In reaching a decision about a student's absences, the committee will attempt to ensure that it is in the best interest of the student.
- The committee will consider the acceptability and authenticity of documented reasons for the student's absences.
- The committee will consider whether the absences were for reasons over which the student or the student's parent could exercise any control.

- The committee will consider the extent to which the student has completed all assignments, mastered the essential knowledge and skills, and maintained passing grades in the course or subject.
- The student or parent will be given an opportunity to present any information to the committee about the absences and to talk about ways to earn or regain credit.

If the committee determines that there have been extenuating circumstances, it will decide how the credit may be regained. If the committee determines, however, that there are no extenuating circumstances, credit will be denied in the classes in which the excessive absences occurred. Parents will receive notice that the student has lost credit due to excessive absences.

The student or parent may appeal the committee's decision to the board of trustees by filing a written request with the superintendent in accordance with policy FNG(LOCAL).

The actual number of days a student must be in attendance in order to receive credit will depend on whether the class is for a full semester or for a full year.

**Make Up Hours for Excessive Absences:** Students will have the opportunity to make up excessive absences by attending morning and afternoon detentions, Night Library, and designated after school and Saturday tutorials. These opportunities will be the only means that student may use to regain credit.

Requirements for all of these opportunities are as follows:

- Students must have books and materials to study.
- Students will be expected to work without talking to other students.
- Students must sign in and out to receive credit.
- All school rules will be followed or the student will be asked to leave the session without credit.
- No food or drinks will be allowed.
- No electronic devices, including cell phones, Walk-mans, iPods, or other electronic devices will be allowed.
- Students must provide their own transportation. (Transportation may be provided for Saturday tutorials.)

Parents and students will be notified that the student is in danger of being assigned make-up hours. They also will be notified throughout the semester as the amount of make-up hours increases. Make-up hours also will be posted by student ID.

### **Make-up Policy**

In accordance with Texarkana Independent School District (TISD) policy, the make-up work policy will be as follows:

**Make-up Work from Absences:** In all high school courses, students will make up assignments and performance assessments after absences, including absences as a result of suspension, with the following requirements. If the assignment was made prior to the student's absence, the assignment will be due the first day that the student returns to the campus. If the assignment was made during the student's absence, the student will have the same number of days to complete the work as other students had who were present on the day that the assignment was made.

### **Academic Dishonesty Policy**

Scholastic dishonesty, involving but not limited to cheating on a test, plagiarism, collusion, or falsification of records will make the student liable for disciplinary action after being investigated by the Dean of Students. Proven violations of this nature will result in the student being dropped from the class with an "F".

This policy applies campus wide, including TC Testing Center, as well as off-campus classroom or lab sites, including dual credit campuses. This information can be found in the Student Handbook at <http://www.texarkanacollege.edu/wp-content/uploads/2012/10/2013-2014-Texarkana-College-Catalog.pdf>.

### **Disability Act Statement:**

Texarkana College complies with all provisions of the Americans with Disabilities Act and makes reasonable accommodations upon request. Please contact Larry Andrews at 903.823.3283, or go by the Recruitment, Advisement, and Retention Department located in the Administration building for personal assistance.

If you have an accommodation letter from their office indicating that you have a disability which requires academic accommodations, please present it to me so we can discuss the accommodations that you might need for this class. *It is best to request these changes at the beginning if not before the start of class* so there is ample time to make the accommodations.

### **Financial Aid:**

**Attention!** Dropping this class may affect your funding in a negative way! You could owe money to the college and/or federal government. Please check with the Financial Aid office before making a decision.