CENTRAL TEXAS COLLEGE  
BIOX 1408  
Lab portion of BIOLOGY FOR NON-SCIENCE MAJORS I  

Semester Hours Credit: 4  

INSTRUCTOR: ________________  
OFFICE HOURS: ________________  

I. INTRODUCTION  

A. Provides a survey of biological principles with an emphasis on humans, including chemistry of life, cell structure, cell function and cell reproduction.  
B. This course may satisfy the Biology requirement in some curricula. Please check your degree plan to determine the status of this course in your program of study.  
C. This course is occupationally related and may serve as preparation for careers in teaching, medicine, agriculture and perhaps other fields as well. It prepares students for all fields of work by improving the ability to think critically and three dimensionally.  
D. Prerequisite: None. Math, reading and writing will be required in this course. It is best to be finished with all developmental courses prior to enrollment in this course.  

II. LEARNING OUTCOMES  

Upon successful completion of this course, Biology for Non-Science Majors I, the student will:  

A. Distinguish between prokaryotic, eukaryotic, plant and animal cells, and identify major cell structures.  
B. Identify stages of the cell cycle, mitosis (plant and animal), and meiosis.  
C. Interpret results from cell physiology experiments involving movement across membranes, enzymes, photosynthesis, and cellular respiration.  
D. Apply genetic principles to predict the outcome of genetic crosses and statistically analyze results.  
E. Describe karyotyping, pedigrees, and biotechnology and provide an example of the uses of each.  
F. Identify parts of a DNA molecule, and describe replication, transcription, and translation.  
G. Analyze evidence for evolution and natural selection.  
H. Apply scientific reasoning to investigate questions, and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.  
I. Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.  
J. Effectively communicate the results of scientific investigations.
III. INSTRUCTIONAL MATERIALS

A. **Required Text:** Biology published online by Open Stax. Free on-line version or low cost hard copy version [http://openstaxcollege.org/textbooks/concepts-of-biology/get](http://openstaxcollege.org/textbooks/concepts-of-biology/get) if you choose to use an on-line version, you must bring a laptop or reader (not just a phone) with you to class. To access and download this textbook, go to the above web site, find the book called “Concepts of Biology”. It has an **ORANGE COVER**. We are NOT using the one with the green cover. Click on the picture and download the book in low definition. Hi definition will take a long time to load, take a lot of memory on your device and will not give a substantially more clarity to the images.

B. **Required Laboratory Manual:** Central Texas College Laboratory Manual. Biology 1408, Spring 2017 (By S. Whisler and M. Price). Purchase a Hard copy so that you can earn the offered extra credit for the course.

C. **Required:** Scantron for each test and some quizzes; available at CTC bookstore. Get the “science scantron”. It is dark blue/purple. You fill in rectangles, not circles, and the back side has a place for answering essays. YOU WILL NEVER USE THE BACK. It is just a good check to be sure you have the right one. You will need at least 10 for the course.

IV. COURSE REQUIREMENTS:

A. **Lots of Reading:** Specific chapters from the textbook will be required reading. There will also be reading and preparation or homework assignments in the lab manual. How to read and when to read will be discussed in the handout: Studying for biology.

B. **Completion of lab manual:** You will have homework to complete for each lab and each lecture. Much of this work, including certain extra credit assignments, will be in the lab manual. If you are not using the lab manual to study, you are not taking the course.

C. **Attendance in both lecture and lab:** It is the responsibility of the student to sign in to class at the beginning of class, and, when directed, to sign out at the end of class. You will sign in for lecture and for lab.

We will have regular quizzes at the beginning and end of classes for attendance checking as well. No makeups on these quizzes will be allowed. If you do not take the quizzes or do assignments, your exam grade will be the sole grade your unit grade is based on.

Exceptions will only be made for students who are communicating with me, have serious, documented, personal health conditions and/or family illness or death,
AND have thus far demonstrated ability in the course based on exam grades.

D. Tardiness, leaving early and other disruptions
When you come to class late, leave the classroom to go to the restroom, or leave or enter the class for any other reason, you disrupt the classroom environment. You distract other students, you distract your instructor, and you interfere with your ability to be successful in the class. If you leave the lecture room during class, do not expect to re-enter the room. You may leave the lab for brief periods when I am not addressing the class. If the door to the lecture room is closed (and thus locked), do not knock on the door. If the door to the lab room is closed and you are late, do not knock while I am addressing the class. I will close the lecture room door 15 minutes into class after attendance and possibly after a quiz that you will not be allowed to make up. If you come in late during a quiz, you will turn in your quiz at the same time as the last student who came in on time.

E. Class Participation:
Students are expected to attend lecture and lab during their scheduled time. If you do not have time to attend the class, this course is offered on-line. I suggest you take it in that mode so that you can have the flexibility you desire. When you enroll in a face-to-face class, the expectation is that you will ATTEND class and PARTICIPATE in class. When final grades are averaged, those who regularly and positively contributed in class may get a “bump” at the end of the term. Others will not. This decision is entirely up to the judgment of the instructor.

G. What do I do if I must be absent?
First, look at your schedule! This tells you what material was covered. Read the appropriate material in the referenced resources. If you must be absent from any class meeting, it is your responsibility to find out what happened in class while you were gone. Exchange contact information with one or more other students in class so that you can ask them what happened, secure class notes, or notifications which were given during your absence. Absenteeism is no excuse for not being ready for future classes. I do not provide class notes if you are absent. After you have obtained and reviewed the class notes you get from other students, you are welcome to see me during office hours and I will be happy to answer any questions you might have. Please don’t come to me and say “I missed class, what do I need to do?” You have a schedule and it is your responsibility to use it, and ask classmates for notes and information before you come to me for help with the specific subject matter you are having difficulty understanding.

H. Review of exams after grading
This course, like most science courses, builds on itself. Concepts presented at the beginning of the course will be expanded on and will provide the foundation for later material. If you do poorly on any exam, it is important that you go back and review the material until you achieve an appropriate level of understanding. Under no circumstances are you allowed to copy the exam, copy questions from the exam,
photograph the exam or reproduce the exam in any other way; to do so constitutes cheating and will lead to you being dropped from the course with a grade of “F for scholastic dishonesty”. You will be given about 15 minutes in class to review your graded exam. During this time, check the questions you missed and note the topics these questions covered. It is very unlikely you will ever see any of these specific questions again even on the final. If you missed several questions on the same topic, it is an indication that you lack a full understanding of the topic. Go back and review this topic prior to the next day of class.

If you wish to review your exam for more than the allotted class time, you are welcome to come into the office and spend as long as you like with the exam and the key. If your grade was lower than a B, I strongly encourage you to do this. You may also ask me for clarification regarding exam questions. If I make a mistake when grading your exam, please bring the mistake, or what you believe is a mistake, to my attention when you return the exam. I will make a note on your exam and determine if a mistake was made and will correct your grade if necessary. The exams are my property. If you take the exam out of the classroom or office area, you will get a zero on the exam.

I. Integrity and scholarship
All students are required to maintain the highest standards of scholastic honesty in the preparation of all coursework and examinations. Examples of scholastic dishonesty include plagiarism, collusion, and cheating, copying homework or lab work. This is not a comprehensive list. Students guilty of scholastic dishonesty will be administratively dropped from the course with a grade of “F” and subject to disciplinary action, which may include suspension or expulsion from the school.

J. Checking blackboard
It is the student’s responsibility to check blackboard on a regular basis. It would be best to check every day, but you should check at minimum every other day. If you have not used blackboard before and would like help, I will be happy to assist you during office hours. Many of your classmates will likely be familiar with it and will also be able to assist you if you ask for help. If you do not have a home computer with internet availability, there are many computer labs on campus where you may access blackboard.

K. Guns in the classroom
Please note the posted signs on campus. At this time, concealed carry is NOT allowed.

V. EXAMINATIONS:
Students will take lecture exams during their regularly scheduled lecture time unless prior arrangements have been made. The exams may consist of multiple choice, matching, true/false, short answer, labeling, definitions, and essay questions. Each lecture and lab period is an explanation/review of the material students need to grasp before an exam.

If you have conflicts with the normal class that you are aware of IN ADVANCE of the exam,
you may contact me and I will try to find a mutually convenient time for you to take the exam early.

**Taking exams**

Show up early. There are only 6 exam days in the course…you can do it. The classroom door will be closed and locked at 15 minutes after the exam begins. If you do not arrive prior to this time, you have three potential options:

1. Wait until the first person to complete the exam exits, come in as they exit without speaking to them and begin your exam. You will end your exam when the last on-time person completes the exam.

2. If you are in a Monday-Wednesday lecture, you may come in when the first person exits and ask if you may take it with the other class. I may allow this if it is not your habit to be late and if you have a reasonable excuse for being late on this particular day.

3. There will be an opportunity during exam week, usually on Monday, for you to take a makeup exam for the exam you missed. The makeup will likely not be the same version of the exam your classmates took. It will likely have more short answer and essay questions and will likely have some more complicated multiple choice questions. If you do this, the final exam will function as it does for students who did not miss/were not late for an exam. It will replace the lowest unit grade. It will be your responsibility to contact me and schedule a mutually convenient time on the designated day.

4. Take a zero on the exam. This will result in a failing unit grade which may be replaced by a better grade on the final exam.

*If you completely miss an exam for any reason, illness, car trouble, family emergency, you decided to take a cruise in the middle of the term…..etc. options 3 and 4 above are open to you.*

Exceptions will be made only for extreme circumstances as determined by the instructor.

**Exam protocol:**

- Use the rest room immediately prior to class.
- Sit in alternate seats and alternate rows. If you tend to take a long time on exams, sit toward the middle of the isle. If you tend to finish early, sit at the edge. This will help avoid disturbance as people leave the exam room.
- Turn off all electronic devices including vibration modes. Place your cell phones in your zippered backpack/book bag/coat pocket.
- Close all materials and be sure there is nothing near your seat that could suggest that you might be cheating.
- Have at least two pencils. You may write with pen on the short answer questions on the exam, so if you prefer pen on written questions, have a pen out as well. Have an eraser out and available.
- The only things on the desk should be the scantron and your writing implements.
VI. SEMESTER GRADE COMPUTATIONS
16 week semester
Unit Evaluations: 6 unit evaluations 100 points each 600 points
Final exam may replace the lowest unit evaluation. (100) points
The final exam is comprehensive!!

COURSE GRADE Example (16 week session): 6 unit evaluations.
In this case, the total points in the course is 600.
A- 540-600
B- 480-539
C- 420-479
D- 360-419
F- 0-359

** Do not ask for special extra credit assignments. Any offer of extra credit will be made to the entire class. There is generally extra credit incorporated into the exams and quizzes and assignments. Within a unit there may be a drop quiz.

This grade scale may be changed by the instructor during the semester. If so, you will be supplied via blackboard with the changes. This is an unlikely event, but could occur.

It is your responsibility to keep track of your grades. You were given forms on the first day of lab which you should fill in to keep track of your grade in the course. There should be no need for you to ask me what your grade is. Use the form to track your grade.

VII. NOTES AND ADDITIONAL INSTRUCTIONS FROM THE INSTRUCTOR
A. Course Withdrawal: It is the student’s responsibility to officially withdraw from a course if circumstances prevent attendance. Any student who desires to, or must, officially withdraw from a course after the first scheduled class meeting must file a Central Texas College Application for Withdrawal (CTC Form 59). The withdrawal form must be signed by the student. It is not necessary to have this form signed by the instructor.

CTC Form 59 will be accepted at any time prior to Friday of the 12th week of classes during the 16-week fall and spring semesters. The deadline for sessions of other lengths is:

10-week session Friday of the 7th week
8-week session Friday of the 6th week
6-week session Friday of the 4th week

The equivalent date (75% of the semester) will be used for sessions of other lengths. The specific last day to withdraw is published each semester in the Schedule Bulletin.
A student who officially withdraws will be awarded the grade of “W” provided the student’s attendance and academic performance are satisfactory at the time of official withdrawal. Students must file a withdrawal application with the College before they may be considered for withdrawal.

A student may not withdraw from a class for which the instructor has previously issued the student a grade of “F” or “FN” for nonattendance.

B. **Administrative Withdrawal:** A student may be administratively withdrawn by a designated member of the administrative staff of the College under the following conditions:
The student has been placed on Academic Suspension or Disciplinary Suspension;
The student has an outstanding financial obligation owed to the college; or
The student registered for a course without the required prerequisite or departmental permission.

The college is under no obligation to refund tuition and fees, or other costs associated with a student who is administratively withdrawn.

C. **Incomplete Grade:** The College catalog states, “An incomplete grade may be given in those cases where the student has completed the majority of the coursework but, because of personal illness, death in the immediate family, or military orders, the student is unable to complete the requirements for a course...” Prior approval from the instructor is required before the grade of “I” for incomplete is recorded. A student who merely fails to show for the end of the course will receive zeros on assignments and grades and an “F” for the course.

D. **Cellular Phones and other electronic devices:** Cellular phones and other electronic devices (with or without associated headsets) will be turned off while the student is in the classroom or laboratory. **Use of a cell phone during an exam will result in a zero for that exam.** Failure to adhere to this policy may result in disciplinary action. Making and/or receiving cell phone calls during lecture or lab is strictly forbidden. If a student’s cell phone rings during an exam, he/she will be considered finished with the exam at that time and must turn it in. If a cell phone rings during lab, the student will be considered finished with the experiment at that time and will need to leave the lab room. The number for your family members to call in an emergency is 254-526-1200. Appropriate personnel will immediately communicate the message to you. Exceptions to this rule can be made at the discretion of the instructor. Exceptions will only be made for uses related to the course.

E. **Disability Support Services (DSS)** provides support services for students who have appropriate documentation of a disability. Students requiring classroom, academic or other accommodations are responsible for contacting DSS located on the central campus, Building 111, Room 207, (254) 526-1195. This service is available to all students, regardless of location. Reasonable accommodations will
be given through DSS in accordance with American with Disabilities Act (ADA) and Section 504 Rehabilitation Act. Additional information from DSS is available at http://www.ctcd.edu/disability-support

F. **Instructor Discretion:** The instructor reserves the right of final decision in course requirements and alterations of grading scale.

G. **Civility:** Individuals are expected to be cognizant of what a Constructive educational experience is and respectful of those participating in a Learning environment. Failure to do so can result a disciplinary action up to and including expulsion.

   Civil behavior includes, but is not limited to, refraining from use of cell phones or electronic devices in an inappropriate manner, positive and friendly interaction with other students and instructor during class. Refraining from use of inappropriate language, or hostile behavior. **Decisions regarding civility are the instructor’s prerogative.**

   You are neither attending nor participating if you show up for class and text, use headphones, sleep, talk (except as part of normal classroom interactions), behave rudely to me or your classmates (by my judgment) or zone out. Do not pull up your hoodie and think that I won’t notice the headphones or texting or the zone-out. All of the above behaviors are inappropriate. This is not a comprehensive list of inappropriate behaviors.

   If I have to warn you once during the course regarding your classroom behavior, you may expect that future infractions will result in me telling you to leave the class for the day. If your behavior is grossly disruptive, I will ask you to leave the classroom without a prior warning. If I must ask you to leave, you will be counted absent for that day. If you argue with me or further disrupt the class, you will be required to counsel with me and/or student services personnel before you may return to class.

   If you refuse to leave, I will call the campus police and have you removed from the class. If the police must come to remove you from class, or if I tell you to see me in office hours before you may return to class, you will be required to attend a counseling session with the campus student services personnel and/or with me before you may attend class again. Don’t just show up without counseling or you will be asked to leave again. Any day you are asked to leave class is considered an absence.
**Lab outline**

I. Safety and introduction to basic chemistry using model kits
II. Understanding the Periodic table and bond formation
III. Importance of water, acids, bases and buffers
IV. Use of the microscope
V. Acids, bases, and buffers
VI. Functional groups; Biomolecules part 1: carbohydrates and proteins
VII. Biomolecules part 2: Lipids and nucleic acids
VIII. Introduction to cell structure and function
IX. Cell membrane structure and function
X. Enzyme function and regulation of enzyme activity
XI. Cellular respiration: how cells make use of food molecules
XII. Photosynthesis: how plants use the sun’s energy to make organic (food) molecules
XIII. Mitosis: how cells duplicate themselves
XIV. Meiosis for sexual reproduction
XV. Genetics
XVI. DNA replication
XVII. Gene expression: how proteins are synthesized.