Fall 2017 BIO 123 Human Biology  Section 001 MWF 9:00 – 9:50 Miller Science 139
Section 002 TR  1:00 – 2:15 Miller Science 137
Dr. Sarah Canterberry  Office Hours: S202  SI Leader: Kelli Bashaw
Associate Professor, Biology  MW  10:00 - 11:00  Location: AARC room E
*E-mail: canterbesc@sfasu.edu  TR  10:45 – 12:15  Days: TR
Phone: 468-2168  Or by appointment  Time: 7:00 – 8:00
Office: S202
* All contact via e-mail should be professional in manner with proper punctuation and grammar. E-mails sent in an unacceptable format will not be answered.

Mastering Biology and Learning Catalytics – mandatory for the 2nd week

Course Requirements:
Class Participation
D2L* Pre-lecture quizzes
Mastering Biology Homework
4 Major Exams
Lab Participation
*You must score 100% on the syllabus quiz to unlock the course material on D2L!

Course Calendar (Tentative Schedule):

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Chapter</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1-4</td>
<td>1</td>
<td>Human Biology Science and Society</td>
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<tr>
<td></td>
<td>2</td>
<td>The Chemistry of Living Things</td>
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<td></td>
<td>3</td>
<td>Structure and Function of Cells</td>
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<td>4</td>
<td>From Cells to Organ Systems</td>
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<tr>
<td></td>
<td>5</td>
<td>The Skeletal System</td>
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<td></td>
<td>Sept. 25</td>
<td>Exam 1 BIO123.001 (MWF)</td>
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<td>Sept. 26</td>
<td>Exam 1 BIO123.002 (TR)</td>
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<tr>
<td>4-7</td>
<td>6</td>
<td>The Muscular System</td>
</tr>
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<td></td>
<td>11</td>
<td>The Nervous System: Integration and Control</td>
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<td></td>
<td>12</td>
<td>Sensory Mechanisms</td>
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<td></td>
<td>7</td>
<td>Blood</td>
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<td>Oct. 16</td>
<td>Exam 2 BIO123.001 (MWF)</td>
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<td></td>
<td>Oct. 17</td>
<td>Exam 2 BIO123.002 (TR)</td>
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<tr>
<td>7-10</td>
<td>8</td>
<td>Heart and Blood Vessels</td>
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<td></td>
<td>9</td>
<td>The Immune System and Mechanisms of Defense</td>
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<td></td>
<td>10</td>
<td>The Respiratory System: Exchange of Gases</td>
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<td>14</td>
<td>The Digestive System and Nutrition</td>
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<td>15</td>
<td>The Urinary System</td>
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<td>Nov. 6</td>
<td>Exam 3 BIO123.001 (MWF)</td>
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<td>Nov. 7</td>
<td>Exam 3 BIO123.002 (TR)</td>
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<tr>
<td>10-12</td>
<td>17</td>
<td>Cell Reproduction and Differentiation</td>
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<td></td>
<td>16</td>
<td>Reproductive Systems</td>
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<tr>
<td></td>
<td>21</td>
<td>Development and Aging</td>
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<tr>
<td></td>
<td>Week 13</td>
<td>THANKSGIVING BREAK</td>
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<tr>
<td>14-15</td>
<td>19</td>
<td>Genetics and Inheritance</td>
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<td></td>
<td>18</td>
<td>Cancer: Uncontrolled Cell Division and Differentiation</td>
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<td></td>
<td>22</td>
<td>Evolution and the Origins of Life</td>
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<td>Dec 11</td>
<td>8:00  Exam 4 BIO123.001 (MWF)</td>
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<td>Dec 12</td>
<td>10:30 Exam 4 BIO123.002 (TR)</td>
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Grading Policy:
The grading for this course will be a result of your efforts in both lecture and laboratory. Your grades from lecture and lab will be computed into a single grade; the same grade is reported for both lecture and lab. The lab portion counts $1/3$ (33%) while the lecture portion counts $2/3$ (67%) of your final grade. There will be 900 possible points for the entire course as described below.

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>Participation</td>
<td>50</td>
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<tr>
<td>Pre-lecture Quizzes</td>
<td>50</td>
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<tr>
<td>4 Major exams, worth 100 points each</td>
<td>400</td>
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<tr>
<td>Mastering Biology 1 (Exams 1 and 2)</td>
<td>100</td>
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<tr>
<td>Lab Grade</td>
<td>300</td>
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<tr>
<td>TOTAL COURSE POINTS</td>
<td>900</td>
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Grading Scale:
A = 806 to 900 Points  
B = 716 to 805 Points  
C = 626 to 715 Points  
D = 536 to 625 Points  
F = less than 536 Points

Course Evaluation:
All students are required to complete a course evaluation at the end of the semester. Failure to complete this evaluation will result in a 1% deduction in your final grade for the course.

Participation:
Daily participation points are calculated as a percentage of Learning Catalytics questions answered in class. Logging in to Learning Catalytics when you are not in class will be considered cheating and as such may result in a grade of F for the course.

Pre-Lecture Videos:
Pre-lecture videos will be posted to D2L for each chapter, starting with Chapter 2. You will be responsible for the material covered in these videos. You must watch the video in order to unlock the pre-lecture quiz for that material.

Pre-Lecture Quizzes:
Pre-lecture quizzes will be posted to D2L and will be due prior to the start of class. You must watch the pre-lecture video in order to unlock the quiz. You will receive no credit for completing these assignments late.

Mastering Biology Assignments:
Mastering Biology (www.masteringbiology.com) assignments will be posted upon completion of new material. The assignments will be worth 100 of your 900 course points.

Exam Policy:
The four major exams will consist of 50 multiple choice/true false questions. All personal belongings will be left at the front of the classroom during the exam. This includes hats, food, beverages, and cell phones. Students will not be allowed to leave the room for ANY REASON during the exam. After the first exam is completed, no one will be allowed to start the exam.

Seating Policy:
Assigned seating will be recorded next week, and each student must sit in the seat of their choice for the remainder of the semester.
Attendance Policy:
Attendance will be taken by participation in Learning Catalytics questions at the start of each class period. **Students that arrive after the question is closed will be counted absent for the entire class period.** Students will be allowed up to 3 weeks’ worth of absences (excused or unexcused). Students that exceed this maximum will **no longer be eligible to make-up missed work.**

Make-up Work:
Make-up work will only be given to students with University excused absences. Make-up work will not be given to students that have absences in excess of 3 weeks (excused or unexcused). **Students must provide notification within 48 hours of their return to classes** in order to receive make-up work. **Make-up for learning catalytics will be given throughout the semester and must be taken within 1 week of the student’s return to classes.** **Make-up exams will be given the week before finals** and may be in an alternative format including fill in the blank, short answer, multiple choice and matching questions. **Students are responsible for scheduling a time to take the make-up exam during** this week with Dr. Canterberry via email.

Academic Integrity:
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 the 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/academic_integrity.asp](http://www.sfasu.edu/policies/academic_integrity.asp)

**ANY act of academic dishonesty will result in receiving a grade of F for the course and will be reported to the student’s dean.**

General Education Core Curriculum
This course has been selected to be part of Stephen F. Austin State University’s core curriculum. The Texas Higher Education Coordinating Board has identified six objectives for all core courses: 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.

Assessment of these objectives at SFA will be based on student work from all core curriculum courses. This student work will be collected in D2L through LiveText, the assessment management system selected by SFA to collect student work for core assessment. LiveText accounts will be provided to all students enrolled in core courses through the university technology fee. You will be required to register your LiveText account, and you will be notified how to register your account through your SFA e-mail account. If you forward your SFA e-mail to another account and do not receive an e-mail concerning LiveText registration, please be sure to check your junk mail folder and your spam filter for these e-mails. If you have questions about LiveText call Ext. 1267 or e-mail [SFALiveText@sfasu.edu](mailto:SFALiveText@sfasu.edu).
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 and uploaded to LiveText this semester, and the date the assignment(s) should be uploaded to LiveText. Not every assignment will be collected for assessment every semester. Your instructor will notify you which assignment(s) must be submitted for assessment in LiveText this semester.

**Failure to submit your assessment assignment in LiveText will decrease your lab grade by 25%**.

<table>
<thead>
<tr>
<th>Core Objective</th>
<th>Definition</th>
<th>Course Assignment Title</th>
<th>Date Due in LiveText</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Thinking Skills</td>
<td>To include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>Communication Skills</td>
<td>To include effective development, interpretation and expression of ideas though written, oral, and visual communication.</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<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>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>Teamwork</td>
<td>To include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.</td>
<td>TBD</td>
<td>TBD</td>
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<tr>
<td>Personal Responsibility</td>
<td>To include the ability to connect choices, actions and consequences to ethical decision-making.</td>
<td>TBD</td>
<td>TBD</td>
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<tr>
<td>Social Responsibility</td>
<td>To include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities.</td>
<td>TBD</td>
<td>TBD</td>
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</table>

**Withheld Grades Semester Grades Policy:**
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 become an F and will be counted as a repeated course for the purpose of computing the grade point average. The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

**Students with disabilities:**
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.

**Student Counseling Center:**
Rusk Building 3rd Floor  (936) 468-2401  Email: counseling@sfasu.edu
The Student Counseling Center is available free of charge to students and is staffed with professional therapists to meet a variety of needs. All interactions with the Student Counseling Center are guaranteed confidential. Licensed Counselors are available from 8:00a.m.-5:00p.m. Monday-Friday. The department is closed on certain holidays, Spring Break and Winter Break when the university is closed. If you are in need of assistance after hours or on the weekend please call: University Police: 468-2608 or MHMR Crisis Line: (800)392-8343. If the situation is life threatening please dial 911.
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 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.

The following policies will be strictly enforced:
- Students are to arrive on time and stay for the entire class period. Those who miss the daily quiz, or leave early will be counted as absent.
- Students are not to hold private side conversations as this is distracting and disrespectful.
- Reading unrelated publications is not allowed.
- Use of cellular phones, for any reason, will not be tolerated.

**Students who exhibit unacceptable classroom behavior will be dismissed from class and counted as absent.**

Students who behave in a disrespectful manner (towards the professor or classmates) will be given one warning via e-mail. Further disruptive behavior will result in the student being banned from the classroom for the remainder of the semester.

Course Description:
BIO 123 is a biological principles course for non–science majors. Human Biology Lab (BIO 123L) is a co-requisite with BIO 123 lecture. This course is designed to give you an introduction to human biology, both at the cellular level and the organismal level. I have broken down all lecture topics into one of three broad categories:

**(1). Molecules to Organs.** We begin with a discussion of the various types of molecules required for a cell to function properly. We discuss the individual components of a cell, what they are composed of, and their function in the cell. We will discuss the important cellular processes that allow a cell to survive, grow, and divide. We will learn about the various cell types found in the human body and how they are organized into tissues, organs, and finally organ systems. By the time we are finished with this section, you will

- Have become familiar with basic biological terminology as it pertains to human biology
- Be able to describe the basic types of biological molecules and their function found in a cell
- Be able to describe the components of a cell and their function
- Be able to describe important cellular processes such as transport, energy production, protein production, and division
- Know the different types of cells found in the body, their function, and their organization into tissues and organs
- Be able to describe how the body is organized into cavities and planes

**(2). Organ Systems.** We will discuss the human body’s 11 different organ systems. For historical reasons, the integumentary system (the only one not given its own heading) is discussed in the chapter on tissues, organs, and body organization. By the time we have finished with this section, you will

- Have mastered basic biological terminology as it pertains to organs and organ systems
Have an understanding of each human organ system. This includes
- The components of each system
- The structure of each component
- The function of each component and how this contributes to the function of the entire organ system
- An understanding of some of the more common disorders of each organ system

(3). Organismal Biology. This is the study of how the human organism functions as a whole, as well as how we came to be and how we interact with our environment. We will begin by looking at the central dogma: how cellular functions are controlled, including cellular division. We will then move onto genetics: how all aspects of our bodies are controlled by genes. We will be looking at inherited genetic disorders, as well as developmental defects (birth defects) that may, or may not, be attributable to genetics. We will look at cancer as a cellular process that involves acquired or inherited defects in specific genes and how these defects allow out of control cell growth and division, ultimately affecting the entire body. We will finish out the semester with a look at the basics of evolutionary theory and evolutionary tree of Homo sapiens – us! By the time we are finished with this section, you will

- Have mastered basic biological terminology as it pertains to organismal biology
- Understand the central dogma & the different processes that are included in it
- Understand the basics of cellular division (both mitosis & meiosis)
- Understand how meiosis functions to produce sperm and ova
- Understand the basic principles of reproduction and development, from zygote to fetus
- Have a basic understanding of the mechanisms that govern inheritance patterns
- Be able to use basic probabilities to predict the incidence of some common genetic disorders
- Be familiar with the types and causes of birth defects, as well as how to reduce their occurrence
- Have a basic understanding of the cellular processes disrupted in cancer development, as well as the epidemiology of cancer
- Understand basic evolutionary principles and be able to describe the evolutionary history of humans

By the time you are finished with BIO 123, I hope you have gained a greater appreciation of how remarkable the human body is.

Program Learning Outcomes:
There are no specific program learning outcomes for this major addressed in this course. It is a general education core curriculum course and / or a service course.

General Education Core Curriculum Objectives/Outcomes:
Texas State Exemplary Educational Objectives in the Natural Sciences addressed by this course are:

Objective one requires that students “Understand and apply method and appropriate technology to the study of natural sciences.”

Objective two states that students must be able “To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretations both orally and in writing.”

Objective three states that students must be able “To identify and recognize the differences among competing scientific theories.”

Objective four states that students must be able “To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.”
Objective five states that students must be able “To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.”

Student Learning Outcomes:
Students who complete Concepts of Biology will be able to:
1. Explain the scientific method and critically evaluate scientific information (EEO 1, 2, 5)
2. Identify the chemical basis for life and the characteristics that distinguish living things from inanimate matter (EEO 3, 4, 5).
3. Illustrate how genetic information is passed from parents to offspring and how this genetic information is expressed by cells (EEO 2, 4, 5).
4. Classify the diversity of life forms from the species to kingdom level (EEO 2, 4).
5. Analyze biological interactions that occur from the sub-cellular to the ecosystem level of organization (EEO 1, 2, 4, 5).
6. Discuss the role of evolution in the history of life on Earth (EEO 1, 3).