COURSE SYLLABUS

BIOLOGY – 1406
GENERAL BIOLOGY for SCIENCE MAJORS I

EASTFIELD COLLEGE
STEM DIVISION
Spring – 2015

INSTRUCTOR INFORMATION
Instructor: A. Bailey, Ph.D.
Phone: 972.860.4753
Email: abailey@dcccd.edu

Office Hours
By appointment

COURSES and CLASS TIMES
Biol. 1406.43750 F C260: 5 - 7:55pm
Lab F S307 8:05 – 11:00 pm

COURSE DESCRIPTION
BIOL 1406 Biology for Science Majors I (4 credit hours)
Prerequisite: One of the following must be met: (1) Developmental Reading 0093 AND Developmental Writing 0093; (2) English as a Second Language (ESOL) 0044 AND 0054; or (3) have met the Texas Success Initiative (TSI) Reading and Writing Standards AND DCCCD Writing score prerequisite requirement. An introductory survey of contemporary biology for students majoring in the sciences. Topics emphasized will include the chemical basis of life, structure and function of cells, energy transformations, and molecular biology and genetics. (3 Lec., 3 Lab.) (Coordinating Board Academic Approval Number 2601015103)

REQUIRED TEXTS


DEVELOPMENTAL COURSES
The Texas Success Initiative (TSI) is a statewide program designed to ensure that students enrolled in Texas public colleges and universities have the basic academic skills needed to be successful in college-level course work. The TSI requires assessment, remediation (if necessary), and advising of students who attend a public college or university in the state of Texas. The program assesses a student’s basic academic skills in reading, writing and math. Passing the assessment is a prerequisite for enrollment in many college-level classes such as English 1301/1302, History 1301/1302, Math 1414, etc. Students who do not meet assessment standards may complete prerequisite requirements by taking developmental courses in the deficient area and passing them with a grade of C or higher. In some cases retesting will also be required. It is up to each student to be aware and informed about requirements that are subject to change. Additional information is available from the TSI office. https://www1.dcccd.edu/cat0910/admiss/tsi.cfm?loc=4
STUDENT LEARNING OUTCOMES (SLO’s)
Your performance in each of these areas will be judged by grades obtained from assignments and exams that measure your understanding of the textbook material and laboratory experiments requiring you to follow a written procedure to collect and analyze scientific information.

BIOL-1406:
Lecture Learning Outcomes
Upon successful completion of this course, students will:
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.

Lab Learning Outcomes
Upon successful completion of this laboratory-based course, students will:
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.

Core Objectives:

BIOL-1406 develops the following Core Objectives:

- **Critical Thinking** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.

- **Communication** - to include effective development, interpretation and expression of ideas through written, oral and visual communication.

- **Empirical and Quantitative Skills** - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

- **Teamwork** - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

Core Objective Development Statements:

- **BIOL 1406 develops Critical Thinking and Empirical and Quantitative Skills** by requiring students to research, analyze and interpret data derived from an experimental setting and drawing a well-informed
conclusion of the data through the application of sound biological concepts. Examples: research paper, case studies, and/or lab reports.

- **BIOL 1406 develops Teamwork and Communication** by requiring students to effectively work in a small group on an assigned problem, exercise or course concept that will then be presented in a written, oral or visual format. Example: lab exercises

The project that will assess these Core Objectives will be an exercise involving the **“Identification of Specimens within a Sample of Tropical Calcareous Beach Sand.”**

**GRADING RATIONALE**

Note: The following grading rationale may be modified by the course instructor with a verbal class announcement.

In **Biology 1406** there will be five (5) Lecture Exams and three (3) Lab Exams, each worth 100 points for a total of 800 points. In addition to the lecture and lab exams for BIOL-1406, there will be a writing assignment (explained below) worth a total of 100 points for an overall maximum total of 900 points. The grading rationale/evaluation is as follows:

**BIOLOGY – 1406**  
900-possible points

<table>
<thead>
<tr>
<th>Points Earned</th>
<th>Course Grade</th>
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<tbody>
<tr>
<td>900 – 810</td>
<td>A</td>
</tr>
<tr>
<td>809 – 720</td>
<td>B</td>
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<tr>
<td>719 – 630</td>
<td>C</td>
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<tr>
<td>629 – 540</td>
<td>D</td>
</tr>
<tr>
<td>539 – 0</td>
<td>F</td>
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**Missed Exams:** Students missing one (1) Lecture Exam or one (1) Lab Exam, providing they have notified the instructor of the absence prior to the next class they attend, will have an opportunity to make up the grade for that exam by taking a comprehensive exam the week before the final exam. A student will only be allowed to make up the grade for one missed exam. For each exam a student misses after the first one, the student will receive a grade of zero (0).

**Writing Assignment** (100-points): Students will be required to review an article from a scientific journal and write a two-page (minimum) summary of the article. The article may be of any topic that interests you but it MUST come from a **scientific journal**. The article you review should be written in scientific format with the following components: abstract, introduction, materials/methods, results, comments/discussion. If you are not sure the article you are considering is satisfactory for the assignment then verify it with your instructor. In order to receive full credit for your review of the article, you will need to address/answer the following objectives:

1. Who conducted the research?
2. What was the purpose for conducting the research? / Why was it important?
3. What was the hypothesis for the study? / What did they expect?
4. How did they conduct the experiment?
5. What were the results of their experimentation?
6. What did these results mean/indicate to the researchers?
7. What impact does this study have on your life? / How does it affect you?

**Your journal review must also:**
1. Be typed, double-space, 12-point, 1.0-inch margins, paragraph/essay form.
2. Have a cover page with: your name, course number and section; semester.
3. Have a minimum length of 2-pages.
4. Have a copy of the actual journal article stapled to the back for reference.

Helpful Websites for Locating Free Journal Articles:

www.freemedicaljournals.com

www.jwildlifedis.org

OBTAINING FINAL COURSE GRADES USING eConnect

Final Grade Reports are no longer mailed. Convenient access is available online at www.econnect.dcccd.edu. Use your identification number when you log onto eConnect, an online system developed by the DCCCD to provide you with timely information regarding your college record. Your grades will also be printed on your Student Advising Report, which is available in the Admissions Office.

EASTFIELD COLLEGE Email POLICY

Faculty and students must have and use a DCCCD account for all correspondence relating to academic coursework. For information on setting up a DCCCD student email account go to: http://www.dcccd.edu/netmail/home.html

ATTENDANCE POLICY

Students are expected to regularly attend all classes in which they are enrolled. Students have the responsibility to attend class and to consult with the instructor when an absence occurs. Instructors are responsible for describing attendance policies and procedures to all students enrolled in their class.

FINANCIAL AID STATEMENT

Students who are receiving any form of financial aid should check with the Financial Aid Office prior to withdrawing from classes. Withdrawals may affect your eligibility to receive further aid and could cause you to be in a position of repayment for the current semester. Students who fail to attend or participate after the drop date are also subject to this policy.

REPEATING THIS COURSE: (Third Attempt to Enroll in a Course)

Effective for Fall Semester 2005, the Dallas County Community Colleges will charge additional tuition to students registering the third or subsequent time for a course. All third and subsequent attempts of the majority of credit and Continuing Education/Workforce Training courses will result in additional tuition to be charged. Developmental Studies and some other courses will not be charged a higher tuition rate. Third attempts include courses taken at any of the Dallas County Community Colleges since the Fall 2002 Semester. See Third Attempt to Enroll in a Course at: http://www.dcccd.edu/thirdcourseattempt/

ACADEMIC HONESTY

Scholastic dishonesty is a violation of the Code of Student Conduct. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion. As a college student, you are considered a responsible adult. Your enrollment indicates acceptance of the DCCCD Code of Student Conduct published in the DCCCD Catalog at http://www1.dcccd.edu/cat0506/ss/code.cfm

Academic dishonesty includes, but is not limited to, cheating on tests, plagiarism and collusion. Cheating includes copying from another student’s test or homework paper, using materials not authorized, collaborating with or seeking aid from another student during a test, knowingly using, buying, selling, stealing, or soliciting the contents of an unadministered test, and substituting for another person to take a test. Plagiarism is the appropriating, buying, receiving as a gift, or obtaining by any means another’s work and the unacknowledged submission or incorporation of it in one’s own written work. Collusion is the unauthorized collaboration with
another person in preparing written work for fulfillment of course requirements. Academic dishonesty is a serious offense in college. You can be given a failing grade on an assignment or test, can be failed for the class, or you can even be suspended from college. Any student guilty of cheating, plagiarism, or collusion, on any assignment, will receive a failing grade for the semester and will be dismissed from class for the remainder of the semester.

FOOD and DRINK POLICY
Food, drinks, and tobacco products are prohibited in Eastfield College classrooms.

ADA STATEMENT
Students with a physical, mental or learning disability who require accommodations should contact the college Disability Services Office in C237. Call 972.860.8348 or email efcdso@dcccd.edu. For more information: http://www.eastfieldcollege.edu/SSI/DSO/index.html

RELIGIOUS HOLIDAYS
Absences for observance of a religious holy day are excused. Notification of the absence must be given to the instructor in writing at least two weeks prior to the date of the holy day. A student whose absence is excused to observe a religious holy day is allowed to contract with the instructor to make-up a missed examination or complete an assignment within a mutually agreed upon time after the absence.

WITHDRAWAL POLICY
If you are unable to complete this course, it is your responsibility to withdraw formally. The withdrawal request must be received in the Registrar’s Office by Thursday April 20, 2015. Failure to do so will result in your receiving a performance grade, usually an “F”. If you drop a class or withdraw from the college before the official drop/withdrawal deadline, you will receive a “W” (Withdrawal) in each class dropped. For more information about drop deadlines, refer to the current printed Credit Class Schedule, contact the Admission’s/Registrar’s Office at 972-860-7167 (Room C119), or contact the division office. If you drop a class via eConnect, make sure to print a copy of the confirmation and keep the copy. In the event of a discrepancy it will be the responsibility of the student to provide documentation of having dropped the class.

STOP BEFORE YOU DROP (Six-Course Drop Rule)
For students who enrolled in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop. You may drop no more than 6 courses during your entire undergraduate career unless the drop qualifies as an exception. Your campus counseling/advising center will give you more information on the allowable exceptions. Remember that once you have accumulated 6 non-exempt drops, you cannot drop any other courses with a “W”. Therefore, please exercise caution when dropping courses in any Texas public institution of higher learning, including all seven of the Dallas County Community Colleges. For more information, you may access: https://www1.dcccd.edu/coursedrops

FAMILY EDUCATIONAL RIGHTS and PRIVACY ACT of 1974 (FERPA)
In compliance with the Family Educational Rights and Privacy Act of 1974 (FERPA), the College may release information classified as “directory information” to the general public without the written consent of the student. Directory information includes: (1) student name, (2) student address, (3) telephone numbers, (4) date and place of birth, (5) weight and height of members of athletic teams, (6) participation in officially recognized activities and sports, (7) dates of attendance, (8) educational institution most recently attended, and (9) other similar information, including major field of study and degrees and awards received. Students may protect their directory information at any time during the academic year. If no request is filed, directory information is released upon written inquiry. No telephone inquiries are acknowledged. No transcript or academic record is released without written consent from the student, except as specified by law.
CLASSROOM ETIQUETTE
Since every student is entitled to full participation in class without interruption, all students are expected to be in class and prepared to begin on time. All pagers, wireless phones, electronic games, radios, tape or CD players or other devices that generate sound must be turned off when you enter the classroom. Disruption of class, whether by latecomers, noisy devices or inconsiderate behavior will not be tolerated. Repeated violations will be penalized and may result in expulsion from the class.

CHILDREN ON CAMPUS
The institution strives to protect an environment most conducive to teaching and learning for all enrolled students. Children who are taking part in organized scheduled activities or who are enrolled in specific classes are welcomed. Minor children, however, should not be brought to the institution unless closely supervised by their parent. Minor children should not be brought into classrooms, laboratories or other facilities of the college. This practice is disruptive to the learning process. In a case of an emergency where the student-parent has no alternative but to bring the child to campus, classroom faculty or the administrative heads of other units have full discretion as to whether a child may be allowed to quietly stay in the location. These individuals may require that children be removed by the student-parent from the setting if, in their opinion, the presence of the child is deemed to be disruptive to the learning process. For reasons of security and child welfare the institution will not permit unattended children to be left anywhere on the premises. Parents who have problems with childcare should visit the Counseling and/or Advisement Center to receive referrals to childcare services in the area.

EMERGENCY / INCLEMENT WEATHER PROCEDURE
In case of emergency or inclement weather conditions, Eastfield students should listen to KEOM-FM Radio Station (88.5FM) as the primary media source. In partnership with the Mesquite Independent School District, Eastfield College Administration will notify KEOM immediately after a decision is made to cancel classes on any given day of inclement weather or for emergency purposes. Students may also monitor other local radio and television stations. The earliest an announcement may be broadcast on KEOM Radio is 6:00am. Students may also refer to the Eastfield College web page www.eastfieldcollege.com for the Inclement Weather announcement under the “Features” area of the front page. The announcement will be posted immediately following the decision to close the college.

DISCLAIMER
The instructor reserves the right to amend this syllabus as necessary. The guidelines set forth in this syllabus may be changed, deleted, or amended at any time by the instructor. The attached course outline is intended as an aid in helping you know your responsibilities for the semester. It is possible that some changes in the course outline or class policies will be made during the semester. Any changes that are made to the class policies or course outline will be announced in class.
<table>
<thead>
<tr>
<th>WEEK OF</th>
<th>CHAPTER / TOPIC</th>
</tr>
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<tbody>
<tr>
<td>01/23</td>
<td>Orientation and Chapter 2 “The Chemical Context of Life”</td>
</tr>
</tbody>
</table>
| 01/30   | Chapter-3: “Water and the Fitness of the Environment”  
|         | Chapter-4: “Carbon and the Molecular Diversity of Life” |
| 02/06   | Chapter-5: “The Structure and Function of Macromolecules”  
|         | Chapter-6: “A Tour of the Cell” |
| 02/13   | **EXAM-1** and Chapter-7: “Membrane Structure and Function” |
| 02/20   | Chapter-8: “An Introduction to Metabolism”  
|         | Chapter-9: “Cellular Respiration” |
| 02/27   | **EXAM-2** and Chapter-10: “Photosynthesis” |
| 03/06   | Chapter-12: “The Cell Cycle”  
<p>|         | Chapter-13: “Meiosis and Sexual Life Cycles” |
| 03/09-15| Spring Break   |
| 03/20   | <strong>EXAM-3</strong> |
| 03/27   | Chapter-14: “Mendel and the gene idea” |
| 04/03 - 04/04 | Holliday Easter |
| 04/10   | Chapter-15: “The Chromosomal Basis of Inheritance” |
| 04/17   | <strong>EXAM-4</strong> and Chapter-16: “The Molecular Basis of Inheritance” |
| 04/24   | Chapter-17: “From Gene to protein” Paper Due |
| 05/01   | <strong>Exam 5</strong> |</p>
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<thead>
<tr>
<th>WEEK OF</th>
<th>TOPIC</th>
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<tbody>
<tr>
<td>01/23</td>
<td>Orientation; Lab Safety; Chapter-2 &amp; 3: “Metric System” “Microscopy”</td>
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<tr>
<td>01/30</td>
<td>Molecules of Biological Significance: Part-1 (Handout)</td>
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<tr>
<td>02/06</td>
<td>Molecules of Biological Significance: Part-2 (Handout)</td>
</tr>
<tr>
<td>02/13</td>
<td><strong>LAB EXAM – 1</strong></td>
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<tr>
<td>02/20</td>
<td>No Lab</td>
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</tbody>
</table>
| 02/27   | Chapter – 4: “Acids, Bases and pH”  
|          | Chapter – 5: “Chemical Composition of Living Things” |
| 03/6    | Chapter-6: “Cell Structure & Function”  
|          | Chapter-8: “Diffusion & Osmosis”  
|          | Spring Break |
| 03/20   | Topic-9: “Photosynthesis” |
| 03/27   | **Lab Exam 2** |
| 04/03   | Holliday |
| 04/10   | Chapter-11: “Mitosis”  
|          | Chapter-12: “Meiosis” |
| 04/17   | Chapter-14: “DNA and the Genetic Code” |
| 04/24   | Chapter-13: “Genetics” continued |
| 05/01   | **LAB EXAM – 3** |