RICHLAND COLLEGE DEPARTMENT OF BIOLOGY
School of Mathematics, Science, and Health Professions
Course Syllabus For
Biol 1406: Biology for Science Majors I
4 credit hours (3 lec/3lab)

Semester and Year: Summer I 2019
Section: 85501
Class time and days: Thursday, June 06 through Wednesday, July 03, 2019
Room: Lectures: MTWRF 5:40-7:40 p.m. in WH-275
       Labs: MTWRF 7:50-9:50 p.m. in SH-151

Instructor: Dr. Shahab (Shaun) Danesh

YouTube Channel: https://www.youtube.com/channel/UCqpo1ekKomzZY0YbN5LD0Ng

Contact Info: sdanesh@dcccd.edu (214) 890-3624
Office: WH294
Office hour: 4:00 pm - 5:00 pm MTWRF

Last date to withdraw: Thursday, June 25, 2019
Final Exam Day and time: Wednesday, July 3, 2019 5:40-7:40 p.m. WH-275
Bring a Scantron sheet 882E for the final exam

Evaluation Procedures:
GRADE EVALUATION: Grades determined by performance, not needs or wants.
Standard grading scale will be used: 100-90% = A; 89-80 = B; 79-70 = C; 69-60 = D
(This may change at the discretion of the instructor.)

Course grade is determined as follows:

5 lecture examinations @ 100 pts each ______ = 500 pts
Quizzes (10 @13 pts each) ______ = 130 pts
Pre-labs (10 @ 12 pts each) ______ = 120 pts
Enzyme Graph ______ = 50 pts
Total: __________________________ = 800 pts

THE INSTRUCTOR RESERVES THE RIGHT TO AMEND THIS SYLLABUS AS NECESSARY.

NOTES ABOUT GRADED MATERIALS:

- LECTURE EXAMINATIONS: NO MAKE-UPS!! Bring scantron sheet 882E and a pencil/eraser to each exam. If an exam is missed, the missed score will be replaced by the final exam % score. The lecture examinations will be a combination of multiple choice, true or false, matching and/or short answer questions.

- LAB QUIZZES: ONE lab quiz (and one pre-lab) will be dropped for extenuating circumstances like tardiness, absence due to illness, deaths in the family, or because of poor performance. ABSOLUTELY NO MAKE-UPS FOR LAB QUIZZES. The lab quiz will be administered during the first 15 minutes of the lab period; if you are late for lab, you will have less time to finish the quiz. IF you leave the lab after taking the quiz (without completing the lab exercise to the teacher's satisfaction) your lab quiz for that day will not be graded (will receive a grade of zero).

- ENZYME GRAPHS: You will plot a series of graphs for the “ENZYMES” experiment. If you did not attend this lab,
you CANNOT turn in the graphs. You will have a couple of days to complete the graphs. The instructor will provide the necessary information to complete this assignment.

Attendance Policy: Attendance is necessary for class participation and course work. There will be no make-up opportunities for missed assignments. Thus, it is strongly recommended that students attend each class. However, there will be no official course grading policy on attendance. If there is a conflict in your schedule, contact me ASAP.

Required Materials:

- BIOLOGY 2e, by OpenStax (FREE!)  
  https://openstax.org/details/books/biology-2e
  ISBN-10: 1-947172-51-4
- The Laboratory Manual is available (free) online on your e-campus site.

Instructor Policies and Suggestions for Student Success:

1. If late by more than 5 minutes, please try to be as quiet as possible.
2. Turn off your mobile phone/pager.
3. No use of headphones in the classroom.
4. Persistent talking among classmates during lecture will not be tolerated. A student may be asked to leave the classroom at the discretion of the instructor.
5. You are expected to take good care of all the equipment/materials provided to you in the lab. It is your responsibility to keep your working area and materials clean.
6. Consider this class as or more important than your job. It is not O.K. to leave lab early, or miss lab completely, because of work.

Richland College’s Quality Enhancement Plan ~
~Learning to Learn: Developing Learning Power
Richland College is piloting its Quality Enhancement Plan (QEP) in select classes. The QEP provides techniques, practices, and tools to help students develop the habits, traits or behaviors needed to be effective and successful lifelong learners in college and in life. For more information, please check QEP (http://www.richlandcollege.edu/qep/)

Academic Progress: Students are encouraged to discuss academic goals and degree completion with their instructors. Specific advising is available throughout the semester. Check http://www.rlc.dccd.edu/advising/ for more details.
Also, consult the Advising Syllabus (http://www.richlandcollege.edu/advising/advisingSyllabus.pdf) regularly to check if you are on track.

College Policies and Procedures:
For Institution Policies, please refer students to the Richland website www.richlandcollege.edu (Current Students) or to www.richlandcollege.edu/syllabusinfo/syllabusInformation.pdf

CATALOG COURSE DESCRIPTION
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.

PREREQUISITES

Revised for Summer 2018 04/06/2018
One of the following must be met: (1) DREA 0093 AND DWRI 0093; (2) ESOL 0044 AND ESOL 0054; or (3) have met TSI Reading and Writing standards AND DCCCD Writing score prerequisite requirement.

**Student Learning Outcomes**

Upon successful completion of this course, students will:

1. Describe the characteristics of life.
2. Explain the methods of inquiry used by scientists.
3. Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
4. Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.
5. Communicate effectively the results of scientific investigations.
6. Identify the basic requirements of life and the properties of the major molecules needed for life.
7. Compare and contrast the structures, reproduction, and characteristics of 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 of nucleic acids and proteins.
12. Describe the unity and diversity of life and the evidence for evolution through natural selection.

**CORE CURRICULUM Statement of Purpose**

Through the Texas Core Curriculum, students gain a foundation of knowledge of human cultures and the physical and natural world, develop principles of personal and social responsibility for living in a diverse world, and advance intellectual and practical skills that are essential for all learning.

**Core Objectives for the Sciences:**

- **Critical Thinking Skills** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- **Communication Skills** - 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.
Schedule OF LECTURE TOPICS, READINGS, LABS, LAB QUIZZES AND EXAMS.

<table>
<thead>
<tr>
<th>Lecture</th>
<th>topic</th>
<th>Reading</th>
<th>Lab topic</th>
<th>Lab Quiz</th>
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</thead>
<tbody>
<tr>
<td>Jun 06</td>
<td>Intro./What is biol.?</td>
<td>Chapter 1</td>
<td>Lab 1 Safety + orientation</td>
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<tr>
<td>Jun 07</td>
<td>Atoms to molecules</td>
<td>Chapter 2</td>
<td>Lab 2 Microscopy</td>
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<tr>
<td>Jun 10</td>
<td>Water/Organic molecules</td>
<td>Chapter 2/3</td>
<td>Lab 3 Scientific Method</td>
<td>Microscopy</td>
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<tr>
<td>Jun 11</td>
<td>Biomolecules</td>
<td>Chapter 3</td>
<td>Lab 4 Chem and Life</td>
<td>S. Method</td>
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<tr>
<td>Jun 12</td>
<td>Biomolecules</td>
<td>Chapter 3</td>
<td>Lab 5 Spectrophotometry</td>
<td>Chemistry &amp; Life</td>
</tr>
<tr>
<td>Jun 13</td>
<td>Metabolism/Cells</td>
<td>Chapter 6/4</td>
<td>Lab 6 Enzymes</td>
<td>Spectrophotometry</td>
</tr>
<tr>
<td>Jun 14</td>
<td><strong>EXAM 1 (Chapters 1-3)</strong></td>
<td></td>
<td><strong>Lecture in Lab</strong></td>
<td></td>
</tr>
<tr>
<td>Jun 17</td>
<td>Cells</td>
<td>Chapter 6</td>
<td>Lab 7 Cells Part 1</td>
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<tr>
<td>Jun 18</td>
<td>Cells/Membranes</td>
<td>Chapter 4/5</td>
<td>Lab 7 Cells Part 2</td>
<td>****</td>
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<tr>
<td>Jun 19</td>
<td>Resp/Photosynthesis</td>
<td>Ch 7/8</td>
<td>Lab 8 Membranes</td>
<td>Cells</td>
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<tr>
<td>Jun 20</td>
<td>Cellular Respiration</td>
<td>Chapter 7</td>
<td>Lab 9 Resp</td>
<td>Membranes</td>
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<tr>
<td>Jun 21</td>
<td><strong>EXAM 2 (Chapters 6,4)</strong></td>
<td></td>
<td><strong>Lecture in Lab</strong></td>
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<tr>
<td>Jun 24</td>
<td>Photosynthesis</td>
<td>Chapter 8</td>
<td>Lab 10 Cell Cycle</td>
<td>Resp</td>
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<tr>
<td>Jun 25</td>
<td>Cell Cycle</td>
<td>Chapter 10</td>
<td>Lab 11 Meiosis</td>
<td>Cell Cycle</td>
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<td>Jun 26</td>
<td><strong>EXAM 3 (Chapter 5,7)</strong></td>
<td></td>
<td><strong>Lecture in Lab</strong></td>
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<tr>
<td>Jun 27</td>
<td>Meiosis/Mendelian</td>
<td>Chapter 11/12</td>
<td>Lab 12 Mendel Genetics</td>
<td>Meiosis</td>
</tr>
<tr>
<td>Jun 28</td>
<td><strong>EXAM 4 (Chapter 8,10,11)</strong></td>
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<td><strong>Lecture in Lab</strong></td>
<td>****</td>
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<tr>
<td>Jul 01</td>
<td>DNA Replication</td>
<td>Chapter 14</td>
<td>Lab 13 Protein Synthesis</td>
<td>Mend.Genetics</td>
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<tr>
<td>Jul 02</td>
<td>Protein Synthesis</td>
<td>Chapter 15</td>
<td><strong>Lecture in Lab</strong></td>
<td>****</td>
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<tr>
<td>Jul 03</td>
<td><strong>EXAM 5 (Chap 12,14,15)</strong></td>
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***** BRING A GREEN SCANTRON SHEET*****