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: Spring 2019
Meeting Dates: January 22, 2019-May 16, 2019
Section: 83018
Class time and days
Lecture: T,R 12:30-1:50 PM in Y102
Lab: R 2:00 – 4:50 PM in SH-153

Instructor: Dr. Shahab (Shaun) Danesh
Office: WH294
Contact Info: sdanesh@dccc.edu
Phone: (214) 890-3824
YouTube Channel: https://www.youtube.com/channel/UCqpo1ekKomzZY0YbN5LD0Ng
Office hours: M (11:45-12:45pm), T (1:50-2:50pm), W (11:00-12:00pm), R (10:00-11:00am), F (10:15-11:15am) I will try to stream office hours live on YouTube when I can.

Last date to withdraw: Wednesday, April 17, 2019
Exam 5 Day and time: Thursday, May 16, 2019 12:30-2:20 PM @ Y102
Bring a Scantron sheet for the final exam

DCCCD 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.

PRE-REQUISITES
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.
RECOMMENDED PRE-REQUISITE: MATH 1314. Successful completion of College Algebra or concurrent enrollment in higher-level mathematics is recommended.

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
On-line homework (https://www.saplinglearning.com/ibiscms/login/) = 100 pts
Active Learning during lecture time 4 @ 12.5 points each = 50 pts
Lab Quizzes (10 @13 pts each) = 130 pts
Pre-labs (10 @12 pts each) = 120 pts
Lab Report = 100 pts
1000 pts

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

Revised for Fall 2017 08/2017
NOTES ABOUT GRADED MATERIALS:

- **Lecture Examinations**: Green scantron form 882E is required for all exams. If one exam is missed, the missed score will be replaced by your highest exam score. The lecture examinations may be a combination of multiple choice and true-false. Any subsequent exam may not be missed or postponed under any circumstances and will always result in a grade of (0/100). If no exams are missed, the highest exam grade will replace your lowest exam grade. If you turn in a scantron that can’t be readily graded because it is: crumpled, no name, done in ink pen instead of pencil, etc.) you will lose 5 points on your exam.

- **Online (Sapling) Homework**: Homework is completion based, meaning that if you get through all of the questions, and manage to answer the questions correctly on an attempt, you will earn full credit. Homework will be assigned for chapters 1-7, and 10-12 for ten total assignments. Only do these chapters for homework. You can access homework by going to https://www.saplinglearning.com/ibiscms/login/. Your ‘key’ is your section number. All homework must be completed before midnight on Friday, May 3rd any homework that is not fully complete by this time will not be counted under any circumstances. One homework grade will be dropped, at the end of the semester, your lowest homework grade will be raised to 10/10.

- **Lab Quizzes**: Lab quizzes are combination of short answer, multiple choice, matching and true/false. Quizzes cover material from the previous lab, for example, on the day of lab 5, we will have a quiz covering lab 4. One lab quiz will be dropped, at the end of the semester your lowest lab quiz grade will be increased to 13/13. 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 or no time to finish the quiz. All lab quizzes must be turned in 15 minutes after the start of lab period, if you arrive after this time, you forfeit the quiz.

- **Pre-lab worksheets**: Pre-lab assignments are found on the page immediately before the beginning of each lab exercise in the lab manual. Before each lab, (unless otherwise noted on the schedule), you must print out and complete a prelab worksheet and bring it to turn in at the beginning of each lab section. For example: on the day of lab 5, you must bring with you the completed pre-lab #5 with you to turn in at the beginning of lab, showing that you have read the lab. Points off for not printing out the pre-labs. Two points are taken off for each school day late. I do not accept emailed pre-labs. One pre-lab will be dropped, at the end of the semester your lowest pre-lab grade will be increased to 12/12. Lab manual is available for free on eCampus.

- **Active learning during class**: In four occasions we will work together as a class and in groups to critically think about concepts in class. One active learning assignment will be dropped at the end of the semester, your lowest active learning grade will be raised to 12.5/12.5. If any more than one is missed, it cannot be made up under any circumstances.

- **Lab Report**: You will write a lab report about the Enzymes (lab 6) exercise. Guidelines for this report will be posted a few weeks into the semester on eCampus. If you do not attend this lab, you must make up the lab by attending another section’s lab period. There is a 10% penalty for each school day a report is turned in late. Also, reports need to be typed and turned in as a physical copy, no digital copies accepted. For due dates, look at your class schedule. You may not work with anyone else on the lab report, nor can you turn in similar text or graphs. Plagiarism or cheating on this assignment will earn a grade of zero.

- **Extra credit**: During the semester, you will have one opportunity to turn in an art project for up to 10 points extra credit. The projects must cover a topic from the exam. You may use any medium you wish; however, the art projects should be labeled if possible. The projects are due on exam days. These projects must be turned in and will not be returned. Art projects done on paper should be done on a standard sheet of paper, meaning no posters. This is your only extra credit opportunity of the semester, meaning there are no other opportunities and please do not ask.

**Required Materials:**

- **BIOLOGY 2e**, by OpenStax (FREE!)
  
  https://openstax.org/details/books/biology-2e

  Print: Optional
  
  ISBN-10: 1-947172-51-4

  Digital:
  

Revised for Fall 2018 08/2018
• Sapling Learning (Online Homework System)
  • [https://www.saplinglearning.com/ibiscms/login/](https://www.saplinglearning.com/ibiscms/login/)
  • Your key is your course section number: 83018
  • Access is free. Go directly to the website to register.

• The Laboratory Manual is available (free) online on your e-campus site.

**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.

**Instructor Policies and Suggestions for Student Success:**

1. If late by more than 5 minutes, please try to be as quiet as possible and grab a seat close to the door.
2. Turn off your mobile phone.
3. No use of headphones in the classroom.
4. For student athletes, it is YOUR responsibility to coordinate with me with regard to any missed days/work ahead of time and discuss make-up dates due to game conflicts.
5. For RCHS student, I take attendance at the beginning of class. If you are not present when I take roll, it is your responsibility to check in with me at the end of lecture, if you don’t you will be marked absent even if you attended. If you show up more than 5 minutes late, you are absent for the entire period.
6. Persistent talking / whispering / giggling among classmates during lecture will not be tolerated. A student may be asked to leave the classroom at the discretion of the instructor.
7. 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.
8. 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.
9. Plagiarism is taking of someone’s ideas and misrepresenting them as one’s own. This includes word-for-word lifting of words as well as lifting ideas (even paraphrasing them in your own words) without giving someone credit for them (either by footnoting, or in the Works Cited at end of the paper). Plagiarism is not allowed.
10. Cheating is forbidden and is grounds for a grade of F for the semester.
11. If you turn in an assignment with no name, it will incur point deductions and it is YOUR responsibility to track me down and claim the paper. Your grade will appear as a ‘zero’ in the grade book until you do so.
12. Free tutoring is available at the Science Corner found on the second floor of Sabine Hall throughout the semester, take advantage of it!
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.dcccd.edu/advising/ for more details. Also, consult the Advising Syllabus (https://alt.richlandcollege.edu/assets/uploads/2015/02/AdvisingSyllabus.pdf) regularly to check if you are on track.

College Policies and Procedures:
Institutional Policies relating to this course can be accessed from the following link: www.richlandcollege.edu/syllabipolicies

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.
<table>
<thead>
<tr>
<th>Day</th>
<th>Lecture and Reading Topic</th>
<th>Chapter</th>
<th>Lab Topic</th>
<th>Lab QUIZ Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 22</td>
<td>What is Biology?</td>
<td>1</td>
<td>Class Orientation &amp; Lab 1 (Safety)</td>
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<td>Jan 24</td>
<td>Scientific Method</td>
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<td>Jan 29</td>
<td>Atoms and Bonding</td>
<td>2</td>
<td>Lab 2 Microscopy</td>
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<tr>
<td>Jan 31</td>
<td>Atoms and Bonding</td>
<td>2</td>
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<td>Feb 05</td>
<td>Water</td>
<td>2</td>
<td>Lab 3 Scientific Method</td>
<td>Microscopy</td>
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<td>Feb 07</td>
<td>Carbon</td>
<td>3</td>
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<tr>
<td>Feb 12</td>
<td>Molecules of Life</td>
<td>3</td>
<td>Lab 4 Chem and Life</td>
<td>GraphsScMeth</td>
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<td>Feb 14</td>
<td>Molecules of Life</td>
<td>3</td>
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<td>Feb 19</td>
<td>Metabolism</td>
<td>6</td>
<td>Lab 5 Spectrophotometry</td>
<td>Chem and Life</td>
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<tr>
<td>Feb 21</td>
<td>Enzymes</td>
<td>6</td>
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<td>Feb 26</td>
<td>EXAM 1 (Chapters 1,2,3)</td>
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<td>Feb 28</td>
<td>NO CLASS OR LAB ON THURSDAY SCHOOL CLOSED FOR FACULTY DEVELOPMENT DAY</td>
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<td>Mar 05</td>
<td>Cells</td>
<td>4</td>
<td>Lab 6 Enzymes</td>
<td>Spectrophotometry</td>
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<td>Mar 07</td>
<td>Membranes</td>
<td>5</td>
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<td>Mar 12</td>
<td>SPRING BREAK NO SCHOOL THIS WEEK</td>
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<td>Mar 14</td>
<td>SPRING BREAK NO SCHOOL THIS WEEK</td>
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<td>Mar 19</td>
<td>EXAM 2 (Chapters 4,6)</td>
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<td>Lab 7 Cells</td>
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<td>Mar 21</td>
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<th>Lab topic</th>
<th>Lab QUIZ Topic</th>
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<tr>
<td>Mar 26</td>
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<td>Lab 8 Membranes</td>
<td>Cells</td>
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<td>Cell Respiration</td>
<td>7</td>
<td>Lab 8 Membranes</td>
<td>Cells</td>
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<td>Apr 02</td>
<td>Photosynthesis</td>
<td>8</td>
<td>Lab 9 Cell Resp/Photo</td>
<td>Membranes&amp; Lab Report</td>
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<td>Photosynthesis</td>
<td>8</td>
<td>Lab 9 Cell Resp/Photo</td>
<td>Membranes&amp; Lab Report</td>
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<td>Lab 10 Cell Cycle</td>
<td>CellResp/Photo</td>
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<td>The Cell Cycle</td>
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<td>Lab 10 Cell Cycle</td>
<td>CellResp/Photo</td>
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<td>Apr 16</td>
<td>Meiosis</td>
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<td>Lab 11 Meiosis</td>
<td>Cell Cycle</td>
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<td>Apr 18</td>
<td>Patterns of Inheritance</td>
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<td>Lab 11 Meiosis</td>
<td>Cell Cycle</td>
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<td>Apr 23</td>
<td>Genetics Problems</td>
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<td>Lecture in lab during lab time</td>
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<td>Apr 25</td>
<td>DNA replication</td>
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<td>Lecture in lab during lab time</td>
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<td>DNA replication</td>
<td>14</td>
<td>Lab 12 Mend. Genetics/Lec. in lab</td>
<td>Meiosis</td>
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<td>May 02</td>
<td>Exam 4 (Chapters 8, 10,11)</td>
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<td>Lab 12 Mend. Genetics/Lec. in lab</td>
<td>Meiosis</td>
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<td>May 07</td>
<td>Protein Synthesis</td>
<td>15</td>
<td>Lab 13 Protein Synth/Lec.in lab</td>
<td>Mendelian Genetics+ProtSyn</td>
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<tr>
<td>May 09</td>
<td>Protein Synthesis</td>
<td>15</td>
<td>Lab 13 Protein Synth/Lec.in lab</td>
<td>Mendelian Genetics+ProtSyn</td>
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</table>

Final Exam Day and Time: (Chapter 12,14,15) Thursday, May 16, 2019
12:30-2:20 PM @ Y102

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