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)

INSTRUCTOR’S INFORMATION
(Instructor reserves the right to amend this information as necessary.)

Semester and Year: Spring 2019
Section: BIOL1406-83483

<table>
<thead>
<tr>
<th>Lecture Time and Location</th>
<th>Lab Time and Location</th>
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<tbody>
<tr>
<td>Online delivery on eCampus</td>
<td>Wednesdays. 5:40 - 8:25 p.m.</td>
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<td>Room SH151 LAB</td>
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Instructor: Zahra Ghaemi
Instructor’s DCCCD email: zghacemi@dcccd.edu
Contact Info: (972) 238-6014
Office: SH128

Last day to drop a class with a “W” – April 17.
You may drop no more than 6 courses during your entire undergraduate career unless the drop qualifies as an exception.

Final Exam Day and time: Wednesday, May 15, 2019, 5:40 p.m. – 6:45 p.m. in lab room SH151.

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:**
A standard grading scale will be used to calculate % total points, rounded to the NEAREST whole number

100-90% = A; 89-80% = B; 79-70% = C; 69-60% = D; 59% and below = F

<table>
<thead>
<tr>
<th>Assessment Activity</th>
<th>Points</th>
</tr>
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<tbody>
<tr>
<td><strong>Lecture Component (700 pts)</strong></td>
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</tr>
<tr>
<td>Getting started activities</td>
<td>10</td>
</tr>
<tr>
<td>4 exams: 4@100 pts each</td>
<td>400</td>
</tr>
<tr>
<td>Comprehensive final exam</td>
<td>100</td>
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<tr>
<td>13 Sapling homework: 13 count</td>
<td>100</td>
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<tr>
<td>Discussion Activities: highest 5 scores @ 18 pts each</td>
<td>90</td>
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<tr>
<td><strong>Lab Component (300 pts)</strong></td>
<td></td>
</tr>
<tr>
<td>Lab grades: highest 10 scores @ 25 pts each</td>
<td>250</td>
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<tr>
<td>Lab Report</td>
<td>50</td>
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*Grading scale may change at the discretion of the instructor.*

Total Possible Points = 1000 pts

**GETTING STARTED ACTIVITIES (1% of your overall grade):** During the first week of classes, you’ll complete a series of orientation activities posted in the “Getting Started” menu.

**Lecture Grades (~2/3 of total grade):**

**LECTURE EXAMINATIONS (40% of your overall grade):** The exams will be a combination of multiple choice, short answer, and fill the blanks. Each exam will be administered IN PERSON, with dates listed in the assignment calendar. Exams #1 and #2 will be administered in the **Richland Test Center (M-105).** Exams #3 and #4 will be administered during lab time as shown in the Calendar (at end).

**COMPREHENSIVE FINAL (10% of your overall grade):** The final exam is comprehensive over Chapters 1 – 8, 10, 11, 12, 14 & 15. It will be given on **Wednesday, May 15, 2019, 5:40 p.m. – 6:45 p.m. in room SH151.** It consists of 50 multiple-choice questions. You will need a scantron, form 882E, for each exam. If your final exam grade is better than your lowest exam grade, that low exam grade (only one) will be dropped and replaced by your final exam grade.

**DISCUSSION ACTIVITIES (9% of your overall grade):** will involve participation in either an online discussion or small group activity about a specific topic or lecture materials. For online discussions, you will be provided with a prompt that asks you to think about the topic, review course materials, or research information on the internet. Discussion activities will consist of lecture quizzes, discussions and other similar activities assigned in the class.

**ONLINE HOMEWORK SYSTEM (10% of your overall grade):** For each chapter, the corresponding homework assignments will be posted at **Sapling.***

**Lab Grades (~1/3 of total grade):**

**LAB GRADES (25% of your overall grade):** Lab grades will be earned through taking lab quizzes, and completing the required lab activities. You will be given a lab grade for each lab class this semester (12). Your lowest 2 lab grades will be dropped.
**Lab-Quiz:** 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).

**Exercise Grade:** For successfully completing the lab and cleaning up your work area, you will earn a few points.

**LAB REPORT (5% of your overall grade):** After performing the Lab 3 Scientific Methods, each individual student must write a lab report. If you did not attend the Lab 3, you CANNOT write a lab report for it. You will be given the lab report instructions at that time.

Grades for exams and quizzes will be posted at eCampus and your final course grade through eConnect. Your grade will NOT be sent to you or anyone else by email.

**Attendance Policy:** LECTURE: You are expected to log-in and utilize the course materials and activities in eCampus on a regular basis. As a minimum expectation, you should log-in to the course at least 3 separate days each week, spending at least 6 hours every week working on the lecture part of this class. This is in addition to the time you’ll spend in lab every week. If you are someone who struggles with development courses and Chemistry, you should expect to spend much MORE than the minimum to pass this class. **LAB:** Attendance to Wednesday night labs is mandatory. It is very hard to pass this class successfully if you do not participate in the weekly labs. If you miss a lab, you cannot earn the points for any assignments completed during that lab. Because problems or illness do arise unexpectedly, your lowest 2 lab grades will be dropped.

**Make-up Exam Policy, Late Work, and/or Lab:**

**Exams:** All students are expected to take exams as scheduled. NO EXAMs can be made up if missed. If a student missed the exam, the student gets a zero for that exam. But the zero (only one) will be replaced by the student’s final exam score.

**Homework assignments (HA):** All assigned homework must be completed before assigned due dates online.

**Discussion Activities:** Only one lowest grade will be dropped, be sure not to miss more than one.

**Lab Grades:** No labs can be made up. Students will receive a zero for any lab missed. But the two lowest lab grades will be dropped by the end of the semester.

**Lab Report:** All Lab reports must be submitted by Wednesday Feb 27, 6:00 p.m. Late lab reports will receive a 50% deduction in total points. Late lab reports must be submitted by May 1, 2018.

**Required Materials:**

- **BIOLOGY 2e, by OpenStax** *(FREE!)*
  https://openstax.org/details/books/biology-2e
  
  **Print:** Optional
  
  ISBN-10: 1-947172-51-4
  
  **Digital:**
  

- Sapling Learning (Online Homework System)
  SUPPLIED ELECTRONICALLY FREE OF CHARGE VIA ECAMPUSS

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

**Student-Instructor Contract**

The instructor agrees to provide timely responses to student requests or inquiries and communicate frequently
through email, course announcements, and timely grading feedback. In return, the student agrees to devote a reasonable amount of time and energy to successful completion of the course, to meet all deadlines, to avoid plagiarism and other forms of cheating, and to communicate frequently and clearly with the instructor, particularly when difficulties arise. Technical problems must be reported within 24 hours.

Communication

REQUIRED SUBJECT LINE FORMAT: Put the course ID (BIOL-1406-83483) and your full name in the subject line when you email me.

Instructor Response Time: I will reply to all messages sent in the correct format within 24 hours during weekdays and 48 hours on weekends. But if you do not receive any response from me, email me again. Also, feel free to ask your questions during the lab period.

Technical Requirements
For participating in this online class, you should already be able to perform the following tasks:
Send/receive email, including attaching and downloading document files within e-mail.
Download posted course materials such as PowerPoint slides or exam review files.
Complete assignments using word processing software and work with PDF files & forms.
Locate, save, and retrieve files on the computer.
Read and submit comments and post images to a discussion board.
Use a web browser like Internet Explorer or Firefox and search engines like Google

Instructor Policies
➢ No Use of cell phone/ computer
➢ No use of headphones during lab time.
➢ Eating and drinking are not allowed in the lab due to safety concerns.
➢ 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.

Tips for Success:
Stay focus, alert and show interest when you are studying the course materials and performing the lab exercises
Study assigned chapter before coming to the lab
Be on time for the lab
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.
Pay attention to the big picture first, and then learn details
Making flash cards
Using videos, animations and pictures can help you to understand Biology better
Make a link between concepts
Make study group and explain what you have learned
I highly recommend you to attend one the Back on Track sessions if you failed the exam 1 or your grade was lower than expected
You are welcome to ask your questions anytime, if some parts are not clear to you
Practice tests or quizzes

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** (http://www.richlandcollege.edu/advising/advisingSyllabus.pdf) regularly to check if you are on track.

**College Policies and Procedures:**
For Institution Policies, please refer to the Richland website www.richlandcollege.edu

**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.
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<thead>
<tr>
<th>Week</th>
<th>Lecture Schedule</th>
<th>Lab Schedule</th>
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<tbody>
<tr>
<td></td>
<td><strong>Online delivery in eCampus (MTWRFSU)</strong></td>
<td><strong>Wednesday 5:40 to 8:25 pm</strong></td>
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<tr>
<td>Week 1</td>
<td>Ch 1 Themes in Biology</td>
<td>Jan 23: Course orientation &amp; Lab 1 SAFETY</td>
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<td>Week 2</td>
<td>Ch 2 The nature of molecules and The properties of water</td>
<td>Jan 30: LAB 2 MICROSCOPY (Lab 1 quiz)</td>
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<td>Week 3</td>
<td>Ch 3 The chemical building /blocks of life</td>
<td>Feb 6: LAB 3 SCIENTIFIC METHOD (Lab 2 quiz) Collect Data for writing the Lab Report</td>
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<tr>
<td>Week 4</td>
<td>Take Exam 1, Chapters 1, 2 &amp;3 in the Richland Test Center (M-105) and available on Thursday Feb 14 to Saturday Feb 16</td>
<td>Feb 13: LAB 4 CHEMISTRY AND LIFE (Lab 3 quiz)</td>
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<td>Week 5</td>
<td>Ch 6 Metabolic concepts</td>
<td>Feb 20: LAB 5 SPECTROPHOTOMETRY(Lab 4 quiz)</td>
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<td>Week 6</td>
<td>Ch 4 Cells</td>
<td>Feb 27: No Lab Lab report due</td>
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<td>Week 7</td>
<td>Ch 5 Membrane</td>
<td>Mar 6: LAB 6 ENZYME (Lab 5 quiz)</td>
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<td>Week 8</td>
<td>(Mar 11- Mar 17) SPRING BREAK NO LAB</td>
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<td>Week 9</td>
<td>Take Exam 2, Chapters 6, 4 &amp;5 in the Richland Test Center (M-105) and available on Thursday March 21 to Saturday March 23</td>
<td>Mar 20: LAB 7 CELLS (Lab 6 quiz)</td>
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<td>Week 10</td>
<td>Ch 7 How Cells Harvest Energy</td>
<td>Mar 27: LAB 8 MEMBRANES: DIFFUSION AND OSMOSIS (Lab 7 quiz)</td>
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<td>Week 11</td>
<td>Ch 8 Photosynthesis</td>
<td>Apr 3: LAB 9 RESPIRATION &amp; PHOTOSYNTHESIS (Lab 8 quiz)</td>
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<tr>
<td>Week 12</td>
<td>Ch 10 How cells divide &amp; Ch 11: Sexual reproduction and meiosis,</td>
<td>Apr 10: LAB 10 Cell Cycle &amp; Lab 11 MEIOSIS (Lab 9 quiz)</td>
</tr>
<tr>
<td>Week 13</td>
<td>Review for the exam 3</td>
<td>Apr 17: Take Exam 3, Chapters 7, 8, 10 &amp;11 in the Lab room (Lab 10 quiz)</td>
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<td>Week 14</td>
<td>Ch 12 Pattern of Inheritance &amp; Ch 14 DNA : the genetic materials</td>
<td>Apr 24: LAB 12 MENDELIAN GENTICS (Lab 11 quiz)</td>
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<tr>
<td>Week 15</td>
<td>Ch 15 Genes and how they work</td>
<td>May 1: LAB 13 GENE EXPRESSION (Lab 12 quiz)</td>
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<tr>
<td>Week 16</td>
<td>Review for the exam 4</td>
<td>May 8: Take Exam#4, Chapters 12, 14 &amp;15 On Wednesday May 8 from 5:40 pm until 6:45 pm in the lab room. Review for the final exam in the lab room (7:00 to 8:25 pm)</td>
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<tr>
<td>Week 17</td>
<td>Take the final exam on Wednesday May 15 at 5:40 pm to 6:45 pm in the lab room</td>
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