RICHLAND COLLEGE DEPARTMENT OF BIOLOGY  
School of Mathematics, Science, and Health Professions  
Course Syllabus For  
Biol 1408: Biology for Non-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: 83005  
Class time and days: Tues 11.00am – 12.20pm  
Thurs 11.00am – 12.20pm  
Lab: Thurs 8.00am – 10.50am

Instructor: Dr Lesley Benton  
Office: SH262  
Office Hours: Refer to instructors e-campus site

Contact Info: 972-238-6044  
e-mail: lesley@dcccd.edu

Room: WH160

Last date to withdraw: Wednesday April 17th 2019

Final Exam Date and time: Tuesday May 14th 11am – 12pm  
WH160

Evaluation Procedures:  
4 lecture exams worth 100 points each  
13 lab grades worth 10 points each  
Activities or assignments (cell model)  
Interactive classroom assignments (during review sessions)  
Lab Attendance Grade  
1 comprehensive final exam  
Learnsmart On-line Homework

Total = 850 points

(A = 765-850; B = 680-764; C = 595-679; D = 510-594; F = 509 and below)

Attendance Policy: Attendance for lecture and lab is mandatory and recommended

Academic Progress: Students are encouraged to discuss academic goals and degree completion with their instructors. Specific advising is available throughout the semester. Check http://richlandcollege.edu/advising/ for more details.

Hoefagels 4th Edition Connect Access Card – 1 semester stand-alone homework code only (with e-book): ISBN: 9781260183894, this can be purchased directly from the bookstore or when the 2 week free access code runs out, on-line from the instructors e-campus site.

Note: Students should not purchase a random on-line access code as they will be charged $120 rather than the $50 one semester charge that Richland negotiated.

Lab Manual

Revised for Spring 2019
All labs are available for download and printing on instructor's e-campus site at no cost. Make sure you print these and bring them to each lab or you'll lose quiz points!!!

COURSE DESCRIPTION: Presentation of biological concepts for the non-science major. Emphasis will be on scientists and their contributions to the science field, scientific problem solving, unity of life including cells and genetic information, energy pathways important to life, and current issues in biology. (3 Lec, 3 Lab)

PREREQUISITES: Prerequisite: One of the following must be met: (1) DREA 0093 AND DWRI 0093; (2) English as a Second Language (ESOL) 0044 AND 0054; or (3) have met Texas Success Initiative (TSI) Reading and Writing standards AND the college Writing score prerequisite requirement.

COURSE 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 OBJECTIVES DEVELOPMENT STATEMENT
Critical Thinking and empirical & quantitative skills will be demonstrated by students researching, analyzing & interpreting 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, lab report

STUDENT LEARNING OUTCOMES:

LECTURE:
1. Distinguish between prokaryotic, eukaryotic, plant and animal cells, and identify major cell structures.
2. Identify stages of the cell cycle, mitosis (plant and animal), and meiosis.
3. Interpret results from cell physiology experiments involving movement across membranes, enzymes,
4. Photosynthesis, and cellular respiration.
5. Apply genetic principles to predict the outcome of genetic crosses and statistically analyze results.
6. Describe karyotyping, pedigrees, and biotechnology and provide an example of the uses of each
7. Identify parts of a DNA molecule, and describe replication, transcription, and translation.
8. Analyze evidence for evolution and natural selection.

LAB:
1. 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 scientific investigations.
4. Distinguish between prokaryotic, eukaryotic, plant and animal cells, and identify major cell structures.
5. Identify stages of the cell cycle, mitosis (plant and animal), and meiosis.
6. Interpret results from cell physiology experiments involving movement across membranes, enzymes,
7. Photosynthesis, and cellular respiration.

Revised for Spring 2019
8. Apply genetic principles to predict the outcome of genetic crosses and statistically analyze results.
9. Identify the importance of karyotypes, pedigrees, and biotechnology.
10. Identify parts of a DNA molecule, and describe replication, transcription, and translation.
11. Analyze evidence for evolution and natural selection.

**Race to finish:**
(https://www.richlandcollege.edu/apply-reg/finishrace/pages/default.aspx) is where students can find -- in one place -- all types of assistance and resources that can help them complete their degree(s) and/or certificate(s), seamlessly transfer to a university or enter the workforce with better opportunities.

**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 2013: [http://www.richlandcollege.edu/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://richlandcollege.edu/advising/](http://richlandcollege.edu/advising/) for more details.

**College Policies and Procedures:**
For Institution Policies, please refer to the Richland website [www.richlandcollege.edu/syllabipolicies](http://www.richlandcollege.edu/syllabipolicies)

**See last page of syllabus for class schedule.**

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

There is no eating or drinking allowed during lectures or labs. Please make sure all pagers and cell phones are switched off during labs and lectures. **Headphones are not allowed in class during lab or lecture, anyone wearing headphones during a lecture or lab exam will be given a zero grade.**

Please pay attention during lectures and labs, as I will emphasize important information, which will be of use when it comes to studying for exams. When in the lecture bring and read lecture notes (I strongly advise you to print out a copy), please read textbooks in the evenings/during study time to supplement the lecture notes. There is no need to bring textbooks to class (this will lighten your load considerably!). During lectures you should be constantly supplementing your lecture notes, some topics discussed will not be in the notes (or will need clarification) and will be examinable, so listen carefully! **You must also print out and bring the appropriate lab print out to that specific lab, failure to do so will result in a loss of points.** There are no make-up labs, if you miss a lab you must miss the points associated with this lab.

Persistent talking during the lecture is very distracting to both your fellow students and me. Feel free to ask questions related to the lecture at any time but please keep other unrelated chat till after the lecture. Please note it is not OK to leave/miss lectures or labs because of any outside job, remember this is your future don’t make it a missed opportunity! **Lecture exams cannot be made-up without relevant official documentation.**
<table>
<thead>
<tr>
<th>WEEK</th>
<th>WEEK OF</th>
<th>LAB TOPIC (Thursday 8.00am - 10.50am) SH127</th>
<th>TUESDAY LECTURE (11.00 - 12.20pm) WH160</th>
<th>THURSDAY LECTURE (11.00 - 12.20pm) WH160</th>
<th>Hoefnagels 4th Ed CHAPTERS</th>
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<tbody>
<tr>
<td>1</td>
<td>1/21/19</td>
<td><strong>Ex 1 &amp; 2:</strong> Orientation, Safety &amp; Scientific Method</td>
<td>Scientific Study of Life</td>
<td>The Chemistry of Life</td>
<td>Chapters 1 &amp; 2</td>
</tr>
<tr>
<td>2</td>
<td>1/28/19</td>
<td><strong>Ex 3:</strong> Metric System &amp; Microscopy</td>
<td>Chemistry of Life cont.d</td>
<td>Chemistry of Life cont.d</td>
<td>Chapters 2</td>
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<tr>
<td>3</td>
<td>2/4/19</td>
<td><strong>Ex 4:</strong> Life is Chemistry (chemical tests)</td>
<td>Cell Structure &amp; Function</td>
<td>Cell Structure &amp; Function</td>
<td>Chapter 3</td>
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<tr>
<td>4</td>
<td>2/11/19</td>
<td><strong>Ex 5:</strong> Diffusion &amp; Cell Model</td>
<td>Revision</td>
<td>EXAM 1 - Chapters 1-3</td>
<td>Chapters 1-3</td>
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<td>5</td>
<td>2/18/19</td>
<td><strong>Ex 6:</strong> Metabolism &amp; Enzymes</td>
<td>The Energy of Life</td>
<td>The Energy of Life</td>
<td>Chapters 4</td>
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<tr>
<td>6</td>
<td>2/25/19</td>
<td>TCCTA Meeting No Lab</td>
<td>Photosynthesis</td>
<td>TCCTA Meeting No Lecture</td>
<td>Chapter 5</td>
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<tr>
<td>7</td>
<td>3/4/19</td>
<td><strong>Ex 7:</strong> Photosynthesis &amp; Outdoor Lab</td>
<td>Photosynthesis</td>
<td>How Cells Release Energy - Respiration</td>
<td>Chapters 5 &amp; 6</td>
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<td></td>
<td>3/11/19</td>
<td><strong>SIX LABS</strong></td>
<td><strong>SPRING BREAK</strong></td>
<td><strong>No Classes</strong></td>
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<td>8</td>
<td>3/18/19</td>
<td><strong>Ex 8:</strong> Respiration</td>
<td>How Cells Release Energy - Respiration</td>
<td>Revision</td>
<td>Chapter 6</td>
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<td>9</td>
<td>3/25/19</td>
<td><strong>Ex 9:</strong> DNA, the Master Molecule</td>
<td>EXAM 2 - Chapters 4-6</td>
<td>DNA Structure &amp; Gene Function</td>
<td>Chapter 7</td>
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<td>10</td>
<td>4/1/19</td>
<td><strong>Ex 10:</strong> Cellular reproduction (Mitosis &amp; Meiosis)</td>
<td>DNA Structure &amp; Gene Function</td>
<td>DNA Replication &amp; Mitosis</td>
<td>Chapter 7 &amp; 8</td>
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<td>11</td>
<td>4/8/19</td>
<td><strong>Ex 11:</strong> Mendelian Genetics</td>
<td>Mitosis &amp; Meiosis</td>
<td>Meiosis</td>
<td>Chapter 8 &amp; 9</td>
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<td>12</td>
<td>4/15/19</td>
<td><strong>No Lab - Meet for Lecture in Lab</strong></td>
<td>Revision</td>
<td>EXAM 3 - Chapters 7-9</td>
<td>Chapters 7-9</td>
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<td>13</td>
<td>4/22/19</td>
<td><strong>Ex 12:</strong> Human Genetics</td>
<td>Patterns of Inheritance</td>
<td>Patterns of Inheritance</td>
<td>Chapter 10</td>
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<td>14</td>
<td>5/19/19</td>
<td><strong>Ex 13:</strong> Biotechnology (part 1)</td>
<td>Biotechnology</td>
<td>Revision</td>
<td>Chapters 11</td>
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<td>15</td>
<td>5/6/19</td>
<td><strong>Ex 13:</strong> Biotechnology (part 2) / Lecture in Lab</td>
<td>EXAM 4 - Chapters 10 &amp; 11</td>
<td>Revision for Final</td>
<td>Chapters 10 &amp; 11</td>
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<td>16</td>
<td>5/13/19</td>
<td><strong>NO LABS</strong></td>
<td><strong>FINAL EXAM WEEK</strong></td>
<td><strong>COMPREHENSIVE</strong></td>
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