

# BIOL 1610: Biology I

Utah State University Eastern

Fall 2018, 3 credits

**Meeting Time:** MWR 8:30-9:20, CIB 101

**Instructor:** Dr. Wayne Hatch, Reeves 264

**Office Hours:** T 1-4pm; R 10-12pm; and by appointment

**Contact:** wayne.hatch@usu.edu, 613-5393

## **Catalog description:**

Principles of cell biology, energetics, and genetics; plant structure, function, and development. Three lectures and one lab. To receive University Studies Breadth Life Sciences (BLS) credit, students must complete both BIOL 1610 and either BIOL 1620 or BIOL 3300. The BIOL 1610 and BIOL 3300 option for BLS credit is available only to students majoring in Biological Engineering or Environmental Engineering. The BIOL 1610 and BIOL 3060 option for BLS credit is available only to students in the Bioinformatics Emphasis of the Computer Science Major.

## **General Course Objectives**

- Become competent in the nature of science
- Explore the chemical basis of life
- Understand the working cell model
- Explore how life obtains and utilizes energy
- Gain knowledge of the function of genes and their inheritance
- Explain principles of evolution
- Identify evolutionary relationships among species

## **Recommended Pre-requisites:**

Prior or concurrent enrollment in CHEM 1110 or CHEM 1210, prior biology courses.

## **Textbook:**

Biology: How Life Works; Morris, J. 2013. ISBN-13: 978-1429218702

## **Course design:**

As described in the course catalog this course consists of three lecture periods each week. The lecture periods will consist of lectures, discussions and other activities designed to encourage student learning of the objectives listed above.

## *Poll Everywhere:*

To help facilitate participation in class, the online polling service, Poll Everywhere, will be used. This will be free for students. Students will not be required to register but may do so if they would like to review questions from class. To register use the following url: [www.polleverywhere.com/register?p=6ju59-wp5a&pg=lET6EZJ&u=GGC4qeZy](http://www.polleverywhere.com/register?p=6ju59-wp5a&pg=lET6EZJ&u=GGC4qeZy)  
Dr. Hatch's presentation page is <https://pollev.com/waynehatch740>

### *Chapter Learning Objectives*

On the homepage in Canvas a link is available to download learning objectives for each chapter. It is highly recommended that the student view these and in their studies master these objectives. As a help, Dr. Hatch will provide time for each student to receive feedback on his/her understanding of each objective before each exam if desired.

### **Assessments:**

This course is primarily a course to provide a foundation of biological concepts for further studies in biology. Because of this, the assessments in this class are strictly designed to assess the student's knowledge of core biological concepts. This will be done with exams and quizzes. Extra assignments will be few as listed below.

### *Exams*

Six written tests worth 100 points each will be given throughout the semester. Each test will cover one section of material from the text. Questions for the exams will be based off of the learning objectives for each chapter that will be provided on Canvas. These exams will be given in the testing center and will open on the scheduled Thursday and close on Friday of the week listed on the schedule. There will not be a final comprehensive exam, but the final section exam will be given during finals week.

### *Quizzes*

Quizzes (5-10pts) will be taken in Canvas. These will assess student's knowledge of the material from each chapter. There will be 24 quizzes throughout the semester with each quiz corresponding to each chapter of material. After a chapter has been discussed in class, a quiz will be open that day in Canvas. Some chapters may be discussed over a two day period. The quiz would then be available the day that we are done discussing that chapter in class. These quizzes will help the student to stay on top of learning the material and provide the student a formative assessment.

### *Extra*

- A pre- and post-survey will be worth 5 points each that assesses general knowledge at the beginning and end of the course.
- Students may attend 3 biology seminars or watch an equivalent documentary for 5 points each. The student will write a paragraph summarizing the contents of the seminar or video and submit it to Dr. Hatch for credit.
- Completion of the IDEA course evaluation will be worth 5 points. Students will receive an email for this 3 weeks prior to the end of the semester. See Dr. Hatch if you do not receive an email about this.
- Any other extra assignments will be presented during the semester in class.

### **Grading:**

|              |                |
|--------------|----------------|
| 6 exams      | 600pts         |
| 24 quizzes   | ~150pts        |
| <b>Total</b> | <b>~750pts</b> |

Percentage Grading Scale:

|           |          |          |          |            |
|-----------|----------|----------|----------|------------|
| 100-93 =A | 89-87=B+ | 79-77=C+ | 69-67=D+ | below 60=F |
| 92-90 =A- | 86-83=B  | 76-73=C  | 66-63=D  |            |
|           | 82-80=B- | 72-70=C- | 62-60=D- |            |

### **Expectations of Students:**

It is expected that students will come to class ready to participate in each discussion or lecture as appropriate. This means reading the chapter before class and writing down questions to ask during class. Students should access the chapter outlines and use them as a guide in reading the chapter and taking notes during class. It is also expected that you will avoid disrupting the class in general as well those immediately surrounding you. Many actions such as texting may seem to only affect yourself but generally also annoy and discourage the learning of the students around you.

### **Successfully navigating this course**

The most important task in this course is to master the learning objectives and communicate that mastery.

To do so, a student must:

1<sup>st</sup>- know what the learning objectives are by accessing them on Canvas.

2<sup>nd</sup>- do whatever it takes to learn the concepts. This may include reading the text, taking notes in class, completing practice questions, using any free content online, discussing the material with peers or Dr. Hatch (by the way, he loves discussing the material; and no, he didn't always know it; and no, he doesn't know everything about it; he especially enjoys listening to students discuss it).

3<sup>rd</sup>- demonstrate mastery by completing quizzes and exams.

### **Policies on attendance and make-up work:**

Generally, students who attend class regularly and are attentive perform better in the class. Specifics about assignments, changes in the schedule/assignments/exams will typically only be announced in class. If you will be gone for a test, let Dr. Hatch know a day ahead of time so that accommodations can be made.

### **Canvas:**

Canvas is where course content, grades, and communication will reside

<http://canvas.usu.edu>

Your username is your A# and your password is your global password. For Canvas, passwords, or any other computer-related technical support contact the IT Service desk. (435)797-4357. <http://it.usu.edu>

### **Academic Dishonesty:**

Cheating and/or plagiarism are illegal and will not be tolerated. If a student is found guilty, the student may immediately fail the course and possible expulsion from the college. Any suspicion of an academic integrity violation (AIV) may be reported by the instructor to the university. As stated in student code Section VI-1 "Whenever an instructor reasonably suspects that a student has committed an academic integrity violation, the accused student shall be notified by the instructor of the violation and its consequences through use of the academic integrity violation form (AIVF) within seven days that a violation has occurred and that a sanction is appropriate."

### Classroom Accommodation For Students With Disabilities

If a student has a disability that qualifies under the Americans with Disabilities Act (ADA) and requires reasonable accommodation, he/she should contact the Academic Access Center (AAC) for information on appropriate policies and procedures. Disabilities covered by ADA may include learning, sensory, emotional, physical, or medical impairments. Students may contact the AAC if they are not certain whether a condition qualifies. Regional campus students may contact the DRC located in Room 1010 of the University Inn, 435-797-2444 (voice), 435-797-0740 (TTY) or toll free at 800-259-2966. USU Eastern students may contact the AAC located in room 223 of the JLSC, 435-613-5337. Please contact the AAC as early in the semester as possible.

**Course Schedule:** Open days will be a continuation of previous day's material.

| <b>Week</b>          | <b>Monday</b>                                    | <b>Wednesday</b>                                | <b>Thursday</b>   |
|----------------------|--|---|---|
| <i>Aug 27-Aug 31</i> | Introductions                                    | <b>Ch. 1:</b> Life                              | <b>Ch. 2:</b> Molecules of Life                                       |
| <i>Sep 3-7</i>       | <i>Labor Day (No Class)</i>                      |   | <b>Ch. 3:</b> Nucleic Acid and the Encoding of Biological Information |
| <i>Sep 10-14</i>     |  | <b>Ch. 4:</b> Translation and Protein Structure |   |
| <i>Sep 17-21</i>     | <b>Test 1</b>                                    | <b>Ch. 5:</b> Organizing Principles             |   |
| <i>Sep 24-28</i>     | <b>Ch. 6:</b> Making Life Work                   |   | <b>Ch. 7:</b> Cellular Respiration                                    |
| <i>Oct 1-5</i>       |  | <b>Ch. 8:</b> Photosynthesis                    |   |
| <i>Oct 8-12</i>      | <b>Test 2</b>                                    | <b>Ch. 9:</b> Cell Communication                | <b>Ch. 10:</b> Cell Form and Function                                 |
| <i>Oct 15-19</i>     | <b>Ch. 11:</b> Cell Division                     | <b>Ch. 12:</b> DNA Replication and Manipulation |   |
| <i>Oct 22-26</i>     | <b>Test 3</b>                                    | <b>Ch. 13:</b> Genomes                          | <b>Ch. 14:</b> Mutation and DNA Repair                                |
| <i>Oct 29-Nov 2</i>  | <b>Ch. 15:</b> Genetic Variation                 | <b>Ch. 16:</b> Mendelian Inheritance            |   |
| <i>Nov 5-9</i>       | <b>Test 4</b>                                    | <b>Ch. 17:</b> Beyond Mendel                    | <b>Ch. 18:</b> Genetic and Environmental Basis of Complex Traits      |
| <i>Nov 12-16</i>     | <b>Ch. 19:</b> Genetic and Epigenetic Regulation | <b>Ch. 20:</b> Genes and Development            |   |
| <i>Nov 19-23</i>     | <b>Test 5</b>                                    | <i>Thanksgiving Holiday</i>                     | <i>Thanksgiving Holiday</i>   |
| <i>Nov 26-30</i>     | <b>Ch. 21:</b> Evolution                         | <b>Ch. 22:</b> Species and Speciation           |   |

|                  |                                      |  |  |
|------------------|--------------------------------------|--|--|
| <i>Dec 3-7</i>   | <b>Ch. 23:</b> Evolutionary Patterns | <b>Ch. 24:</b> Human Origins and Evolution |  |
| <i>Dec 10-14</i> | <b>Test 6 (Final)*</b>               |  |  |

Disclaimer: The schedule and assignments as part of this syllabus are tentative and subject to change.

\*Final Exam: The final exam will be administered in the testing center throughout final's week. The final will assess knowledge of Ch. 21-24.