

# Biology A & B

## 2018-2019

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**Office Location:** S7

**Office Hours:** Mon, Tues, Thurs, Fri: 7:45 – 8:25 AM

### Course Description

Biology A & B are designed to familiarize students with a variety of aspects of the living world, and to prepare students for the Oregon state science test in their Junior year. The course emphasizes the development of laboratory skills and the application of content knowledge. It is aligned to the Next Generation Science Standards as adopted by the Oregon Department of Education.

**Subject Area:** Science

**Subject:** Life Sciences

**Room Number:** S7

**Grade Level:** 10, 11

**Credits:** Biology A (1 trimester): 0.5 credit; Biology B (1 trimester): 0.5 credit. Biology A must be completed before beginning Biology B.

### Attendance

- This is a hands-on class with frequent lab and project work; therefore, it's extremely important that you attend class every day. Frequent absences will make it difficult for you to be successful in this course.
- If you've been absent, you're responsible for seeing me within 2 class days upon your return to arrange for make-up work. If you fail to do so, it may be impossible to make up the missed work.
- ***Oregon has one of the shortest school years in the nation. Therefore, it is my professional responsibility to use every single class period to advance student learning. The final exam for this class will be on the last 2 days of the term. Please plan accordingly.***

### Getting Assistance

#### General Assistance

- For make-up work and assistance, my office hours are Monday, Tuesday, Thursday and Friday: 7:45 – 8:25 AM in room S7.

#### Course Blog

- The course blog is an essential resource for students taking this course. Visit the course blog for a daily log of class activities, assignments, due dates, and announcements. Handouts from class are available for download.
- The website is linked on the SHS home page, <http://www.shs.lane.edu/> under "Academics > Class Pages > Science Dept > Landis." Click on the "class website" link below my name/photo.
- Or, go directly to: <http://blogs.4j.lane.edu/landis/category/biology-i/>

#### Grades Online

- Class grades can be viewed at the StudentVue or ParentVue links on the Sheldon High School home page. You will need your 4j username and password. I update grades frequently during the term, so you should always have a good approximation of your current grade.

# Prerequisites and Outcomes

## Prerequisite Courses

- 2 Trimesters of 9<sup>th</sup> Grade Science – 1.0 credit

## Prerequisite Skills and Knowledge

- Ability to read and understand the textbook and laboratory instructions
- Ability to be an active learner during class time
- Students should build upon the information presented in 9<sup>th</sup> Grade Science

## Course Outcomes

- Mastery of Next Generation Science Standards in Life Science – State of Oregon
- Mastery of Essential Ideas, Understandings and Applications/Skills of the IB Standard-level Biology curriculum
- Students will continue to develop Academic Skills: writing, utilizing steps of scientific method, communication conventions of scientists, drawing conclusions from empirical evidence, nature of scientific understanding, laboratory skills
- Students will continue to develop Key Cognitive Strategies: intellectual openness, inquisitiveness, analysis, reasoning>argumentation>proof, interpretation, precision and accuracy, problem solving

## Subsequent Courses

### Sheldon High School:

- Chemistry, Physics

### Higher Education:

- Introductory Biology

# Grading Policies

Students will be graded on their performance level toward the academic course standards only.

## Grading Scale

- 90 - 100% = A; 80 - 89% = B; 70 - 79% = C; 60 - 69% = D; less than 60% = F

## Grading Explanation

- Your grade in this class is based on the following weighted categories: Tests & Quizzes (47%), Lab Reports (25%), Classwork (10%), Projects (10%), Final Exam (8%).

## Grade Changes

- You may earn a change to a grade in this class only in the following manner: If your percent grade in Biology B is sufficiently higher than your percent grade in Biology A, such that the mean of the two grades falls in a higher grade range than the original Biology A percent grade, I will submit a grade change request to the registrar. The student must request the grade change in writing. For example, if a student earns a 78.2% in Biology A and then earns an 81.8% in Biology B, the mean of the two grades would be 80.0%. If the student submits a written request for a grade change, I will request that the registrar change the Biology A grade from a C to a B.
- Please note: the purpose of this policy is to recognize that the path to proficiency in Biology is longer for some students than others. Therefore, you may not average grades if your Biology B grade is lower than your Biology A grade.

## Plagiarism Statement

- In accordance with consistent academic standards recognized throughout the educational and professional community, Sheldon High School considers any form of academic dishonesty unacceptable. Cheating, Plagiarism (intentionally or unwittingly presenting someone else's work as your own), and Collusion (allowing your work to be copied or assisting others with academic dishonesty), are serious offenses and will not be tolerated at Sheldon. Consequences for such behavior will result in any or all of the following: score of a zero, parent conference, disciplinary referral to the Administration. It is strongly advised that students avoid academic fraud at all times to prepare for higher-learning and work environments where fraud of any kind will result in severe consequences.

## Late Assignments

- All late work is due five (5) class periods before the end of the trimester.

## Other

- I will make appropriate accommodations for special needs students (such as those with Individual Education Plans and 504 plans).

## Classroom Conduct

### Study Skills

- Students should expect to spend time outside of the class meeting time to complete lab reports, assigned reading in the course textbook, homework assignments, and to prepare for tests and quizzes.
- While you will not need to work outside of class time every day, you should expect to do so approximately 2-3 times per week.

### Classroom Conduct

- This science course offers the opportunity to explore knowledge through a very hands-on and open approach. As a result, occasionally students experience difficulties demonstrating the skills of an independent learner. You should understand that I regard the classroom/laboratory as a learning environment for Biology, and that the needs of fellow students need to be respected. I expect students to display respect for all people and materials in the classroom, and students can expect respect from me in return. Students who display poor judgment or control will face removal from the classroom. Examples include: horseplay, abuse of materials or equipment, insubordination, excessive socializing.
- Periodically you may be required to work independently on projects for this class. You'll be required to stay in an authorized area and check in with the supervisors at these areas.
- Music players and headphones must be off and out of sight during class time.
- Cell phones may occasionally be used as cameras and for Internet access during certain times specified by the teacher. At all other times cell phones should not be used during the class period.

# Course Outline

## Biology A

- Biochemistry
  - Atoms, bonds
  - Organic macromolecules
  - Enzymes
- The Cell
  - Organelle structure and function
  - Membrane structure and function
  - Transport in and out of cells
- Cell Energetics
  - ATP and energy transfer
  - Photosynthesis
  - Cell respiration
- Cell Division
  - Limits to growth
  - Cell cycle
- Meiosis and Genetics
  - Mendel
  - Meiosis
  - Mendelian and non-Mendelian genetics
- DNA
  - History of the search for life
  - Structure of DNA and RNA
  - Central dogma of Biology
  - Mutation
  - Genetic engineering
  - Genetically modified organisms
  - Stem cells

## Biology B

- Evolution
  - Leading up to Darwin
  - What Darwin said
  - Modern synthesis of Darwin
  - Theory of Evolution by Natural Selection
  - Lines of evidence
  - Earth's History
- Taxonomy
- Ecology
  - Energy transfer
  - Ecological pyramids
  - Population dynamics
  - Biomes and climate
  - Ecosystem dynamics
  - Biodiversity
- Human Physiology
  - Nervous system
  - Circulatory system – if time permits
  - Immune system and disease