

IB Biology A & B

2017-2018

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Office Location: S7

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

Course Description

IB Biology A & B are the first 2 of 5 terms of the IB Biology program at Sheldon High School. They are designed to familiarize students with a variety of aspects of the living world, and to prepare them for IB Biology C and IB Biology II, and for the IB Biology Exam taken in the spring of the student's senior year. The course emphasizes the development of laboratory skills and the application of content knowledge. It is aligned to the Biology standards as set forth by the International Baccalaureate Organization.

Subject Area: Science

Subject: Life Sciences

Room Number: S7

Grade Level: 11

Credits: IB Biology A (1 trimester): 0.5 credit; IB Biology B (1 trimester): 0.5 credit. IB Biology A must be completed before beginning IB 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 9th Grade Science – 1.0 credit
- Chemistry A & B – 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 9th Grade Science & Chemistry A & B

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:

- IB Biology C & IB Biology II

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%).
- In addition to the above categories, "Homework Completion" will be recorded and displayed in StudentVue and ParentVue. The assignments in this category are intended to be opportunities for students to practice with concepts and skills; therefore, this category will not count toward the calculated overall class 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 be used as calculators, cameras and for Internet access during certain times specified by the teacher. They may not be used during tests for any reason. If students cannot resist the urge to become distracted by texting and other non-academic uses of their cell phones, they will lose the privilege of access to their phones during class time.

Course Outline

IB Biology A

- Biochemistry
 - Atoms, bonds
 - Organic macromolecules
 - Enzymes
- The Cell
 - Organelle structure and function
 - Membrane structure and function
 - Transport in and out of cells

Continued →

- 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

IB 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