

Principles of Biology
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Course Description:

_____Biology is a foundational science that studies life in its many, many forms. Spoiler alert: what we call life is really just a bunch of dead things coming together in crazy ways. Life on earth, from our cellular functions to global ecosystems has predictable patterns based on fundamental concepts. In this course you will demonstrate scientific skills such as experimentation, data collection/analysis, and basic investigation using biological concepts such as evolution, energy use, information storage, and life systems. Core tenets of this course include:

Three things to remember:

1. All. Science. Is. Science.
2. YOU have value in science.
3. I want you to do well.....Really.

- *Evidence-based reasoning*: understanding specific topics (like photosynthesis) and broad ones (like forest management) can be explored through the evidence of these phenomena.
- *Cause/effect and structure/function relationships*: every biological trait has a history; structure predicts function at scales big and small.
- *Clear, concise communication*: clear language helps us explore the complexity of biology with confidence; science vocabulary helps us describe the natural world.
- *Collaboration and Perseverance*: modern science is a team sport; it requires patience and revision.

Course Expectations:

I follow a “yes, if” philosophy, but sometimes the “if” just isn’t very practical.

Phones	Computers	Timeliness	Respect	“Who do I contact?”
Communication (some bad examples)	“I don’t know...”	Plagiarism	Citations	Classroom Engagement
Calendar		Safety	Netiquette	

Assessments:

Formative and Summative Assignments • Formatives: take on many forms, and are low-stakes. Proficiency grades for these ARE NOT counted for graduation requirements.. • Summatives: larger tasks that ask you to apply information and show skills. Proficiency grades ARE counted for graduation requirements. • Most assessments are revisable. Summatives are infinitely revisable and retakable with modifications.	Homework Homework is short, formative work meant to practice skills and introduce new material. <i>Some</i> homework is not formally graded, <i>but all</i> homework can be handed in for feedback. Successful students complete and turn in homework assignments and revise work based on feedback.	“What does this look like?” Throughout a unit of study you might do some group work, a lab, some readings, and practice activities - all formative. These will prepare you for summative assessments like creation of a poster, extended lab experiment, or test.
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Questions and Answers:

What will I learn?

Here is a bird's eye view:

- Principles of Evolution and Ecology
- Cell Cycles and Programs
- Protein Synthesis
- Cellular Functions
- Cellular Metabolism
- DNA, Heredity, and Genetics

I know you're thinking...That's nice, but ["What will I learn?"](#).

How will I be graded?

Graded assessments will take many forms. Short and long-term projects, poster presentations, group activities including multi-component lab reports, and traditional tests and quizzes will be used. You will show your learning through writing, drawing, oral communication, graphing, and multimedia representations including models, diagrams and videos.

But really, how will I be "graded"?

You will be evaluated (NE, E, AP, P, PD) on skill proficiencies (required for graduation), content proficiencies, and Habits of Work using formative and summative assessments. Summative assessments are where you will most clearly demonstrate your proficiency, in whole or in part. You will be assessed using a rubric (table) given to you in advance of the due date. Being "proficient" means different things for different skills and standards, so there is no one definition, and very little averaging. For most of the standards, you will have the opportunity to show proficiency multiple times throughout the year, and summatives can be retaken and/or revised if needed at a later date. If you'd like to assess different standards on a given topic, let me know, and I can accommodate.

"I just can't handle all the email!" Here's [a document to help you](#).

"Where is the textbook?"

While textbooks are not always appropriate for every learning need, they are clear explanations of concepts. I do use textbooks for introductions and review of specific concepts, but this is rare. Instead, most readings and audio/visual explanations come from diverse sources that offer an application of the concept to one hot topic such as a news headline or question. If students are looking for a clear explanation of scientific terms, all concepts taught in class are searchable within [OpenStax](#) and the physical textbooks in class. If you would like to borrow a copy of a class textbook, please ask.

Where/How do I find...?

Notes from class.	Google Classroom
HW Assignments	Google Classroom
Quizzes	Google Classroom
Daily Agendas	Google Classroom
Handouts:	Google Classroom or in class

Who do I contact?

You are welcome to contact me for almost any question and I will at least point you in the right direction. Many times, however, you will get a faster or better response by contacting someone besides me. Examples include specific technology questions or questions about Canvas/Classroom. The technology support specialist for your school and/or Canvas support can offer specialized help for these questions.

When can I...?

- Go to the Bathroom/Get something from locker, etc; One at a time; excessive lengths of time will prompt a call to the office and/or guidance.
- Get Water: transitions between activities are great times to do these things. Please let me know you are doing it. The water fountain is literally right outside the door - there is no excuse for dawdling.

"I have a question!"

If you have questions, or need help, PLEASE do not hesitate to ask! [My schedule](#) is posted on my door, and I never mind if you just drop by. You can always email me - I will almost always respond within 24 hrs. If you need extended time for help, we can make special arrangements to work remotely (online).