



Course Syllabus

Franklin High School		2020-2021
DIRECTIONS: For each course, complete the syllabus and share with your evaluating/supervising administrator as a pdf ("File-download-PDF document") by 9/28/20 . Syllabi will be posted on the FHS website under your name for the public to view.		
Course Overview		
NOTE: For core classes, all elements of this section (except for name and contact information) are the same.		
Course Title: NGSS Biology		
Instructor Name: Olivera	Contact Info: colivera@pps.net	
Grade Level(s): 11		
Credit Type: (i.e. "science", "elective") Science	# of credits per semester: .5	
Prerequisites (if applicable):		
General Course Description: Welcome to NGSS Biology. This lab-based course covers the foundational principles of modern life science as outlined in the Next Generation Science Standards (NGSS). We will learn the content and applications of Biology by using science and engineering practices utilized by professionals in STEM fields. Students will work in small teams to complete three major investigations during the course contributing data to ongoing research projects. <ol style="list-style-type: none">1. Students will explore ecosystem health using arthropods as an indicator species.2. Students will investigate natural selection through blue-green algae that live in extreme environments.3. Students will collaborate to engineer a food system, and will measure the changes their choices make in efficiency of food production. Additionally, there will be a focus on how we can utilize the tools of biology to solve problems identified at the local level, from air pollution to climate change, and how those local solutions can contribute to global progress on such issues.		
Prioritized National/State Standards: We will address the NGSS performance expectations for Life Science and some of the performance expectations for Earth and Space Science as well as Engineering and Technology. For a more detailed look at the specific standards, see this short link: http://bit.ly/NGSS_Bio		
Course Details		
<i>Learning Expectations</i>		
Materials/Texts		



Course Content and Schedule:

The following headings provide a thematic overview of the standards for the year.

- 1) Structure and Function
- 2) Inheritance and Variation of Traits
- 3) Matter and Energy in Organisms and Ecosystems
- 4) Interdependent Relationships in Ecosystems
- 5) Natural Selection and Evolution.

Differentiation/accessibility strategies and supports (TAG, ELL, SpEd, other):

- Co teaching with Sped teacher for students pursuing a modified diploma
- Collaboration time with ELL teachers
- Extension options for TAG students
- Optional: District Science Fair, Honors Credit

Safety issues and requirements (if applicable):

Classroom norms and expectations:

Evidence of Course Completion

Assessment of Progress and Achievement:

This class will be graded using a proficiency-based system. A student is proficient in a skill if they can demonstrate, and repeat, a thorough knowledge, understanding, and performance of the skill. The goal is to prepare all students for success in AP classes, required State assessments, college, and careers.

Proficiency will be assessed using 4 criteria, described below. All summative assignments will be categorized into a criterion and assessed based on a rubric for that criterion, available in students' science notebooks after week 2 and on all summative assignments. All scores will be on a 1-4 scale and will be averaged within each criterion to calculate the score. Then, all 4 criteria will be averaged to calculate the final grade. The grading scale information is on the next page.

1. Constructing Explanations and Communicating Scientific Information

At the end of each unit, students should be able to:

- a. explain scientific knowledge and the evidence supporting that scientific knowledge
- b. create or interpret scientific models, and connect the model to the evidence
- c. obtain, analyze and evaluate scientific information

2. Asking Questions and Identifying Problems

At the end of the 11th grade year, students should be able to:

- a. explain a scientific question and the connection between that question and content in class
- b. formulate a testable hypothesis and make predictions using correct scientific reasoning
- c. explain the independent variable, dependent variable, and how to measure each
- d. identify appropriate controls and replication for the experiment in question
- e. explain an engineering problem and the criteria and constraints specific to that problem

3. Analyzing and Interpreting Data and Designing Solutions

At the end of the 11th grade year, students should be able to:

- a. present data in tables, graphs and other relevant forms

- b. explain conclusions based on data through claim, evidence, and using correct scientific reasoning
- c. evaluate whether the criteria and constraints of an engineering design challenge were met by the design proposed
- d. propose novel questions based on the results of an experiment

4. Applications of Science in Society

At the end of the 11th grade year, students should be able to:

- a. explain the ways in which Biology is applied to solve problems and answer questions in the real world
- b. discuss and evaluate the ethics of how Biology is applied to solve problems and answer questions
- c. document the work of others and sources of information used

Your overall semester grade is calculated using the average of the four individual criterion scores. Please note that Synergy/StudentVue will not display a D, such that a grade of 2.0 is passing even if outside of progress reports, it displays as an F.

Progress Reports/Report Cards (what a grade means):

At the end of each semester (January and June), averages convert to letter grades determined by the following:

- A 4.0-3.6
- B 3.5-3.0
- C 2.5-2.9
- D 2.0-2.4
- F < 1.9

Career Related Learning Experience (CRLEs) and Essential Skills:

Communication with Parent/Guardian

What methods are used to communicate curriculum, successes, concerns, etc.?

Synergy, Canvas, email, calls to parent/guardian

Personal Statement and other needed info

I expect that we treat one another with patience and respect. I will do my best to communicate clearly and make the curriculum accessible to each and every one of you.

In return, I ask that you make an effort to be present and focused at synchronous class meetings. In addition, at asynchronous class times, I ask that you access Canvas to see what you are supposed to be doing for our class at that time. If you are unable to do so, email me!

I do not anticipate the need to contact parents/guardians and/or administrators regarding inappropriate behaviors, but I will do so if necessary.

