



## Course Syllabus

Franklin High School		2020-2021
<b>DIRECTIONS:</b> For each course, complete the syllabus and share with your evaluating/supervising administrator <b>as a pdf</b> ("File-download-PDF document") <b>by 9/28/20</b> . Syllabi will be posted on the FHS website under your name for the public to view.		
<b>Course Overview</b>		
<b>NOTE:</b> For core classes, all elements of this section (except for name and contact information) are the same.		
Course Title: Biotechnology		
Instructor Name: Anne McHugh	Contact Info: amchugh1@pps.net	
Grade Level(s): 11, 12		
Credit Type: (i.e. "science", "elective") science or elective	# of credits per semester: 1 (in 2020)	
Prerequisites (if applicable): Completion of or concurrent enrollment in NGSS Chemistry		
<b>General Course Description:</b> This course aims to engage students in authentic career learning through project based learning. Students will work in teams to solve relevant biological problems, exploring social justice and computational thinking throughout the program. Students will leave the course immersed not only with relevant biotechnology technical skills but also with the confidence and context necessary to apply these tools to relevant problems in their own lives and communities. We will explore how climate change is shifting efforts to conserve non-human species on Earth, treating and diagnosis infectious diseases, the frontier of diagnosing and treating genomic conditions, and how biotechnology can help us feed 10 billion people on Earth in 2050.		
<b>Prioritized National/State Standards:</b> NGSS Life Science Standards on Genetics (HS-LS3) and Natural Selection (HS-LS4)		
<b>Course Details</b>		
<i>Learning Expectations</i>		
<b>Materials/Texts:</b> Fatal Invention (Dorothy E. Roberts) and many other excerpts from reputable science reporters, filmmakers, and podcasters over the course of the term.		
<b>Course Content and Schedule:</b> There will be two synchronous and three asynchronous classes throughout the semester on normal, 5 day weeks.  Students will complete short term assignments and longer term projects throughout the course. Students will be expected to participate in synchronous classes and to communicate attendance around asynchronous classes.  There are deadlines posted to help students progress through course materials, and those deadlines are suggestions, understanding that many students are balancing jobs and family responsibilities as well in this moment. There are two key deadlines that are not flexible: Quarter 1 (October 31) and Semester 1 (January 22). All academic evidence for assignments prior to those dates must be submitted prior to the key deadlines to be considered in the gradebook.		



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

This course is a lab science course that is being offered in the comprehensive distance learning moment that we all currently live in. Supports to engage in relevant inquiry and investigations will be prioritized, as will student engagement with current issues (i.e. Climate Change and COVID-19).

Students will have a schedule of relevant assessments, dates and options on how to demonstrate academic evidence. Students will also have supports to collaborate and progress individually throughout the semester.

I will collaborate closely with individual students to modify, accommodate and accelerate learning on assignments as needed.

Students will also have choices on which projects they will pursue, following their own interests and demonstrating career learning through structured, supported projects.

Students will be asked to create final products that are analogous to products created by academics, industry professionals and government officials, aiming to develop skills that will be applicable across fields.

I prepared this class as a year-long in person experience, and that means I always have more ideas for how students can engage with the material. If a student wants a higher level of reading, or a different way to engage with the material, I encourage them to reach out to me and ask for that opportunity.

**Safety issues and requirements (if applicable):**

Students will receive and confirm comprehension of lab safety information if and when it becomes relevant that complies with the NSTA lab safety protocols for Comprehensive Distance Learning.

**Classroom norms and expectations:**

Students collaborated to create classroom norms for each section that align to Franklin STRONG but are specific to the community of each class.

*Evidence of Course Completion***Assessment of Progress and Achievement:**

Students will complete formative and summative assignments. Students will receive feedback on how to progress with their academic work. Students will have opportunities to revise summative assignments.

Students will also have the opportunity to self assess and reflect as well as provide constructive peer feedback. This is an important part of the collaborative peer learning that will take place in the class, and it is oriented to the 21st Century Skills listed below.

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

We are living through three large scale issues that are impacting individual students in their ability to show up, participate, and complete academic work:

1. Climate Change and local forest fire evacuations
2. Global Pandemic of SARS-CoV2 and the economic impact of the response
3. Police Brutality and Protests and BLM and an election

Therefore-- even though the district is requiring letter grades, you will earn an A (credit) or an Incomplete (no credit) for the semester in this class.

Complete at least 70 percent of general classwork for biotechnology  
Examples include: readings, discussions, activities

Complete at least 70 percent of major assignments  
Examples include: projects, labs, presentations

I will provide continuous proficiency based feedback so that students can progress on the many skills required to successfully navigate the STEM fields in the 21st century.

If you have any questions about this policy, I encourage you to reach out and we can have a conversation about it.

**Career Related Learning Experience (CRLEs) and Essential Skills:**

Students will focus on 21st century skills (Innovation and Creativity, Collaboration and Communication, Problem Solving, Initiative and Self-Direction, and Flexibility and Adaptability). In preparing to teach this course, I interviewed 70+ professionals from biomedical and nonbiomedical biotechnology fields, learning about their career journeys and what work product looks like for each individual and how individuals collaborate to solve problems. I will integrate that learning into the student experience and will also connect students virtually with professional mentors whenever possible.

**Communication with Parent/Guardian**

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

Yo hablo Español- Si quiere hablar conmigo en el futuro, por favor, escribeme para una sita.

I email families regular general updates and invite communication as necessary. As the course is primarily an 11th and 12th grade course, I also encourage student ownership of work and leadership in communicating their progress to their families.

I translate all email communications into Spanish.

**Personal Statement and other needed info**

**I have a M.S. in Biology, an M.A.T. in secondary science education, and I am very excited to be teaching your students Biotechnology in this moment, even through comprehensive distance learning.**