

## Biomedical Innovation (BI)

### PLTW Biomedical Pathway - Year 4

#### **Introduction to the Course:**

“In Biomedical Innovation (BI), the final course of the PLTW Biomedical Science sequence, students build on the knowledge and skills gained from previous courses to design innovative solutions for the most pressing health challenges of the 21st century. Students address topics ranging from public health and biomedical engineering to clinical medicine and physiology. They have the opportunity to work on an independent project with a mentor or advisor from a university, medical facility, or research institution.” [www.pltw.org](http://www.pltw.org)

#### **To the Student:**

Welcome to your fourth and final year in the PLTW Biomedical Pathway! As in every other year, the **ultimate goal** of this course and pathway is to **empower you to be a self-driven learner** who can ask probing questions and design new solutions to new and existing problems. At the heart of all PLTW pathways is the development of **key skills: creativity, critical thinking, problem-solving, communication & time management, innovation and flexibility**. In this capstone course you will be applying all these skills and content knowledge you have built the past three years. Every year in PLTW becomes more and more student-driven so most of this year will be based on student decisions on pacing, order, content of selected topics and experimental design. The course is as valuable as you make it. You get out of it what you put into it. We will do everything we can to ensure you will leave us with the ability to face challenges undaunted, embrace failure as an opportunity to grow and above all see yourself as a leader with vision and purpose. For more information about PLTW, visit <https://www.pltw.org/> and our website at [www.erhspltw.com](http://www.erhspltw.com).

#### **Expectations:**

1. Always bring class materials (primarily notebook) and complete unfinished work outside of class
2. Always use class materials properly and for class work only: including computers, probes, and laboratory equipment
3. Personal electronic devices only used appropriately in class (for academic reasons and only when cleared by instructor)
4. Follow guidelines for good online citizenship as outlined in the student handbook (inappropriate posts, etc. online will be addressed accordingly)
5. Equitable collaboration with group members and clear communication with instructor on issues
6. Successful completion of all assigned Activities, Problems, & Projects
7. Regular use Google Classroom for announcements, course materials, note-taking and work submission
8. School Dress Code- (p. 14-15 in school agenda) NO FLIP FLOPS, NO SANDALS or HATS (especially in lab)
9. Follow lab safety guidelines
10. NOTE: Attendance in online classes will NOT be changed to (DLE or Distance Learning Engaged) if a student submits the assignment for that day/class. Students must be present in a class to be marked Present (DLE) and they also must submit assignments on Google Classroom to receive credit for the work for that day/week.
11. No inappropriate/disrespectful/disruptive behavior will be tolerated online.

#### **Course Materials:**

1. 2 Compositions Notebooks & pen/pencil/highlighters
2. Internet Access on a regular, reliable basis to check & submit assignments

**Grading:**

30% **Reading & Writing** (Research)

25% **Assessments** (Formal & Informal)

30% **Inquiry & Collaboration** (Experimental Design)

15% **Organization** (Notebook & Google Drive)

## Virtual Learning Protocols

Platform	Activities
<a href="#">Google Classroom</a> 7n2ef2g	<ul style="list-style-type: none"><li>● <b>Daily Agendas &amp; Materials/Website Links and other resources</b></li><li>● <b>Due Dates &amp; Assignment Submission (<u>turn work in here!</u>)</b></li><li>● <b>Reminders &amp; Specific feedback on work</b></li><li>● <b>Direct Messaging to instructor</b></li></ul>
Google Meet	<ul style="list-style-type: none"><li>● <a href="#">Google Meet</a> or Zoom for in person instruction</li><li>● <a href="#">Office Hours</a> (M-Th 2:10-3:00) and small group work</li><li>● <b>One-on-one tutoring</b></li><li>● <b>Direct communication with instructor</b></li></ul>
School Email	<ul style="list-style-type: none"><li>● <b>Direct communication with instructor</b> <a href="mailto:cstubendorff@erUSD.org">cstubendorff@erUSD.org</a></li></ul>
PLTW Curriculum	<ul style="list-style-type: none"><li>● <a href="#">PLTW Account</a></li><li>● <a href="#">ERHS PLTW website</a> - additional resources/info about our program</li></ul>



## Laboratory Safety and General Protocols

The expectation is that all students and adults in the lab will follow these rules 100% of the time. The purpose of these protocols is the safety and well being of all who work in and around the lab as well as training for future lab work in other classes or industry.

- No consumption of food or drink at laboratory tables or during labs.
- Wear PPE (personal protective equipment) - lab coat, gloves and eye protection when instructed
- Use caution when handling chemicals, bacterial cultures, biohazard materials and any glassware
- Treat all chemicals as potentially hazardous.
- Wash hands both before and after every lab
- Remove and dispose of gloves before leaving lab
- Do not remove any lab-related items or lab coat from the lab/classroom unless instructed to do so
- Keep work area and lab tables clear of clutter and personal items like backpacks at all times.
- Carefully read and follow all laboratory instructions
- Do not leave flames like bunsen burners or alcohol lamps unattended
- Report all spills and/or broken glass to your instructor immediately
- Ask instructor before disposing of any chemicals down the sink
- Dispose of all broken glass, sharp items and chemicals as instructed in proper containers

- Inform your instructor if you have any allergies (ex. Nuts, latex) or have a disability or medical condition that would prohibit you from participating in a lab or would require additional or special assistance.
- During an emergency, leave all lab equipment and personal belongings and evacuate using the closest staircase immediately. Do not use elevators or stop to clean up lab or locate personal belongings or other persons.

I, \_\_\_\_\_ (**student** name) hereby agree to adhere to all the requirements and expectations stated in the course syllabus and lab safety protocol.

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Date

I, \_\_\_\_\_ (**parent** name) hereby agree to support my student in meeting all the requirements and expectations stated in the course syllabus and lab safety protocol.

\_\_\_\_\_  
Parent Signature

\_\_\_\_\_  
Date