



Project Lead The Way Engineering

Woodbridge Senior High School | 2019-20 School Year

Mr. Castro | Mr. DeFelice | Mrs. Hille

Gradebook Set-up and Grading Procedures

On average, grades will be entered on a weekly basis and a score out of 100 percentage points will be awarded for each assignment. To learn more about how we are supporting our students with reporting academic progress, [view this video](#).

Grades will be calculated based upon the following assessment categories:

50% - Quizzes/Projects: These assessments are a way for students to demonstrate that they have mastered learning target(s) that have been addressed during a unit of study. This type of assessment could occur during a unit or at the end of a unit. These assessments are often *high stakes*, which means that they have a high point value.

40% - Activities: These assessments is to *monitor student learning* to provide ongoing feedback towards a learning target that can be used by instructors to improve their teaching and by students to improve their learning.

10% - Essential Questions / Progress Checks: The goal of these assessments is to *monitor student learning* to provide ongoing feedback towards a learning target that can be used by instructors to improve their teaching and by students to improve their learning. These assessments are generally *low stakes*, which means that they have low or no point value.

The Prince William County Public Schools' grading scale will be used and is as follows:

A = 90-100%	C+ = 77-79%	D = 60-66%
B+ = 87-89%	C = 70-76%	F = 59% and below
B = 80-86%	D+ = 67-69%	

Multiple Opportunities to Demonstrate Mastery

Students will be allowed to reassess quizzes. In order to do so, students must demonstrate that they have prepared for the reassessment by ensuring that they have submitted all related activities and skill practices associated with the quiz. In addition, the instructor may assign additional practice opportunities that they feel would better prepare the student for the reassessment.

Late Work Policy

Late work will be accepted up to two weeks past the assigned due date published in ParentVUE and Google Classroom. In the event that the dates are not consistent, the later date will be used to determine

late work. Students will be given one week after the assignment is graded to re-submit the assignment if they wish to improve their grade but only if the original assignment was submitted on time. This policy applies only to activities and skills practices and not quizzes or projects.

Projects are a large summative assessment, comparable to a large unit test. As such, it is not possible to turn in projects late. Students will be given explicit timelines and guidelines for submission of such projects and must submit them on time.

Attendance

Students who miss 10 or more classes, excused or unexcused, are at risk of failing and will be placed on No Credit Status.

PLTW End-of-Course Assessment (EoC)

All students will take the summative End of Course Assessment as prescribed by Project Lead the Way regardless of their yearlong grade in the class. It will count as a summative grade for the fourth quarter and cannot be reassessed.

Electronic Devices

All electronic devices are to be put away once entering the classroom. They are not to be in use during lessons, class discussions, quizzes, or tests. When devices are allowed to be used, they must be used for productive classwork, i.e. scanning, research, Google Classroom, or quietly working with headphones.

Google Classroom

Google Classroom will be used as an extension of the classroom. Announcements will be regularly be updated for current unit of study and assessments dates. Assignments can be found here as well and a link to the notes on mypltw.org. Parents with a connected email can get regular email updates about their students. Students should be checking here regularly, especially when they are absent.

Suggested Material

To be organized and successful in this class, it is suggested that you have the following materials: An engineering notebook (graph ruled and bound--cannot be removed and replaced easily), pencils with an eraser, and colored pens/pencils.

Assessment Policy

If a student is absent for a quiz or test, then the student will complete the assessment in-class on the first day the student returns. It is the student's responsibility to make up the work and/or notes missed in class while absent and while taking the quiz. Assessment days will not change due to a student's absence.

Communication

Email is the preferred method of communication for general student questions and parent questions. If any questions arise, please feel free to send an email. The email will be addressed within 24 hours of receipt. Students with questions on a specific assignment should use the comment section of that assignment on google classroom.

Extra help

Teachers are available for extra help during flex periods or after school by appointment. Please contact your teacher directly via email or set up an appointment in class. If you are seeing a teacher for extra help, make sure you come with specific questions and concerns and bring all of the required materials.



Project Lead the Way Engineering Design & Development (EDD) 2019 – 2020

Mr. DeFelice

Room 1208

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Twitter: @DeFelice_WSHS

Woodbridge Website: <http://woodbridgehs.pwcs.edu/>

Project Lead the Way: <http://mypltw.org/>

Learning Management System: Google Classroom

Final Presentation Date: May 28, 2020

Objectives:

“Don’t you hate it when...” is a common statement made by people that are constantly thinking of ways to improve products or situations. Engineering Design and Development (EDD) is the course that allows you to design a solution to a technical problem of your choosing. Now is your chance to eliminate one of the “Don’t you hate it when...” statements of the world.

This course is an engineering research course in which you will work in teams to research, design, and construct a solution to an open-ended engineering problem. The product development lifecycle and a design process will be used to guide and help your team reach a solution to the problem. You and your team will present and defend your solution to a panel of outside reviewers at the end of the school year. Engineering Design and Development serves as the capstone course within the Project Lead The Way course sequence and allows you to apply all the skills and knowledge learned in the previous Project Lead the Way courses that you have taken during your high school career.

Inventor, which is a state of the art 3-D design software package from AutoDesk, will help you design solutions to the problem you and your team have chosen. This course will also test your time management and team working skills which are a valuable asset to you in the future.

Competencies:

The competencies that will be covered this year can be accessed at the following website:
<http://www.cteresource.org/verso/courses/8439/introduction-to-engineering-design-pltw-tasklist>

Learning Management System:

As a part of the effort to provide content and support materials, this class will use two online resources called “Learning Management Systems” or LMS for short. The PLTW LMS includes course notes, PowerPoints, reference documents, and other resources. This is essentially an interactive online textbook. You will be required to log into this website frequently inside and outside of class. Google classroom will include assignments, schedules, due dates, quizzes, discussion board posts, and other resources. You will also be required to submit your work via Google classroom. It is imperative that you log into your Google account frequently to check for class updates and to submit assignments. I will update the site often in an effort to keep students and parents up to date in all the class happenings. Parents and students are encouraged to visit the site regularly to stay informed.



Google Classroom



Required Materials:

Each student will be expected to purchase the following items that will be used every day in class.

- ✓ Engineering notebook (must be graph ruled and bound)
- ✓ Pencils (class notes and sketches)
- ✓ Pens (documentation in engineering notebook)
- ✓ Flash drive (4 GB minimum—document storage)

Students are responsible for keeping course documents, notes, projects, assignments, quizzes, and tests in their engineering notebooks and on their flash drives. Engineering notebooks can be stored safely in class and will be graded often. Flash drives should not be stored in class. It is highly recommended that a backup of your flash drive be created and updated throughout the year (monthly at a minimum). Loss of files is not an excuse for not submitting an assignment or submitting late. If you choose to take your engineering notebook or flash drive home they MUST return the next class period!

Student Requirements:

Students will be required to have these materials and will be required to follow Prince William County School policies regarding student behavior. Computers will be used to complete projects and assignments. If the computers are abused or software is used for anything other than course related material, students will be given alternate assignments and disciplined accordingly.

Classroom Rules:

1. When the instructor speaks, you are silent and you are listening.
2. Follow and abide by all rules and computer procedures outlined in the Prince William County Student Code of Behavior.
3. Follow the classroom routines.
4. Be prepared for class at all times. Have your materials ready for each class.
5. Act in a professional manner at all times. No profanity, no gum, no food or drinks.
6. Be respectful to all people, their belongings, and their projects at all times.

Contacting and Meeting with Mr. DeFelice:

Block	Class	Room
1	Construction Technology	1419
2	Civil Engineering and Architecture (CEA)	1208
3	Introduction to Engineering Design (IED)	1208
4	Engineering Design and Development (EDD) Online (Potomac HS)	1208
5	Civil Engineering and Architecture (CEA)	1208
6	Engineering Design and Development (EDD)	1208
7	Planning	-

If you have any questions, concerns, or special needs, please do not hesitate to contact me via email or phone. I will be available before and after school for any possible meetings. My door is always open and I check my e-mail frequently. Let's have a GREAT year!

Engineering Design & Development (PLTW)

Learning Targets

Component 1: Researching a Problem

- 1.1. I can become an expert on the identified problem.
- 1.2. I can distinguish between credible and non-credible sources and use APA citation style while conducting research.
- 1.3. I can develop a clear, complete, and concise problem statement.
- 1.4. I can document research that validates and justifies problem academically, ethically, or through market research.
- 1.5. I can employ a Gantt chart for project planning purposes.
- 1.6. I can evaluate the market to determine whether solving the problem is compelling to other entities.
- 1.7. I can identify the target market for a potential solution to an identified problem and create, execute, and evaluate a market research plan to gather data related to an identified problem.
- 1.8. I can disclose and appraise all current and past solution attempts available as commercial products or patents.
- 1.9. I can document and summarize a patent search.
- 1.10. I can communicate professionally with experts and mentors on a specific topic.
- 1.11. I can record and organize correspondence with experts and mentors.
- 1.12. I can create a Project Proposal document and/or presentation to summarize important research in order to justify moving forward with a chosen problem.

Component 2: Designing a Solution

- 2.1. I can identify and describe specific criteria for and constraints to the design of a product.
- 2.2. I can write a clear, complete, and concise design specification.
- 2.3. I can generate and document multiple potential solutions to a problem.
- 2.4. I can develop a decision matrix to compare and rank potential solutions.
- 2.5. I can distinguish between practical and potentially successful design solutions and solutions that are not practical or potentially successful.
- 2.6. I can sketch and annotate ideas and details while designing a prototype.
- 2.7. I can combine, refine, and optimize conceptual ideas to effectively solve a problem.
- 2.8. I can describe a Product Lifecycle Assessment and how it impacts design.
- 2.9. I can identify math and science concepts that will be or could be utilized in the process of solving an identified problem.
- 2.10. I can use scientific, mathematical, and engineering concepts to design a prototype.
- 2.11. I can communicate design concepts using visual and written documentation.
- 2.12. I can evaluate other teams' conceptual solutions and make recommendations.

- 2.13. I can evaluate feedback from reviewers and modify design concepts as appropriate.
- 2.14. I can collaborate with teammates to select a solution path to pursue.
- 2.15. I can assess my product design based on a variety of design factors and implement design changes to improve my product.
- 2.16. I can identify subsystems of a prototype design.
- 2.17. I can create virtual designs of a prototype.
- 2.18. I can create a set of working drawings to document my proposed product design.
- 2.19. I can perform a peer design review to evaluate my product design in an effort to identify and correct potential mistakes and flaws in my design.
- 2.20. I can perform a cost estimate to build a prototype of my proposed product.
- 2.21. I can compare the positive and negative consequences of my product design to determine the ethical implications of product development.
- 2.22. I can evaluate choices of materials and fastening procedures for a prototype design.
- 2.23. I can determine and document resource needs, including a bill of materials, tools, equipment, and knowledge required to build a prototype.
- 2.24. I can communicate professionally with experts and mentors to obtain feedback on the technical feasibility of my product design, document the interactions, and implement recommended changes to my product design.
- 2.25. I can create a document to present my proposed design and provide justification for further development of a product.

Component 3: Creating a Prototype and Testing Plan

- 3.1. I can document project progress in an engineering notebook.
- 3.2. I can create a step-by-step plan for building a prototype.
- 3.3. I can devise a list of testing criteria that will be used to evaluate the prototype and determine the success or failure of the design solution.
- 3.4. I can prepare a description of the testing method that will be used to validate and verify the design solution.
- 3.5. I can construct a testable prototype.
- 3.6. I can select and describe a valid testing method that will be used to accurately evaluate the effectiveness of my design solution in solving the problem.
- 3.7. I can create a valid justification for the selected testing method.
- 3.8. I can design and implement a prototype testing procedure and data collection plan.
- 3.9. I can identify opportunities to incrementally test a prototype.
- 3.10. I can conduct testing of my prototype.
- 3.11. I can identify, define, and implement necessary modifications to testing methods based on expert feedback and ongoing research.
- 3.12. I can design and participate in a critical design review to evaluate my prototype and determine how my project will proceed to identify, define, and implement necessary modifications to my design based upon my test results.

Component 4: Evaluation and Reflection on the Design Process

- 4.1. I can interpret test results.
- 4.2. I can contact stakeholders and experts directly related to this project and problem.
- 4.3. I can gather feedback from stakeholders and experts related to your conclusion and testing analysis.
- 4.4. I can provide designer feedback on next steps if time permits, or if you were to start over from a different point in the design process.

Component 5: Presentation of the Design Process

- 5.1. I can gather data and information compiled throughout the project and create a project portfolio and presentation of my design solution.
- 5.2. I can identify appropriate techniques for delivering formal presentations.
- 5.3. I can orally present an effective technical presentation on the chosen design solution.

Take a photo of this portion and upload to Google Classroom!

- We have read and understood Mr. DeFelice's PLTW Engineering Design & Development syllabus and classroom expectations and will work together to make this a successful and exciting year.
- We understand that our student will be issued lab supplies and tools to perform many of the hands on assignments and that it will be his/her responsibility to treat all materials with proper respect.
- We understand that students may be asked to find and/or purchase materials to bring in to use with their projects and that every effort will be made to minimize the cost and impact to the student.
- We understand that our student will need to be ready to start participating in the class by the second meeting of the class. As such he/she will need to have the materials outlined in class.
- We understand that safety is of primary importance and expect our student to respect and comply with Mr. DeFelice's instructions.
- We understand that cell phones and other personal devices will be allowed if they are used to scan images from an engineering notebooks and to take pictures of projects to incorporate in assignments to submit for grading. There will be no use of such devices during lecture times.

I certify that I have read and understand the information stated above and I will direct any questions I have to Mr. DeFelice.

Student signature	Print name	Block
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Parent/Guardian signature	Print name	Date
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Parent/Guardian email	Daytime phone	Evening phone
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Welcome to another great year at Woodbridge Senior High School!