

Fox Valley Lutheran High School Engineering Design & Development

General Course Information

Title: Engineering Design and Development (EDD)

Department: Practical and Professional Arts: Technology and Engineering

Year: 2019-20

Credits: 1.0

Length: Year

Meeting schedule: Period 4, Room 2225 (STEM Lab)

Instructor Information

Name: Nathan Nolte

Office location: 2225A (STEM Lab)

Office hours: 1st Semester: 1, 2, 3, 5; 2nd Semester: 1, 2, 3, 6

Email: nnolte@fvlhs.org

General Course Information

Course Description

This is an engineering research course in which students will work in teams to research, design, test, and construct a solution to an open-ended engineering problems. Students will present and defend their solution to a panel of outside reviewers at the conclusion of the course. The EDD course allows students to apply all the skills and knowledge learned in previous Project Lead the Way courses.

Pre-requisites

Seniors that have completed at least 2 other STEM courses.

Curricular Goals for Engineering Design and Development

Engineering Design and Development (EDD) gives students an opportunity to exercise the skills they have developed not only in their PLTW classes, but in other classes and in their personal experiences in general. Students will work in teams to solve a problem of their choosing. EDD is not focused on producing a marketable process or product, though this can and does happen using the design process. EDD is not intended to be an “invention class” or a “patent generating class” but rather a class that centers on using, documenting, and working through the engineering design process to address a problem. The end result should always be driven by the process rather than an individual or team’s skill sets, opinions, or personal preferences. Because the focus is on the problem and using the design process, the topic choices for students are infinite.

EDD is about the journey of seeking a well-justified original solution to a real-world problem. No one will know the solution outcome at the beginning of the journey, but all groups will move through the problem solving process and gain skills they will be able to implement in any profession for the rest of their lives.

Because EDD is less structured than most other courses, students must take more responsibility in their learning than they are accustomed to or are comfortable with taking. However, more responsibility should translate to more ownership and more reward.

Resources for Engineering Design and Development

Project Lead The Way Curriculum through my.pltw.org

Assignments and Assessments

Course assignments and assessments will fall into several categories:

- Engineering Notebook
- Project Portfolio
- Team Evaluations

Core assessments:

The team project is the main project of the course and students cannot get credit without completing the project.

Grading Scale and Policy

FVL Grading scale:

Min Percent	Max Percent	Grade	GP*
93.33	100.00	A	4.000
90.00	93.32	A-	3.667
86.67	89.99	B+	3.333
83.33	86.66	B	3.000
80.00	83.32	B-	2.667
76.67	79.99	C+	2.333
73.33	76.66	C	2.000
70.00	73.32	C-	1.667
66.67	69.99	D+	1.333
63.33	66.66	D	1.000
60.00	63.32	D-	0.667
0.00	59.99	F	0.000

*Courses designated as "Honors" will received a +0.334 GP boost to reflect the rigor of the class. However, the resulting GP will not exceed 4.000.

Grading policy:

Assignments, projects and assessments are given point values based on their complexity and significance in the course. Most projects and assignments can be re-done to increase the points earned. If a project or assignment is re-done the student must email the instructor and ask it to be re-evaluated.

Class participation and grading procedures:

Students are expected to be on time and prepared for all class periods, including having all materials necessary for class.

All students will be expected to participate fully during class discussions. The best way to learn is to become part of the conversation.

Homework Overview and Expectations:

Since this course is a project-based course involving working in teams, the majority of the work is done in class. Ample time is given for students to complete projects in class, but if students have excessive absences or do not complete projects during class, they will be required to find additional time to come into the lab to complete projects (study halls, before or after school, etc.). Occasionally extra work will be required outside of class, but this is minimal.

Access to Course Grades:

Students may access all course grades attendance records through the FVL Skyward Family/Student Access Portal. Any disputes regarding student records should be communicated with the classroom teacher as soon as possible, and may be appealed to the Curriculum Director and Coordinating Council if necessary.

Incomplete or Late Work

For work that is incomplete due to illness or another unplanned absence:

- The due date will be extended one school day (minimum) for each day absent.
- The teacher will coordinate make-up dates for quizzes/tests with the student upon return to school.
- Work still incomplete past the revised deadline will be designated as late.

Students who miss an assignment deadline or an in-class assessment due to a pre-planned absence should make arrangements with the instructor prior to the absence to complete the task in a timely fashion. Where possible, those arrangements will be noted in the Skyward gradebook comment field for the particular assignment.

An assignment will be considered late if it is not satisfactorily completed by the beginning of class the day it is due.

For work that is late:

- The teacher will maintain a record of late work using the Skyward gradebook comment field for the particular assignment.
- A 0% will be entered into the gradebook until the assignment is satisfactorily complete.
- The maximum grade attainable for the assignment will be lowered by 10% per school day the work is late (minimum grade remains at 50% once satisfactorily complete).
- Core assessments that remain late will result in an Incomplete at the next marking period.
- Repeated offenses may result in placement into the Fox Success program.

Classroom Conduct

As in all things, students are expected to use their talents and abilities to their fullest and to God's glory. Students are expected to support a classroom atmosphere conducive for learning at all times. Disruptive behavior may result in removal from the classroom and/or a detention.

Academic Misconduct

FVL expects all students will honor the principles of honesty and truth as taught in God's Word. This means that all academic work will be done by the student to whom it was assigned without unauthorized aid of any kind. Research sources (print or Internet) must be cited fully and accurately. The school reserves the right to use academic screening companies to check for the authenticity of student work. Refer to the FVL Student Planner for additional guidelines concerning penalties for cheating.

Attendance

Students are expected to attend all scheduled classes in accordance with the school attendance policy as outlined in the FVL Student Planner. In the event of an absence, it is the responsibility of the student to follow all necessary steps as outlined in the planner.

Tardiness

Students are to be in the classroom at or before the start of the period. When a student is tardy for class, the student should knock on the classroom door and wait until the teacher comes to the door. Upon entry, the student should give his/her excuse to the teacher and quietly take a seat. The instructor WILL notify the student if he/she has been marked tardy.

Mobile Device Usage

Students are expected to have mobile devices turned off and put away during class unless permission has been given to use them during work time.

Instructional Support for the Individual Student

If at any time a student needs additional support they should feel free to reach out to the teacher and ask for assistance.

Accommodations for Students with Disabilities

Accommodations are available upon request for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please contact your guidance counselor. All accommodations MUST be approved by the FVL Coordinating Council.