



PLTW Capstone Course Description

Engineering Design and Development (EDD) is an engineering research course in which students will work in teams to research, design, test and construct solutions to open-ended engineering problems. The EDD course allows students to apply all the skills and knowledge learned in previous Project Lead the Way courses.

PROJECTS

- Robotics Challenge
- FANUC Certification
- Engineering Design Problem(s)

EDD Expectations

Project Lead the Way's Pathway to Engineering program is a pre-professional program. Participants in this program will be held to the highest academic and behavior standards.

Academic expectations include:

- Preparing for class and having all required materials on hand
- Completing activities and meeting project deadlines
- Working cooperatively with others

Behavior expectations include:

- Being punctual for all class meeting times
- Maintaining a clean and **SAFE** working environment
- Speaking respectfully to others
- Using all equipment **SAFELY** and for its intended purpose only

Deadlines and Late Work:

- Meeting project due dates will be critical to your success in this course and as a professional
- Communication is crucial if you are struggling to meet deadlines
- Absolutely no extensions will be given unless communicating with your instructor **BEFORE** the due dates

Regular attendance will be critical for your success in the Pathway to Engineering program. In case of absence, course participants must contact the instructor at Christine.carlson@k12.sd.us to schedule a time to discuss make-up work. Please do not expect to use class time to discuss or complete missed work.

Note: Participants with unexcused absences may not be given the opportunity to make up group activities and/or group projects.

Classes missed because of attendance at a home school sponsored trip or activity will be an excused absence at the CTE Academy. However, the student will be required to make up work missed.

Schoolwork missed because of excused absences must be made up within two times the number of days absent not to exceed six days.

Course Grade

Your performance in the Engineering Design and Development course will consist of the following components:

Professionalism = 30%

- Responsible use of equipment / lab time / classroom time
- Maintaining a respectful and positive attitude w/ classmates and teachers
- Contributing to class discussions, activities, projects – beyond a bare minimum level
- Working independently

Documentation = 20%

- Engineering Notebook, Innovation Portal, 3-ring Binder
- Demonstrating evidence of ALL steps in the Design Process

Project Solution = 50%

EDD Tips for Success

Work like a professional

- You will be working closely with a team. Act professionally at all times. When you agree to do something, do it on time and do it well. Play nice.

Know your topic

- Learn as much as you can.
- Seek and ask for help.
- You will need to seek more expertise than your instructor can provide. Look for experts and do research to be sure that you have sufficient and accurate information as you work toward solving a problem.

Project Schedule

- Attempt to adhere to your project schedule in order to successfully complete all phases of the design process.
- Continuously adjust your project schedule to reflect your work progress and appropriately allocate the time remaining.

Organization

- This course will teach you a lot about project management. You will acquire many skills that will benefit you for the rest of your life. Most students who experience stress in EDD discover the root of the problem is a lack of organization. When your team is organized, everyone is more likely to be prepared for bumps in the road. Being organized means that you have a plan and you always know the next step in the process.
- For this course you will need to have a few tools to stay organized.

Engineering Notebook – This is used to capture original ideas, reflections, modifications, etc., basically anything related to the design thought process.

3-Ring Binder – Your binder should collect all of your class work, notes, and other related material. Be sure this stays organized so you will be able to access what you need.

Documentation

- Keep accurate records of everything you do and create – both written and with pictures. Keep records of your thoughts, self-assessments, research, conversations, correspondence, sketches, timelines, etc. Anything that has anything to do with your project should be documented.