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Take charge of your future with the successful completion of a CTE track in Technology.

Some technology courses are offered every other year, please check the descriptions to see if your favorite course is available next year.

The Career Path Road Map

Trade/CTE (Hands on Focus)

Courses marked with an * are not offered for 2019-2020

- Drawing and Design for Production (Tech or Engineering)
- Home Repair and Maintenance I - ½ year
- Home Repair and Maintenance II – ½ year
- *Construction Systems – ½ year
- *Manufacturing Systems – ½ year
- Design and Fabrication Lab – ½ year
- Basic Electricity and Electronics – ½ year
- Transportation Systems – ½ year
- Architectural Drafting – ½ year
- 3D Architectural Design – ½ year

Trade/CTE (Computer Focus)

Courses marked with an * are not offered for 2019-2020

- Drawing and Design for Production (Tech or Engineering)
- Computer Graphics - ½ year
- Computer Animation – ½ year
- *Media Productions
- CG3 Animation Studio
- Computer Science Engineering (Honors)
- Basic Electricity and Electronics – ½ year
- Architectural Drafting – ½ year
- 3D Architectural Design – ½ year
- Communication Systems – ½ year

Project Lead the Way (Honors)



- Gr 09: Drawing and Design for Production (DDP)
- Gr 10: Principles of Engineering (POE)
- Gr 10: AP Computer Science Principles (APCSP)
- Gr 11: Digital Electronics (DE)
- Gr 11: Computer Integrated Manufacturing (CIM)
- Gr 12: Design and Prototyping Lab (DPL) *New ½ year
- Gr 12: Engineering Design and Development

Manufacturing & Skilled Trades Academy



- Gr 10: Trade Apprentice Survey
- Gr 10: Trade Apprentice Tech
- Gr 11: Trade Journeyman Survey
- Gr 11: Trade Journeyman Tech
- Gr 11: Manufacturing Trades
- Gr 11: Print Trades
- Gr 12: Trades Senior Project 1
- Gr 12: Trades Senior Project 2



Trade / CTE Technology - Course Descriptions

Design and Prototyping Lab

NEW FOR 2019-2020

9113 Grades 11,12

½ credit

All Trades and engineering students will benefit greatly from this class.

Fabrication Studio is a hands-on experience in designing and manufacturing a product. Students will work as a team to design a product and organize all of the production needs from materials needed to processing tools and machines. Students may be exposed to cutting edge production methods like CNC Machining, Laser Cutting, and 3D Printing.

Home Repair and Maintenance I

9115 (Fall) Grades 9, 10, 11, 12

½ credit

Learn how construction is done. A variety of hand and power tools will be used to complete laboratory activities. The student will also have an opportunity to become familiar with the various materials and fasteners used in home repair and maintenance. Various systems in the home will also be studied: heating, water, electrical, security, sound, etc. Student can develop entry-level skills for future employment in the construction industry.

Home Repair and Maintenance II

9225 (Spring) Grades 9, 10, 11, 12

½ credit

This is a hands-on course covering residential structures. Students will learn basics in carpentry, masonry, plumbing and electrical skills used to build a residential structure. Maintenance and repair of various systems will be stressed. Local building codes and new materials will be investigated. Student can develop entry-level skills for future employment in the construction industry.

Basic Electricity / Electronics

9110 Grades 9, 10, 11, 12

½ credit

This course is designed to introduce students to the elements of electricity and electronics. This course offers a hands on experience in building various projects, house wiring, and Basic Electricity/Electronics using circuit boards. This offers an overview of the largest growing field today.

Transportation Systems

9123 (Fall and Spring) Grades 9, 10, 11, 12

½ credit

This course will provide an opportunity to explore the various methods used to move people and goods. Systems and careers in the transportation industry will be discussed. Students will build a variety of land, aerospace and marine vehicles. (CO₂ cars, rockets and/or boats).



Architectural Drafting and Design

9177 Fall Grades 9, 10, 11, 12

½ credit

This course will introduce students to the basic elements of the Architectural profession and the work of an Architect. Students will be introduced to drafting Architectural plans, such as site plans, floor plans, front elevations, and foundation plans. We will also focus on construction techniques and terminology used to create a building and standards used in the industry. Architectural Drafting & Design is a project-based course that involves drawing and model building. This course prepares students for college courses in the areas of architecture, interior design, structural/civil engineering, and drafting. Visit: <http://www.lancasterschools.org/Mr.Streit> for more info!

3D Architectural Design

9174 Spring Grades 9, 10, 11, 12

½ credit

★ Recommendation: Architectural Drafting

This course will build upon the basic elements learned in Architectural Drafting by introducing cutting edge 3-Dimensional software that will be used to create Architectural structures. Students will produce computer-generated drawing sheets that contain items such as floor plans, elevations, schedules, and 3D realistic renderings. We will utilize *Autodesk Revit* software. Visit: <http://www.lancasterschools.org/Mr.Streit> for more info!

Computer Graphics

9127 Fall Grades 9, 10, 11, 12

½ credit

Interested in creating images for a game or internet site? This course is your starting place! Learn the CGI basics of Adobe Photoshop and Illustrator while getting hands on experience using scanner applications, image correction, and illustration layout. Students will use a variety of Adobe software programs to develop layouts which are used in the CGI industry today.

Computer Animation

9128 Spring Grades 9, 10, 11, 12

½ credit

Make your images move! The basics of cell frame animation, movement in a 3-D space, adding sound to a project, recording and editing your own audio will be taught. Use your Multi-media projects for a college application, or you can use your new knowledge to create great presentations for your other classes. Adobe Photoshop, Adobe After Effects, Audacity, Adobe Audition and other CGI industry standard programs will be used.

CG3 (Computer Graphics III): Animation Studio

9150 Spring Grades 10, 11, 12

1 credit

⊗ Required: Computer Graphics I and II or teacher permission

Animation Studio continues the animation techniques first learned in Computer Graphics 2. This advanced class will develop and publish of various projects using the Multi-Media lab and will concentrate on 3-D effects, and basic animation styles in Adobe Photoshop and more advanced techniques using Adobe After Effects and Adobe Flash.



Design and Drawing for Production (DDP) – Tech (3D Modeling Approach)

9175 Spring Grades 9, 10, 11, 12

1 credit

★ Course will satisfy the 1 unit of Regents credit for Art/Music

► Upon successful completion of Tech DDP (this course), an interested and competent student, with the instructor’s permission, may apply for the Project Lead the Way Academy.

An introductory course, focusing on utilizing the design process to solve technical problems with 2 dimensional drawing techniques and 3 dimensional modeling capabilities. DDP Tech has been designed to replace the traditional CAD class, and offers the skills developed in the Engineering DDP course for students interested in 3-D modeling, but not necessarily in the pre-engineering program (PLTW)