



# LANCASTER TRADES ACADEMY

## PROGRAM GUIDE

**2024-2025**



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## Manufacturing & Construction Skilled Trades Academy – Highlights

### Overview

The Lancaster Manufacturing & Construction Skilled Trades Academy is designed for students who are interested in exploring careers in the Manufacturing & Construction industries. During the three-year curriculum, classes will visit local facilities, host various professionals, and discuss current trends in Manufacturing & Construction.

Students in the Skilled Trades Academy will complete a series of courses designed to offer practical experiences. The focus will be on acquiring both the soft skills as well as technical skills for entry-level employment in the manufacturing and construction fields.

The Manufacturing and Skilled Trades Academy (MSTA) realizes not every student wants to go to college. There are students that want to enter the workforce and begin their careers, or they may still want to go to college but may not be prepared, or can afford, that educational rigor and cost. The MSTA is here to help prepare them for that reality by giving them the rudimentary skills to succeed in both.

### Manufacturing and Skilled Trades Mission

The mission of the Lancaster High School Manufacturing and Skilled Trades Academy is to develop the student's skills and talents to be successful in the manufacturing and/or trades industries while creating active, productive citizens.

To be more specific the MSTA is being created to:

- prepare students for the realities of the “outside” world be it college or the workforce.
- prepare students for the manufacturing and trades jobs of today and tomorrow.

► **Please Note:** You do not have to be a member of the Trades Academy to take Academy classes, however without taking five courses in Technology you may not qualify for an Advanced Regents diploma. Please talk to your counselor.



## **Manufacturing & Construction Skilled Trades - Course Descriptions**

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### **Trade Apprentice                      1 Credit**

#### **9103 Grade 10 Semester 1**

**½ credit**

A foundation class for the Trades Academy: This Apprentice course introduces the concepts and terminology of site planning, foundation elements, wall and ceiling structure, roofing styles, through various projects. This class introduces pattern development for sheet metal work; students will then create various sheet metal projects using industry standard tools.

*\*Skills Covered:* Various Materials Processing, Sheet Metal Fabrication, Basic Construction Concepts

*\*\*Sheet metal projects have included trays, cell phone holder, wall hanging shelf*

#### **9101 Grade 10 Semester 2**

**½ credit**

A foundation class for the Trades Academy: This Apprentice course is a survey course that introduces the hands-on skills for a career in trades using carpentry tools, planning, implementing and execution of a project, and beginning concepts of manufacturing. Students will create various projects using industry standards.

*\*Skills Covered:* Various Materials Processing, Manufacturing Concepts

*\*\* Example project: students each create individual coat rack*

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### **Trade Journeyman                      1 Credit**

#### **9104 Grade 11 Semester 1**

**½ credit**

Journeyman explores the manufacturing process used in the creating and development of products, either for commercial or industrial use. These concepts are further developed in the CNC Machining & Manufacturing class. The students will also learn about plumbing concepts for both residential and commercial buildings. Projects in both copper and PVC pipe are explored.

*\*Skills Covered:* Various Materials Processing, Plumbing, Architectural Concepts

*\*\*Example projects have included PVC toys for the Lancaster Youth Board, copper sprinkler, copper candle holder*

#### **9102 Grade 11 Semester 2**

**½ credit**

This is a course that explores the manufacturing process more in depth from design to production. Students further their manufacturing skills integrating the design of products with moving parts.

*\*Skills Covered:* Various Materials Processing, Manufacturing Concepts, Project Management

*\*\* Example project: students each create folding step stool*

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### **Trades: Construction Drawings & Modeling**

#### **9106 Grade 11**

**½ credit**

Construction Drawings & Modeling is a course that focuses on understanding drawings related to architecture and building trades, such as plumbing, electrical, and mechanical (MEP). Students will learn plan symbols, review sets of plans of Lancaster High School, and build scale models. They will work in teams and utilize tools, materials, and resources related to the trades.

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### **Trades: Advanced Manufacturing**

#### **9105 Grade 11**

**½ credit**

Manufactured items are part of everyday life, yet most students have not been introduced to the high-tech, innovative nature of modern manufacturing. This course illuminates the opportunities to understand manufacturing and puts the students in a position to utilize modern manufacturing processes to create projects. Students will be introduced to technologies such as Injection molding, laser cutting, 3D rapid prototyping, and CNC machining.



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**Trades: Senior Project.....1 Credit****9107 Grade 12 Semester 1*****½ credit***

In the senior level coursework, the personal management skills needed to gain employment or be successful in college are discussed. Topics include entrepreneurship, lifestyle choices and financial management. In addition, the class will design, develop, and build projects using concrete and metal. Students will practice welding skills and concepts in masonry.

\*Skills Covered: Welding, Masonry

\*\*Example projects have included a concrete table with welded legs, a concrete tabletop fire pit

**9108 Grade 12 Semester 2*****½ credit***

In the senior level coursework, the personal management skills needed to gain employment or be successful in college are discussed specifically concentrating on the soft skills needed to work individually or as a team member. In addition, the class will design, develop, and build projects to meet a personal or community need. Projects are designed around group work and are more complex in design and production and intended to simulate the manufacturing environment.

\* Skills Covered: Advanced Materials Processing, Project Management

\*\* Example project: Students work together to manufacture an Adirondack Chair

**Other relevant coursework pertinent to the Trades includes:**

- Basic Electricity and Electronics
- Home Repair and Maintenance
- Architectural Drafting
- 3D Architecture
- Computer Graphics