



Course Syllabus	
Franklin High School	2019-2020
Course Title: Intermediate Metals Manufacturing	Grade Level(s): 10-12
Prerequisites: Introduction to Industrial Technology	
Course description: This class builds upon the skills and knowledge from Intro to Industrial Tech and will expand into basic Metals Manufacturing Technology.	
Standards: Curriculum is aligned with Portland Community College. It is also articulated with Portland Community College's Welding (WLD111) Students may earn dual credit.	
<p>Schedule of topics/units covered:</p> <ul style="list-style-type: none"> ● <u>Hand and power tool identification, use and care.</u> ● <u>Metal working properties.</u> Selection, and metallurgical properties of various metals ● <u>Basic woodworking skills.</u> Students will learn to utilize hand and power tools in order to produce projects. ● <u>Manufacturing Careers.</u> Students will learn about careers in the metals manufacturing industries via guest speakers and field trips as well as in class research. ● <u>CNC router programming and operation.</u> Students will utilize MasterCam and other software to program CNC Mills and Plasma Cutters to produce a project of their own creation. ● Problem solving and utilization of tooling to solve various projects. <p>PROJECTS AND ACTIVITIES</p> <ul style="list-style-type: none"> ● Create a Tool Box of sheet Metal including the hinge, hasp and handle. ● Ball Peen Hammer using the more advanced features of the Lathe and Mill to turn aluminum and steel then threading and tempering the head. ● Service project(s). We are often asked to build things for other people, so you may be assigned a service project. ● Creative design project. Students will be given a design problem and assigned to design and build a prototype of it. 	
<p>Differentiation/accessibility strategies and supports (TAG, ELL, SpEd, other):</p> <p>Differentiation and accommodation are handled on a student by student basis. Examples include alternate projects, supplemental training material such as step by step worksheets, physical models, individual instruction during tutorial times and breaking down projects into small steps.</p>	

Final proficiencies:

Students will demonstrate proficiency in:

- Safety. Demonstrated by safe conduct, behavior and by passage of written safety test.
- Professionalism. Student will act in a manner conducive to a professional environment.
- Creating a simple, functional tool to specifications.
- Utilizing industry standard technology to program a CNC (computer numerical control) machine.
- Operating hand and power tools safely and effectively.
- Performing machining, welding, smithing and fabrication skills.

Assessment (pre/post)/evaluation/grading policy:

Students will be graded on the following:

- 20% written tests and quizzes.
- 40% Performance on projects and other activities such as CAD drawings.
- 20% Professionalism. *What is "professionalism"?* Attendance, showing up on time, participating in class discussions, working on projects, doing your cleanup job. These are all things that you would be expected to do on the job, so this will be excellent preparation.
- 20% service projects.

Behavioral expectations: All students will be required to read and sign the following document:

Part 1 Behavior Expectations:

1. NO CELL PHONE OR OTHER PERSONAL ELECTRONICS MAY BE USED **AT ANY TIME** IN ROOM S-140 WITHOUT INSTRUCTOR PERMISSION. **This includes passing time. THIS IS YOUR WARNING!** Devices will be confiscated and sent to the office.
2. Any student suspected of being under the influence of drugs or alcohol will be referred to school security.
3. Students will do their own work or their team's work only. Working on another student's project is the same as doing their work for other classes.

4. Students must ask permission to use the restroom. The restroom in S-140 is staff only. Only one student at a time may leave to use the restroom.
5. Students will work on APPROVED projects only.
6. Projects and/or other materials may be removed from the shop WITH INSTRUCTOR'S PERMISSION ONLY.
7. No running or horseplay is allowed in the shop.
8. Stealing or damaging school property or other students' property is will not be tolerated.
9. Use machines, tools and other equipment only for the purpose which it was intended.

Part 2 General Safety Regulations. Safety rules must be followed at all times!

1. Stay one arm's length from people working on projects. This includes at the bench and/or at a machine.
2. Do not throw or toss things. Anything.
3. Students must prepare for work each day by assuring the following: closed toed shoes worn, long hair tied back, loose clothing and jewelry secured, safety glasses on.
4. All students must be checked off on any machine before using it. This includes passing the machine-specific safety test for each machine.

Consequences for breaking shop policies:

1st offense: Warning.

2nd offense: Conference with student.

3rd offense: Parent phone call.

4th offense: Office referral and final chance. ***NOTE: serious offenses such as theft, vandalism or cheating will automatically fall into this category regardless of previous record.***

5th offense: Student will be permanently removed from the class-it is assumed that any student who reaches this point poses a serious safety or security threat to themselves, other students or the facility.

Date

Description

1st Offense _____

2nd Offense _____

3rd Offense _____

4th Offense _____

STUDENT PLEDGE. I understand the behavior expectations, the general safety rules and the consequences for breaking shop policies.

I also understand that using power tools is a privilege and that power tool privileges may be temporarily or permanently suspended by the teacher if safety and behavior expectations in class aren't met.

I will follow these rules and policies for my safety, the safety of others and out of respect for the school and teacher.

Safety issues and requirements:

All students must pass a hands-on and written safety test for all machines that they will be operating.

All students must conduct themselves in a safe, professional manner as outlined in the behavior expectations.