



<b>Course Syllabus</b>	
<b>Franklin High School</b>	<b>2019-2020</b>
Course Title: <b>Advanced Metals Manufacturing</b>	Grade Level(s): 11-12
Prerequisites: Introduction to Industrial Technology and Intermediate Metals	
<p>Course description: This class builds upon the skills and knowledge from Intermediate Metals. Students will be exposed to more complicated welding assignments where marketable skills is the goal. Assigned projects include Hydraulic Jack, TIG Welding, Original CNC projects and all manner of fabrication of projects for the school and shop.</p>	
<p>Standards: Curriculum is aligned with Portland Community College. It is also articulated with Portland Community College's Welding 111 where students may earn dual credit.</p>	
<p>Schedule of topics/units covered:</p> <ul style="list-style-type: none"> <li>● <b><u>Industry standard Welding.</u></b></li> <li>● <b><u>Advanced programming of CNC Mill.</u></b></li> <li>● <b><u>Metal Manufacturing Careers.</u></b> Students will learn about careers and internships in metal-working and manufacturing industries through field trips and guest speakers.</li> <li>● <b><u>Service project(s).</u></b> We are often asked to build things for other people, so you may be assigned a service project.</li> <li>● <b><u>Student Run Business</u></b> Students may participate in a student led business where stocks are purchased and job titles are earned to run a business designed to sell a product.</li> <li>● <b><u>Continuation of CNC programming and operation.</u></b> Students will produce a project of their own creation.</li> <li>● <b><u>Design challenge.</u></b> Students will be assigned to design and build a prototype of a metal project such as shelving, tables, etc.</li> </ul> <p><b>PROJECTS AND ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>● <b>Drill and tap threads</b></li> <li>● <b>Create a nut and screw</b></li> <li>● <b>Advanced Welding project.</b></li> <li>● <b>Original Lathe and Mill Project</b></li> <li>● <b>Service project(s).</b> We are often asked to build things for other people, so you may be assigned a service project.</li> <li>● <b>Creative design project.</b> Students will be given a design problem and assigned to design and build a prototype of it.</li> </ul>	
<p>Differentiation/accessibility strategies and supports (TAG, ELL, SpEd, other):</p> <p>Differentiation and accommodation are handled on a student by student basis. Examples</p>	

include alternate projects, supplemental training material such as step by step worksheets, physical models, individual instruction during tutorial times and breaking down of projects into small steps.

Final proficiencies:

Students will demonstrate proficiency in:

- Safety. Demonstrated by safe conduct and behavior and by passing a written safety test.
- Professionalism. Student will act in a manner conducive to a professional environment.
- Creating a simple, functional piece of furniture to given specifications.
- Utilizing industry standard technology to program a CNC (computer numerical control) machine.
- Operating hand and power tools safely and effectively.
- Performing basic carpentry 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:**

1<sup>st</sup> offense: Warning.

2<sup>nd</sup> offense: Conference with student.

3<sup>rd</sup> offense: Parent phone call.

4<sup>th</sup> 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.***

5<sup>th</sup> 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

1<sup>st</sup> Offense \_\_\_\_\_

2<sup>nd</sup> Offense \_\_\_\_\_

3<sup>rd</sup> Offense \_\_\_\_\_

4<sup>th</sup> 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.