

2023/2024 Syllabus
Manufacturing and Welding

CIP: 48.0508 - Welding

Mecosta/Osceola Career Center (MOCC)

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Program Description:

The manufacturing portion: The class serves as an introductory course designed to expand the student's career options by providing hands on experience in eight different areas of industry with focus on the Machines Trades. This course is an uninterrupted two-hour and fifteen-minute long block class that consists of six consecutive 6-week terms per year for one year The rationale for this class is to facilitate the learner's ability to understand and recognize the various aspects of industry while building a sound foundation of transferable knowledge that may be applied in future educational courses, military, or work place/career opportunities.

The welding portion: Welding is a process of joining metals. Metals are heated to their melting point by electric arc or gas flame and fused together with or without a filler metal. Welding is the most efficient method of permanently joining metal. Students will be exposed to twelve of the most commonly used welding and cutting processes in the 1st year. Second year students will further enhance their welding skills by spending additional time with these processes: G.M.A.W., G.T.A.W., and F.C.A.W. welding processes.

Textbook and Resources:

- ✚ Precision Machining Technology textbook – NIMS certified text
- ✚ Amatrol e learning– Online learning course
- ✚ Titans of CNC Academy Online CAD and CAM courses
- ✚ Amatrol Learning Activity Packets (LAP)
- ✚ Machinist's Handbook
- ✚ Students are required to bring pen, pencil, and paper to class each day (these are provided by the MOCC at the beginning of the year). Students are required to have a computer and internet service at home or available via other means.

- ✚ The school will provide study guides and essential materials to perform Learning Activity Packet (LAP) tasks and machining functions.

Course Content:

- ✚ Automated Material Handling – AMH – Robotics
- ✚ Design Processes – DP – Technical Prints and drawings, CAD and CAM
- ✚ Electrical Systems – ES – Industrial Logic Systems and Industrial Electronics
- ✚ Fluid Power – FP – Hydraulic and Pneumatic Systems
- ✚ Machining Processes – MP – Manual & CNC Mill, lathe, drill press, surface grinder, etc...
- ✚ Quality Control – QC – Precision Measurement, Print Reading, Part Inspection, SPC
- ✚ Plastics – PLT – Injection Molding and Mold Design
- ✚ Titans of CNC Academy – CAM and CAD design course (Fusion and Mastercam)
- ✚ HAAS Mill- 3 axis CNC Milling
- ✚ ON Shape- CAD programming

Program Pace Guide:

- ✚ See attached Course Map

Categorical Grading:

- ✚ Career Readiness Practices..... 30 %
- ✚ Skills Test..... 30 %
- ✚ Quizzes..... 20 %
- ✚ Projects/Notebooks..... 20 %

Grading Narrative:

Assessment type:

- ✚ A quiz at the end of each LAP is required before taking the skills test.
- ✚ A skills test is required at the end of each LAP.
- ✚ Projects will provide hands on learning techniques to enhance the learner’s depth of knowledge throughout different units. Projects consist of 2 grades compiled to one Skill Level achievement score. These projects scores account for 50% of your grade. 20% being the knowledge or understanding of the processes used and 30% being the product itself...did it meet the specifications called out on the part print.

Grading Scale:

Description	Rubric Score	Percentage	Letter Grade
Advanced	4	100	A
Advanced	3.75-3.99	97	A
Proficient	3.50-3.74	94	A
Proficient	3.25-3.49	90	A-
Proficient	3.00-3.24	87	B+
Developing	2.88-2.99	84	B
Developing	2.75-2.87	80	B-
Developing	2.63-2.74	77	C+
Developing	2.50-2.62	74	C

Developing	2.25-2.49	70	C-
Developing	2.00-2.24	67	D+
Beginning	1.75-1.99	64	D
Beginning	1.50-1.74	60	D-
Beginning	1.20-1.49	50	F
Beginning	0.90-1.19	40	F
Beginning	0.60-0.89	30	F

Late Work Policy:

No late work will be allowed to be turned in unless arrangement have been made with instructor.

Remediation and Retest Policy:

- Provisions are available for those with IEP's or who exhibit reading difficulty.
- Students who score lower than an 80% will be required to retest to achieve a score higher than an 80% for safety assessments.

Attendance

- See Handbook

Tardiness

- Students will be considered tardy if they are not at the worktables with notebook and writing utensils when class begins.
- All tardy students must sign in.

Bathroom privileges

- Teacher's discretion will be applied in these matters.

Career & Technical Student Organizations:

- Ferris Machining competition

Available Embedded Academic Credit:

- 4th Year Math Credit

Direct and Articulated Credit Opportunities:

- Ferris State University
- Mid-Michigan Community College
- Baker College
- Davenport University

Instructor Credentials:

- FSU – Associate of Science – Plastics Engineering Technology
- HAAS Mill Programming
- HAAS Mill Setup
- Mastercam Mill I

Classroom Procedures and Rules:

- First and foremost, attendance every day is required! You will miss a lot and it is not fair to others to have to “catch” you up. Our job is to prepare you for the workplace or post-secondary education; both have told us that attendance is key and the No. 1 reason for an employee being relieved of their duties!
- An “absence request” be completed prior to an absence or upon the first returning day after the student returns to class.
- Students are expected to be prompt and prepared. We provide a notebook, paper and writing utensils. Please have them out and ready at the beginning of class time.
- We do not stand at the door waiting to for release. Students leave from their seats when dismissed. I will do my best to make use of all your class time, including up until the bell for dismissal.
- Students will be respectful of peers and lab property.
- Students will abide by posted safety rules and procedures.
- Horseplay of any form in the classroom or lab area is NOT tolerated and will be dealt with immediately and appropriately. Safety report will be required dealing with infraction and injuries related to observed infractions.
- Language infractions “f-bombs” will result in a day of class suspension and student calling parent-explaining infraction.
- Please refer to the school handbook policies for proper behavior and consequences.

Clothing/Attire:

- Students **are required** to dress appropriately for safety purposes (and pride), we have a very dangerous lab area
- Clean jeans, without holes, pajama pants, sweat pants, or short are not permitted - no exceptions!
- Leather work boots are mandatory!
- No sleeveless shirts, no loose fitting garments, no hoodies in the lab or once class begins
- No jewelry
- Shoulder length or longer hair will need to be tied back

Internet:

Student will need to have an internet connection and working computer at home, or at their access. Homework on Tooling-U and Titans of CNC Academy will be assigned regularly.

EACH STUDENT WILL RECEIVE A SCHOOL POLICY HANDBOOK AT THE BEGINNING OF THE SCHOOL YEAR. PLEASE SEE THE NON-DISCRIMINATION CLAUSE INCLUDED IN THAT COPY. A COPY IS ALSO AVAILABLE AT THE OFFICE FOR REFERENCE IF NEEDED.

Syllabus/Contact sheet

Parents please make sure students have leather work boots and sound clothing and Jean pants for lab work. (With no holes or tears)

Welding & Fabrication students reviewed the syllabus together. Syllabus is available on Google Classroom. If you would like a hard copy of the syllabus, please let Mr. Schmidt know. By signing and returning this portion of the syllabus, the student agrees that they have received, read, and understand the above statements.

Student Signature

Date

Parent Signature

Date

Student achievement is a priority at the Mecosta Osceola Career Center. It is important for the teacher and parents to work together for the success of the Students. In order to communicate with you effectively, I need to know how and when to reach you. Please fill out the form below and together we will increase Student achievement.

Student Name: _____

Student cell Number: _____

Name of Parent/Guardian: _____

What is the best way and time to contact Parent/Guardian when needed?

Phone number Text YES or NO	Home Cell	Best Time to be reached
E-Mail address		

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E-mail address		

***Disclaimer: The Welding and manufacturing syllabus is subject to changed. The Instructor will notify the Students of any changes in a writing.**

****Accommodations: Accommodations will be made for the Students to the best of our ability. Examples of accommodations are: tests read to you, extended time for the tests, modified test, ect.**