

Google Classroom Codes:

1st Hr: lzdywvy

7th Hr: t4hdf2p

Course Description:

Students in this course will learn advanced skills in welding. Major topics are the use of plasma cutter, arc welding, MIG welding, TIG welding and gas cutting equipment. Other topics include metal work, project construction, agricultural structures and project plan design. FFA activities in agricultural mechanics are emphasized. An approved Supervised Agricultural Experience is required.

STANDARD 1.0 EXAMINE THE NATURE, SCOPE, AND ROLE OF AGRICULTURE IN THE SOCIETY AND THE ECONOMY

1.1 Investigate the impact of the agricultural industry on population, food, energy, and environment
1.2 Investigate the economic importance of products obtained from agriculture (i.e., animals, plants, technology, mechanics, etc.)

1.6 Investigate how the agriculture sector provides employment opportunities to the labor force

STANDARD 2.0 EXAMINE THE IMPACT OF TRENDS, TECHNOLOGIES, AND POLICIES ON AGRICULTURE

2.1 Identify the major milestones and technological advancements on agriculture and the impact to society
2.3 Describe the effects of current farming methods on water resources, erosion, and soil fertility

STANDARD 4.0 EXAMINE THE RELATIONSHIP OF THE ENVIRONMENT TO AGRICULTURE PRODUCTION AND SUSTAINABILITY

4.1 Identify agricultural products that can be converted to alternative energy sources
4.2 Analyze the use of renewable energy sources in agriculture (i.e., wind, solar, biofuels, etc.)

STANDARD 5.0 EXAMINE SOIL MANAGEMENT FOR PLANT AND ANIMAL PRODUCTION

5.1 Describe formation, properties, texture, structure, and composition of soil
5.2 Examine the relationship among soil characteristics, microflora, and environmental conditions
5.3 Analyze methods to control soil erosion
5.4 Analyze slope, erosion, and water movement in determining land capability, land use, and agricultural production
5.5 Formulate appropriate soil management practices on various sites

8.9 Describe techniques to harvest, handle, and store crops according to current industry standards

STANDARD 13.0 APPLY PRACTICES AND PROCEDURES FOR PLANNING, BUILDING, AND MAINTAINING STRUCTURES

13.1 Identify legal land descriptions
13.2 Investigate techniques used to survey land
13.3 Create sketches and plans for structures
13.4 Determine structural requirements, specifications, and estimate costs for structures (i.e., bill of materials)
13.5 Follow architectural and mechanical plans to construct, maintain, and/or repair agricultural structures (i.e.,

material selection, site preparation and/or layout, plumbing, concrete/masonry, electrical wiring, wood fabrication)

13.6 Design animal, plant, and mechanical facilities including equipment

13.7 Manage basic facility maintenance, installation, or repair

STANDARD 14.0 DEMONSTRATE OPERATION OF TOOLS, EQUIPMENT, AND INSTRUMENTS

14.1 Demonstrate safe operating instructions and procedures as recommended by the manufacturer
14.2 Utilize service manuals to perform preventative maintenance and determine scheduled service on tools, equipment, and instruments, including small engines

14.3 Maintain hand tools and power equipment (i.e., hand saws, power saws, welders, leaf blowers, etc.)

14.4 Demonstrate a variety of metal fabrication, welding, soldering, cutting, and finishing processes (i.e., SMAW,

GMAW, GTAW, fuel-oxygen, plasma arc torch, etc.)

14.5 Demonstrate a variety of wood fabrication and finishing processes

14.6 Service electrical systems and components of mechanical equipment and power systems using a variety of

troubleshooting and/or diagnostic methods

14.7 Utilize manufacturers' guidelines to diagnose, troubleshoot, and repair machinery, equipment, and power source systems (i.e., hydraulic, pneumatic, transmission, steering, suspension, etc.)

STANDARD 15.0 DEMONSTRATE AGRIBUSINESS MANAGEMENT, FINANCE, AND MARKETING SKILLS

15.1 Define basic business terminology

15.4 Use management software and information technology

STANDARD 16.0 EXAMINE TECHNOLOGY TOOLS AND SYSTEMS USED TO ACCESS, MANAGE, INTEGRATE, AND CREATE INFORMATION AND SOLVE PROBLEMS

16.1 Use industry-relevant software and internet applications

16.2 Use collaborative and virtual meeting software

16.3 Analyze the benefits and limitations of emerging technology such as geospatial, online mapping systems, drones, and robotics

16.4 Explain the benefits of computer-based and mobile application equipment

16.5 Apply computer and other technologies to solve problems and increase efficiency [i.e., LabQuest, programmable logic controller (PLC), Geospatial Information System (GIS), Computer numeric control (CNC), Unmanned aircraft system (UAS), etc.]

Grading:

Students will earn points by written assignments, quizzes, tests, and hands on activities in the laboratory.

Approximate point values are as follows:

Students will earn points by written assignments, quizzes, tests, and hands on activities in the laboratory. Approximate point values are as follows: Assignment Type	1st Semester	2nd Semester
Written assignments, quizzes, tests	300 points	600 points
Laboratory projects	1000 points	500 points
Laboratory work	1300 points	700 points
Quarterly Leadership points	200 points	200 points
Final Exam / Required Forms completed	560 points	400 points
Interactive Notebook	350 pts	350 pts
Total points possible	3710 points	2750 points

A large

portion

of the grade is based on laboratory activities. Employability Skills will be graded that could include proper preparation, punctuality, and participation, attitude, cooperation, willingness to share will be graded. School rules will apply to absences, tardiness, and make up work. It is the student's responsibility to make up all work missed in a timely fashion. Students cannot make-up non-work days or non-dress days.

Course Procedures

Performance objectives for this course can only be completed by student participation in planned activities. Student grades will be based upon the completion of assignments given both in class and in the laboratory. Students are expected to dress appropriately for activities planned and work conducted. Safety procedures will be emphasized at all times.

Students will not receive credit for partial work

Late work: Assignment point value will be reduced 10% a day it is not turned in to the teacher. In order for a student to receive the opportunity for an extra credit assignment, the original assignment must be completed and turned in to the teacher in person.

Make up: for missed lab days (Work Points) : Come at lunch or after school to make up the work time.

Major Projects

Some of the major projects that students will be expected to complete include keeping an Interactive Notebook, personal job related records, welding skill development, project construction, class projects (school improvement construction projects). Please refer to the curriculum outline for approximate times projects will be due.

**This course may be taken for Dual Enrollment at MCC as Welding 101.