Comal ISD
Course Syllabus
Canyon Lake High School
Year 2013-2014

Grading guidelines and shared responsibilities, attendance and behavior expectations, and essential curriculum standards for the course

Course Title: ***Agriculture Mechanics and Metal Fabrication – Spring only***
Teacher: ***Gary W. Adams***
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Office Hours: 7:00 am – 8:00 am 8:30 am – 9:25 am
Mechanics Laboratory hours: 4:00 pm – 6:30 pm on Wednesday afternoons and all class times.

Grading Guideline:

Six-Weeks Grades are determined in the following manner:

1. 20% Daily Grades
    a. Homework papers
    b. Online assignments
    c. Daily Work
2. 35% Quizzes and CAs
    a. Quizzes
    b. Warm-ups
3. Major Grades
    a. Exam or test
    b. Welding Skill Grades
    c. Projects assigned.

Semester Grades:

1st Six Weeks Average = 30%
2nd Six Weeks Average = 30%
3rd Six Weeks Average = 30%
Semester/Final Exam = 10%

Students will get a grade for every day they are in the shop/laboratory

a. Doing your work and cleaning up will result in a deduction.
b. Failing to clean up is 30-point deduction minimum.
c. Horse play is a zero for the day
d. Not being on time to the lab is a deduction of 10 points
e. Inappropriate clothing for shop class will result in a **zero for the day.**
    i. Examples: Sandals, shorts, T-shirts, Low neck shirts, dresses and skirts.

Late Work

The table below represents the **maximum** penalty that may be imposed for turning in late work:

Days Late	**Percent of Grade Received by Student**	**Example(s)**
1 Day	80%	100 records as 80 (100 x 0.80 = 80) 80 records as 64 (80 x 0.80 = 64) 60 records as 48 (60 x 0.80 = 48)
2 Days	60%	100 records as 60 (100 x 0.60 = 60) 80 records as 48 (80 x 0.60 = 48) 60 records as 36 (60 x 0.60 = 36)
3 or more Days	0%	No credit given—grade of zero (0)

****Calendar days do not include Saturdays and Sundays***

- More than three late assignments during any one six-week grading period may result in additional consequences.
- Extenuating circumstances may occur that are out of the control of the student and which prevent him/her from completing and returning homework assignments. The student is to inform the teacher of any such circumstances that prevented the completion of the homework. Teachers may grant exceptions to this policy, as necessary.
- The late work policy may not apply to projects and term papers that are scheduled in advance and can be turned in prior to an absence.

Makeup Work

In order to provide the total assessment "picture" of a student's academic progress for a course, any student missing classroom instruction should be given the opportunity to make up the missing assigned work. This will ensure instructional continuity and place importance upon consistent attendance and daily study. Students shall be permitted to make up assignments and tests following any absence.

Makeup Work Guidelines

- Makeup work is available to all students. **Students are responsible for asking teachers** for the makeup work upon returning to class. Students shall receive credit for satisfactory makeup work after an absence**, but may receive a zero for any test not made up within the allotted time**. Any assignment not turned in within the allotted time falls within the late work guidelines.
- **The number of class days allowed for makeup work to be completed for full credit will be equal to the number of times a class was missed.** Extra time may be given at the teacher's discretion.
- A student should not, on the day of returning to school, be required to take a quiz or test that was announced during his/her absence.
- Makeup work, including tests, may be an alternate version to assess what the student has learned.
- Teachers may assign additional work to ensure that students who have been absent have sufficient opportunity to master the TEKS or to meet subject or course requirements. The assignments shall be based on the instructional objectives for the subject or course and may provide greater depth of subject matter than routine makeup work.

Suspension

A student suspended from his/her regular classes is to request makeup work when he/she returns to school. The student is expected to satisfactorily complete the assignments for the period of suspension within the time designated by the makeup work policy.

Exam Exemptions

Beginning with the 2013-2014 school year, no exemptions will be allowed at the middle or high school.

CLASSROOM EXPECTATIONS

1. BE PREPARED
    a. Be here on time.
    b. Read the board.
    c. Bring ALL materials to class EVERYDAY.
    d. Turn in assignments on time.
2. ACT APPROPIATELY
    a. Follow directions.
    b. Stay on task.
    c. Show respect for others.
    d. Participate.
    e. Obey all school rules.

Materials and Class Actives Common to all Agriculture classes:

1. Note Book
2. Dividers for Six Weeks
3. Pens and Pencils
4. Daily Log of what happens in class – This paper will be provided
5. Keeping a Record Book electronically (provided & can be access from home.

CONDUCT POLICY IN THE CLASSROOM:

1. No food or drinks will be consumed in the class room after the bell.
2. Use of inappropriate language or gestures will result in a referral.
3. Tardiness will result in a 5 point deduction from the daily grade.
4. Students will be in their seats and not in the shops, labs or in the bathrooms at the time of the tardy bell.
5. Students should request permission to go to the bath room or to get a drink during the class time.
6. Do not leave books, clothing or any other items on desk, tables without permission.
    a. Items will be placed in lost and found at school.

Classroom disruptions or other infringements on the class will be dealt with individually.

Consequences can include: Verbal warning, Detention, Parental Contact, and Administrative Referral

Course Description of AGSCI 221

Introduction to Agriculture Mechanics and Metal Fabrication

(Spring Semester Only)

This course connects scientific principles with mechanical skills. The course will develop understanding and skills in the traditional areas of agricultural mechanics including the following: safety, tool maintenance, Arc Welding, Gas Welding, MIG Welding and TIG Welding basics. Student will be expected to perform each skill listed in this syllabus in one semester. Supervised experience and FFA will be integrated, as appropriate throughout.

Topic A - 1: Supervised Agricultural Experience Programs
The student shall be provided the opportunity to discuss the importance of supervised agricultural experience programs.

Topic Objectives:
After completing the topic(s), the student shall be able to:

1. Identify types of supervised agricultural experience activities;
2. Describe characteristics of successful supervised agricultural experience programs;
3. Select, plan, and conduct supervised agricultural experience activities; and
4. All students will keep and maintain a daily log book on what happens in class each day and what they accomplished.
5. If raising animal will keep a log of expenses, income and inventory for the year.

Topic A – 2 FFA
The student shall be provided the opportunity to become a member of the FFA club and earn their degrees.

Topic Objective.

1. Identify what FFA is.
2. Identify the Degrees in FFA
3. Earn a Degree if they wish

UNIT B: SAFE USE OF TOOLS AND EQUIPMENT
Topic B-1: Identifying and Using Hand Tools

1. Identification of all hand tool in both shops – Power point presentation, Hand on and exam on Power point

Topic B-2: Identifying and Using Power Tools

1. Identification of safe practices on each power tool used in the shop for wood working. – Power point on each tool plus a written exam for each with a score of 90 or better. Taking on School Testing systems.
    a. Horizontal Band Saw
    b. Cold saw
    c. Chop Saw
    d. Drill press
    e. Iron Worker
    f. Right Angle Grinder
    g. Glass Bead Machine
    h. Stick Welder
    i. Mig Welder
    j. Tig Welder
    k. Oxy Fuel Cutting and Welding

Topic B-3: Selecting and Using Measuring and Marking Devices

1. Rulers
2. Tape measures
3. Micrometer
4. Caliper
5. Fractions, Decimals – Adding, Subtracting, Multiplying and Dividing.

UNIT H: COLD AND HOT METAL PROCESSES AND PROCEDURES

Topic H-1: Identifying, Cutting, Filing, Shaping, and Drilling Metals

Topic Goal:

1. The student shall be provided the opportunity to identify and develop cold metal working skills as
2. they apply to agricultural construction:
3. Topic Objectives:
4. After completing the topic(s), the student shall be able to:
5. identify and describe characteristics of different types of metals;
6. safely cut, drill, and grind cold metals; and
7. use correct procedures for bending, shaping, and filing cold metal

Topic H-2: Selecting and Operating Oxy-Fuel Cutting and Welding Equipment

Topic Goal: The student shall be provided the opportunity to learn and apply safe practices as they relate to oxy-fuel cutting and welding.

Topic Objectives: After completing the topic(s), the student shall be able to:

1. discuss characteristics of oxygen, acetylene, and other industrial fuel gases;
2. explain functions of oxy-fuel heat;
3. identify components of oxy-fuel cutting and welding equipment;
4. describe proper procedures for assembling oxy-fuel cutting and welding equipment;
5. discuss safety precautions for the oxy-fuel cutting and welding processes;
6. describe proper procedures for turning on and off the oxy-fuel equipment;
7. identify and describe types of weld joints;
8. safely demonstrate proper procedures for cutting metals with oxy-fuel cutting equipment;
9. properly maintain cutting and welding tips;
10. . prepare metal for oxy-fuel welding;
11. . safely demonstrate oxy-fuel welding procedures; and
12. safely demonstrate oxy-fuel hardsurfacing and cast iron welding procedures.

Topic H-3: Selecting and Operating Electric Arc Welding Equipment

Topic Goal: The student shall be provided the opportunity to become familiar with and develop fundamental skills appropriate for arc welding.

Topic Objectives: After completing the topic(s), the student shall be able to:

1. discuss fundamental scientific principles and concepts used in arc welding;
2. list and describe types of arc welding machines;
3. discuss welding equipment selection criteria;
4. discuss types, classifications, size, uses, and selection criteria for electrodes;
5. discuss safety precautions that must be followed when using arc welding equipment;
6. properly prepare metal for welding;
7. determine the correct amperage setting;
8. describe the different welding positions;
9. describe the appropriate method for striking an arc and laying a bead in various positions;
10. discuss basic types of weld joints;
11. discuss different types of welding beads and weaving patterns and the applications for each;

12. demonstrate procedures for making butt welds;
13. demonstrate procedures for making fillet welds;
14. Demonstrate procedures for making groove weld;
15. demonstrate out-of-position welding technique

SEE CHART BELOW FOR REQUIRED SKILL OF A SCORE OF 70 OR BETTER
Students are expected to master these skill for the semester. 2-3 per week

Oxy Fuel Skills - (*This set of skills must be preformed in order of 11 – 19*)		
Lab Assignment	1	Setting up the Oxy Fuel Bottle (Teacher Observed)
Lab Assignment	2	Turning on the Oxy Fuel Cutting Riggs (Teacher Observed)
Lab Assignment	3	Mild Steel Experiment with different Flames (SP)
Lab Assignment	4	Puddles (SP)
Lab Assignment	5	Outside Corner 1-F position no filler rod Fusion weld (SP)
Lab Assignment	6	Running a Bead with filler rod Mild steel in 1 position (SP)
Lab Assignment	7	Running a Butt joint with filler rod in the 1G position (SP)
Lab Assignment	8	Lap Joint with filler rod in 1-F position (SP)
Lab Assignment	9	Box Skill – Lay out and Fabrication skill (SP)
Welding Mild Steel with Brass Filler Rods and Flux		
Lab Assignment	10	Running Beads on Mild Steel with a Brass Rod – position 1
Lab Assignment	11	Butt Joint – Welding mild steel using a brass rod on 16 gage steel - position 1G
Lab Assignment	12	Lap Joint – Welding Mild Steel using a brass rod on 16 gage steel – Position 1F
Lab Assignment	13	Cutting, Beveling skill and piercing mild steel (SP) with a Oxy Fuel Cutting Torch
Lab Assignment	14	Cutting Cast Iron with a Oxy Fuel Cutting Torch

Shop Rules and Policies		
Grading Policies		
Basic Welding Positions for Plate		
Basic Welding Positions for Pipe		
Basic Welding Joints		
Arc Welding (SMAW –Shield Metal Arc Welding) or Stick Welder – Running Beads		
SKILL	1	Welding Beads changing the amperage setting
SKILL	2	Running a Bead with a 6011 – 1 position (SP) – AC polarity
SKILL	3	Running a Bead with a 6011 – 1 position (SP) – DCEP polarity
SKILL	4	Running a Bead with a 6011 – 1 position (SP) – DCEN polarity
SKILL	5	Running a Bead with a 7014 – 1 position (SP) – AC Polarity
SKILL	6	Running a Bead with a 7014 – 1 position (SP) – DCEP Polarity
SKILL	7	Running a Bead with a 7014 – 1 position (SP) – DCEN Polarity
SKILL	8	Running a Bead with a 7018 1 position (SP) – AC Polarity
SKILL	9	Running a Bead with a 7018 1 position (SP) – DCEP Polarity
SKILL	9	Running a Bead with a 7018 1 position (SP) – DCEN Polarity
Lab Assignment	10	E 6011 rod - Layer 1- Polarity of choice – Position 1
Lab Assignment	11	E 7014 rod - Layer 2- Polarity of choice – Position 1
Lab Assignment	12	E7018 rod - Layer 3 – Polarity of choice – Position 1
Lab Assignment	13	Lap Joint with a 6011 –1F position – Polarity of choice

Lab Assignment	14	Lap Joint with a 7014 – 1F position - Polarity of choice
Lab Assignment	15	T – Joint with a 6011 – 1F position - Polarity of choice
Lab Assignment	16	T - Joint with a 7014 – 1F position - Polarity of choice
Lab Assignment	17	Outside corner with a 6011 – 1G position - Polarity of choice
Lab Assignment	18	Inside corner with a 6011 – 1G position - Polarity of choice
Lab Assignment	19	Single V joint – 6011 - 1G position - Polarity of choice
MIG Skills – GMAW		
Lab Assignment	20	Running beads with .035 wire on ¼ steel plate in a 1 position
Lab Assignment	21	Lap Joint in 1F position with .035 wire on ¼ steel plate
Lab Assignment	22	T joint in 1F position with .035 wire on ¼ steel plate
Lab Assignment	23	Outside corner on ¼ steel plate in the 1G position
Lab Assignment	24	V Joint in 1G position with .035 wire on ¼ steel plate
MIG Skills – GMAW		
Lab Assignment	25	Running 3 beads on 16 gage steel in the 1 position
Lab Assignment	26	Lap Joint in 1F position with .035” wire in 16 gage steel
Lab Assignment	27	Butt joint in 1G position with 0.35 wire on 16 gage steel
Lab Assignment	28	Build box that is 3” x 3” x 3” and weld it shut.
TIG Welding Skills – Mild Steel		
Lab Assignment	29	Running beads on mild steel ¼ plate in position 1
Lab Assignment	30	Lap Joint on ¼ “ mild steel in position1F
Lab Assignment	31	Outside corner ¼ “ mild steel in position 1G
Lab Assignment	32	V-Joint on ¼ “ mild steel in position 1G
Lab Assignment	33	Running beads on 16 gage steel in position1
Lab Assignment	34	Lap joint on 16 gage steel in position 1F
Lab Assignment	35	Outside corner on 16 gage steel in position 1G
Lab Assignment	36	Butt Joint on 16 gage steel in position 1G
Lab Assignment	37	Weld Square Tubing – Butt Joint – position 1G

TIG Welding Skills – Aluminum		
Lab Assignment	38	Running puddles on 1/8 Aluminum plate – Position 1
Lab Assignment	39	Running beads on 1/8 Aluminum plate Position1
Lab Assignment	40	Butt Joint on 1/8 Aluminum plate – Position 1F
Lab Assignment	41	Lap joint on 1/8 Aluminum plate – Position 1F
Lab Assignment	42	Outside corner 1/8 Aluminum plate –Position 1G
Lab Assignment	43	Welding the bottom end of two coke cans Position 1G