

Kent Career/Technical Center

WELDING 1

Syllabus 2019-20

Main Office: (616)364-8421

Instructor: Mr. Swenson

Ext: 2390

jamesswenson@kentisd.net

Mr. Goodman

Ext: 2692

kurtgoodman@kentisd.net

COURSE DESCRIPTION:

CIP Code: 48.0508

Are you interested in knowing more about:

- Industrial safety?
- Welding processes?
- Cutting processes?
- Welding fabrication?
- Welding symbols?
- Blueprint reading?
- CNC systems?
- Learning real career skills for your future?

Immerse yourself in the highly skilled, highly technical world of welding. From the science of metals, to joining and cutting, you'll explore a variety of welding techniques and materials professionals use to create and repair everything from bridges and buildings to computers and cellphones. With one of the most in-demand skills in the country, welding students have nearly endless opportunities for further education and work right out of high school.

CORE SKILLS NEED BY EVERY WORKER

- Problem Solving
- Personal Management
- Career Planning
- Teamwork
- Work Ethic

CAREER PREPARATION EXPERIENCES

- College Expo
- Business and Industry Expo
- Field Trips
- Practice Presentations and Interviews with business and industry members

COURSE STANDARDS

- OCCUPATIONAL ORIENTATION
- SAFETY AND HEALTH OF WELDERS
- SHIELDED METAL ARC WELDING
- GAS METAL ARC WELDING
- GAS TUNGSTEN ARC WELDING
- MANUAL OXY-FUEL CUTTING
- MECHANIZED OXY-FUEL CUTTING
- FLUX CORED ARC WELDING
- PLASMA ARC CUTTING
- AIR CARBON ARC CUTTING
- DRAWING AND WELDING SYMBOLS
- WELDING INSPECTION AND TESTING

CLASSROOM PROCEDURES:

- A code of conduct (cooperation) is created by each class.
- Students will participate and cooperate in class activities.
- Students must treat self, others, and equipment with respect.
- Students need to request permission from instructor and sign out before leaving classroom. Only one person may be gone at a time.
- KC/TC Responsible Thinking Process is utilized in classroom management.

ATTENDANCE:

The Tech Center mimics the world of work. Students are asked to call or email their teacher for themselves before the start of class in absence situations. Parents may see absences through PowerSchool and will be notified of excessive absences.

LATE WORK AND MAKEUP WORK:

Late work will be handled using through communication with student, parent, and teacher while following the guidelines of the RTC process. All assignments must be turned in prior to the end of the quarter in which they were assigned. A final due date for each quarter will be set by the Instructor. Any assignments that are not completed by this date will be marked 0 (E). The instructor will set due dates for some assignments during the quarter. Assignments turned in after the set due date, but before the end of the quarter due date, will be marked down 15% from the graded score.

Students who need to makeup work must communicate with the instructor to setup a plan.

ASSESSMENT/TESTING:

Students will be provided every reasonable opportunity to show their best work on assessments. Students may retake tests as necessary to demonstrate their competency. Students may be required to stay after class or come back to KCTC to retake tests under certain circumstances.

RESOURCES:

Power School: powerschool.kentisd.org/public

G-mail: (firstnamelastname)@kentisd.net

Moodle: www.moodle.kentisd.net

OSHA: <https://campus.careersafeonline.com>

U/LINC: <https://lincolneh.plateau.com/learning/user/nativelogin.jsp>

ESAB: <https://training.esabna.com/>

GRADING:

KCTC supports grading practices that are consistent, accurate, meaningful and supportive of learning.

KCTC grades are reported in two ways – Semester grades (A, B, C, D, E) and a year-end Certificate identifying a proficiency level on each course standard.

KCTC issues grades on a quarterly (9 week) basis. This quarter grade is composed of 70% Technical skills and 30% Career and Employability skills.

The semester grade is determined by combining the two quarterly grades, the semester industry evaluation, and the embedded academic content within a course. Each quarter counts for 45% of the grade. The industry evaluation counts for 10% of the grade. When viewing grades on PowerSchool, it is always important to look at the S1 or S2 grade as the overall in-progress grade for the course.

Technical skill grades are issued on assignments and assessments which represent a total number of points earned. This total number determines a percentage of points earned and a letter grade is assigned accordingly. Assignments and assessments in this type of grading are categorized as either formative or summative. Formative work guides learning. Summative work measures how well something has been learned. Summative work is weighted more than formative work. Students may earn the opportunity to redo or retake summative assignments and assessments.

Students will be issued Career and Employability summative scores at least twice per quarter to provide feedback on the skills of professionalism, initiative, respect, responsibility and safety. The combination of these scores will determine the Career and Employability skills grade.

Pre and Post Testing – at times, students will be asked to complete pre-instruction assessments to aid the teacher in designing learning. These pre-assessments will be scored, but they will not affect the student grade. It is important for a student to make their best attempt on a pre-instruction assessment to help the teacher design appropriate instruction. After instruction the student will complete a post-instruction assessment to determine how well they learned the skill. This will be scored and will affect the student grade.

Additionally, scores are issued to students to reflect the proficiency level they have achieved on particular Industry Standards. The Standards scoring scale: 0 – Not attempted or Minimal Knowledge, 1 – Beginning Proficiency, 2 – Developing Proficiency, 3 – Proficient (meets industry standard), and 4 – Advanced Proficient. Students will also be issued a quarterly Standards score (0 – 4) in the Career and Employability skill areas of professionalism, initiative, respect, responsibility and safety. At the end of each year, students will be issued a Standards score (0 – 4) in the area of career writing proficiency and math proficiency as well. These scores are reported on the year-end Certificate which is used by employers to assess industry skill levels.

NINE WEEK GRADING POLICY:		
*Foundation / technical Skills		70%
Career and Employability Skills		30%
Total		100%
SEMESTER GRADING POLICY		
First Nine Weeks	45%	
Second Nine Weeks	45%	
Evaluation (interview or project presentation)	10%	
Total		100%

***70% Foundation / Technical Skill is broken into two areas: Assessments =50%, Homework = 20%**

GRADING SCALE:

Rubric Average Range*		Score out of 100 to enter into Gradebook	Description	Standard Score	Letter grade
3.50	4.00	100	Advanced	4	A
3.25	3.49	97	Proficient	3	A
3.00	3.24	94	Proficient	3	A
2.80	2.99	90	Proficient	3	A-
2.51	2.79	87	Proficient	3	B+
2.31	2.50	84	Proficient	3	B
2.11	2.30	80	Proficient	3	B-
1.91	2.10	77	Developing	2	C+
1.71	1.90	74	Developing	2	C
1.50	1.70	70	Developing	2	C-
1.25	1.49	67	Beginning	1	D+
1.00	1.24	64	Beginning	1	D
0.75	0.99	60	Beginning	1	D-
0.50	0.74	57	Minimal knowledge	0	E
0.01	0.49	54	Minimal knowledge	0	E
0	0	50	Minimal knowledge	0	E
0.00	0.00	0	Student did not Attempt	0	E

TARDY PROCEDURE:

To gain the most from this course and encourage good employability readiness, it is strongly recommended that daily attendance and timeliness be observed. If a student's tardiness becomes chronic, the RTC process will be used to resolve the problem. If a student is tardy, they must go to the front KTC office and sign in before they are able to enter class.

INTERNSHIPS AND JOB SHADOWS:

Students may have the opportunity to complete an internship or a job shadow during the course. In addition, job recommendations and placement through student services are possible.

ARTICULATION:

College credit may be offered to students who complete the program with a grade of 84% or higher. Please speak with your instructor about your plans for college and career.

HIGH SCHOOL CORE CREDIT:

Students who complete the Welding program may be eligible to receive high school credit. For more information on the eligibility requirements and application process, talk to your KCTC or high school counselor. After completing the Welding program the following credits are available:

- Math: 1/2 credit
- ELA: 1/2 credit

CERTIFICATIONS:

OSHA 10 Hour Safety

STUDENT ORGANIZATIONS:

Students may have the opportunity to participate in:

- Boilermakers competition
- MITES competition
- Ferris State University welding competition
- Muskegon Community College welding competition

STUDENT EXPECTATIONS:

Participation	Integrity	Attendance	Dependability
1. Participate in class	1. Follow policies set by KCTC	1. Provide documentation to homeschool when absent.	1. Work without supervision when allowed.
2. In class on time	2. Follow safety rules and expectations	2. Follow KCTC attendance policy	2. Manage your own time
3. Come prepared to work	3. Be aware of surroundings to ensure safety	3. Be proactive to make up missed learning opportunities	3. Answer for your own activities
4. Volunteer and do extra tasks and activities	4. Display a positive and respectful attitude	4. Attendance is key to your success, attend whenever possible	4. Begin tasks promptly
5. Accept work assignments willingly	5. Demonstrate positive leadership		5. Re-check, verify, or proof work
6. Demonstrate initiative	6. Be honest		6. Complete tasks on time
7. Work to your capacity			7. Use and store equipment and tools properly
8. Work well with other students			8. Create and maintain a safe work area
9. Assist and communicate with instructors			9. Conserve materials
10. Display a positive attitude			10. Show pride in your work
			11. Show concern for your career goal
			12. Accept feedback

YEAR SEQUENCE:

(PLEASE NOTE THIS IS A TENTATIVE SCHEDULE)

Introduction / General Welding Exploration 1st week

PRE TESTING

1st week

Safety rules / issues lecture & video

1st week

Segment 1 – Occupational Orientation

Safety operations

lab equipment / hand tools

2nd week

Segment 2 – Safety and Health for Welders

Electrical Safety unit

2nd week

Video / lecture on equip repair

2nd week

SMAW (ARC) introduction info

lab exercises

3-5th week

Segment 3 - Shielding Metal Arc Welding

Math / Tape measure (fractions)

4-5th week

exercise units 1-6 (classroom) / Lab exercises

SMAW (ARC) information

prep for written test / Lab exercises

6-7th week

Segment 2 – Safety and Health for Welders

7th week

Prep SMAW (ARC) exercises

Performance Test

8th week

SMAW (ARC) Performance Test

8th week basic entry level

Finish all Arc exercises
see check off sheet in lab

9th week

Oxy-Acetylene Safety

Torch operation / Gas welding

10th week

Segment 4 - Manual Oxyfuel Gas Cutting

Segment 5 – Mechanized Oxyfuel Gas Cutting

11th week

Carbon Arc review

11th week

CNC Plasma cutting introduction / demo

Segment 12 – Air Carbon Arc Cutting

Segment 10 – Plasma Arc Cutting	11 th week
Advanced SMAW (ARC) welding (V-groove plates 3/8")	12 th week
Math / decimal units 1-3 prep for Welding Principles / or <i>Math text</i>	13 th week
Work Exploration / Field trip to local Industry / College visitation (additional speakers from colleges)	14 th week
Welding Principles /	14-18 th week every day (60 minutes)
Welding Principles reading Math test #1	17 th week
SEMESTER END TEST <i>Prep for project performance project test</i>	18 WEEK
Advanced SMAW welding lab exercises 3/8 V groove AWS D1.1 specifications	18-23 rd week
Welding competitions Preparation	19 th Week
NECCA electric vehicle fabrication	19 th Week
Finish Welding Principles / <i>Math test #2</i>	19 th week
Structural shapes introduction and testing	20 th week
Resumes / Employability / Cover letter Life skills units 1-6 / Job shadowing (all material must be saved on thumb drive)	20 th week
Bill of Material introduction and testing	21 st week
Drilling and tapping section	22 nd week
Sheet metal exercises CNC plasma cutting exercises	23 rd week
Philosophy / creative thinking unit	23 rd week

GMAW (M.I.G) introduction	24-25 th week
<i>Segment 6 – Gas Metal Arc Welding</i>	25 th week
GMAW (M.I.G) exercises equipment maintenance / written test	26 th week
GMAW (M.I.G) Performance test (Entry level)	27 th week
<i>Segment 7 – Drawing and Welding Symbols</i>	27 th week
FCAW Flux Cored Arc Welding intro	28 th week
<i>Segment 8 – Flux Cored Arc Welding</i>	
Gas welding feeder section for GTAW Advanced AWS D1.1 certification testing	29 th week
<i>Segment 11 – Welding Inspection and Testing</i>	
GTAW (T.I.G) welding introduction	30 th week
<i>Segment 9 – Gas Tungsten Arc Welding</i>	
GTAW (T.I.G) welding exercises	31 st week
GTAW (T.I.G) Performance Test (entry level)	32 nd week
In House Welding Competition	32 nd week
Project Performance Test / Fabrication project	33-34 th week
Lab Prep / Make up welding exercises / Review all welding components to (Mastery level) CNC Plasma cutting units	33-35 th week
College prep documentation review / Career research / Employability documentation	36 th week
SEMESTER END	36th week