DC Course Syllabus **Term: 2021-2022**

A.K. Smith Career Center
Ivy Tech Community College

Course Information:

High School Course Title & DOE #: **Gas Welding Processes, 7101** **HS Credits:** 1.0

Ivy Tech Course Title and number): Gas Metal Arc MIG Welding, WELD 207 **Ivy Tech Credits:** 3.0

School: Advanced Manufacturing, Engineering, and Applied Science

Program: Industrial Technology

Contact Hours: Lecture: 1 Lab: 4

Length of Course: 1 year
Semester Registered: Full-Year Class (Aug 2020 to May 2021)

High School Faculty Information –

Name: Ken Tinzie
Phone Number: 219-873-2120 ext. 8711
Email (Ivy Tech email): ktinzie01@mcas.k12.in.us
Office/Campus Location: AK Smith Career Center
817 Lafayette Street Michigan City, Indiana 46360

Office Hours: 7:25am- 2:25pm

COURSE TITLE: Gas Metal Arc (MIG) Welding
COURSE NUMBER: WELD 207
PREREQUISITES: None.
SCHOOL: Advanced Manufacturing, Engineering, & Applied Science
PROGRAM: Industrial Technology
CREDIT HOURS: 3
CONTACT HOURS: Lecture: 1 Lab: 4
DATE OF LAST REVISION: Spring, 2019
EFFECTIVE DATE OF THIS REVISION: Fall, 2019

CATALOG DESCRIPTION: Considers various gas metal welding (GMAW) processes including microwire, flux-core, inner shield, and submerged arc with emphasis on metal inert

gas welding. Techniques of welding in all positions on various thicknesses metal.

MAJOR COURSE LEARNING OBJECTIVES: Upon successful completion of this course the student will be expected to:

1. Employ safety practices involved in gas metal arc welding. [c]
2. Describe constant voltage and wire feed welding processes. [e,f]
3. Weld with hard wire using short circuit and spray method welding. [e,f]
4. Weld with flux-core tubular wires. [e,f]
5. Weld aluminum with spray. [e,f]
6. Identify the gases used in gas metal arc welding. [e,f]
7. Perform routine maintenance on gas metal arc welding equipment. [e,f]
8. Identify and weld five (5) basic types of joints. [e,f]
9. Demonstrate ability to read and interpret technical documents. [b,e]
10. Demonstrate ability to use various types of software applicable to course. [a]

Note: Letters following objectives correspond to ATMAE Outcomes

COURSE CONTENT: Topical areas of study include –

Shielding Gases used in GMA	Troubleshooting GMA power sources and feeders Metal
Transfer methods	AWS Structural Steel visual acceptance criteria
Safety in GMA Welding	Welding defects and discontinuities AWS
Filler metal identification	Flux Cored welding techniques
Aluminum identification system	Cleaning aluminum

Required Text and Materials:

Welding Fundamentals, Fifth Edition Goodheart-Wilcox
ISBN# 978-63126-328-6

COURSE TITLE: Shielded Metal Arc Welding I
COURSE NUMBER: WELD 108
PREREQUISITES: None.
SCHOOL: Advanced Manufacturing, Engineering, & Applied Science
PROGRAM: Industrial Technology
CREDIT HOURS: 3
CONTACT HOURS: Lecture: 1 Lab: 4
DATE OF LAST REVISION: Spring, 2019
EFFECTIVE DATE OF THIS REVISION: Fall, 2019

ADA Statement

Ivy Tech Community College seeks to provide reasonable accommodations for qualified individuals with documented disabilities. If you need an accommodation because of a documented disability, please contact the Office of Disability Support Services.

If you will require assistance during an emergency evacuation, notify your instructor immediately. Look for evacuation procedures posted in your classroom.

Code of Student Rights and Responsibilities:

Students can review their rights and responsibilities as an Ivy Tech Community College dual credit student here: https://www.ivytech.edu/studentcode/index.html

Attendance Policy –

Students are expected to attend and participate regularly in class meetings, online learning activities, and other activities assigned as a part of a course of instruction. Faculty are required to report student participation in compliance with institutional policies and federal financial aid guidelines. Faculty and staff shall be sensitive to students' religious beliefs and observances including an expectation that instructors make reasonable arrangements when a student must miss an exam or other academic exercise due to their religious observance. When notified in advance, and when possible, faculty will make allowances for students to make up missed work.

Methods of Evaluation: *Students will be evaluated on assignments (20%), assessments (20%), projects and presentations (20%), labs (20%) and workplace ethics (20%).*

Late/Make-up policy: Per the Michigan City Area Schools Handbook policy, "It is the student's responsibility to gather, complete, and return classroom assignments in a timely manner upon return to school to his/her respective teacher(s). A student **has the same number of days to make up classroom assignments as the number of days he/she was absent from school**. If a student is absent for an extended period of time, the parent/legal guardian may contact the student's teacher and request information pertaining to homework assignments. Please allow at least 24 hrs for homework to be provided."

Grading Scale:

A.K. Smith Welding Grading Scale	
Letter Grade	**Percentage**
A	90 - 100%
B	80 - 89%
C	70 - 79%
D	60 - 69%
F	< 59.5%

WELD grade scale	
Letter Grade	**Percentage**
A	90 - 100%
B	80 - 89%
C	70 - 79%
D	60 - 69%
F	< 59.5%

Accessing Grades: Course grades are available for students by logging into Ivy Tech's online student system called, MyIvy, at the following address: https://myivy.ivytech.edu/. Ivy Tech will not distribute grades by mail, you will need to look up your grades in your MyIvy account. There may be a waiting period of 30 days from the end of the high school semester to obtain grades through MyIvy. If you'd like to order an official transcript, check your unofficial transcript first and the order your official Ivy Tech transcript through MyIvy by taking the following steps:
Step 1: Login into your MyIvy account (myivy.ivytech.edu)
Step 2: Select "**Student**" on the left hand side.
Step 3: Select "**Course Info**"
Step 4: Then select "**Request Official Transcripts**"

If you no longer have access to MyIvy because you have not attended in two or more years, click here (https://exchange.parchment.com/send/adds/index.php?main_page=login&s_id=9Su8AzIbYotFXfOT) to request your transcript online. You will need to **Create an Account with Parchment Exchange** if you haven't already done so. Should you need to reset your password, you will click on "**Forgot Your Password**."

Academic Honesty Statement

The College is committed to academic integrity in all its practices. The faculty value intellectual integrity and a high standard of academic conduct. Activities that violate academic integrity undermine the quality and diminish the value of educational achievement. Cheating on papers, tests or other academic works is a violation of College rules.

No student shall engage in behavior that, in the judgment of the instructor of the class, may be construed as cheating. This may include, but is not limited to, plagiarism or other forms of academic dishonesty such as the acquisition without permission of tests or other academic materials and/or distribution of these materials and other academic work. This includes students who aid and abet as well as those who attempt such behavior.

Copyright Statement -

Students shall adhere to the laws governing the use of copyrighted materials. They must ensure that their activities comply with fair use and in no way infringe on the copyright or other proprietary rights of others and that the materials used and developed at Ivy Tech Community College contain nothing unlawful, unethical, or libelous and do not constitute any violation of any right of privacy.

Course Communication - Students are expected to uphold their responsibilities in terms of appropriate and professional communication with faculty and peers. Please review the 'Students Rights and Responsibilities' section of the student handbook (located in MyIvy) and review common netiquette (Internet etiquette) practices, like those found at: http://www.ivytech.edu/online/resources.html

Right of Revision

The instructor reserves the right to change any statements, policies or scheduling as necessary. Students will be informed promptly of any and all changes.

Tentative Course Schedule

Class Meeting	**Topic**	**Assigned Work**	**Work Due and Exams**
Week 1	Safety in the Welding Shop	Chapter 2 Review syllabus Safety Lecture (1)	
Week 2	Safety in the Welding Shop	Chapter 2 Review syllabus Film on safety (1)	Quiz: Safety
Week 3	GMAW and FCAW: Equipment and Supplies	Chapter 15 Identify the gases used in gas metal arc welding Perform routine maintenance on equipment Describe constant voltage and wire feed welding processes (2,6,7)	
Week 4	GMAW and FCAW: Equipment and Supplies	Chapter 15 Identify the gases used in gas metal arc welding Perform routine maintenance on equipment Describe constant voltage and wire feed welding processes (2,6,7)	Quiz: Maintenance of Equipment
Week 5	GMAW and FCAW: Equipment and Supplies	Chapter 15 Identify the gases used in gas metal arc welding Perform routine maintenance on equipment Describe constant voltage and wire feed welding processes (2,6,7)	
Week 6	GMAW and FCAW: Equipment Assembly and Adjustment	Chapter 16 Demonstrate ability to read and interpret technical documents (9,10)	Lab: Blueprint reading
Week 7	GMAW and FCAW: Equipment Assembly and Adjustment	Chapter 16 Demonstrate ability to read and interpret technical documents (9,10)	Lab: Blueprint reading

Week 8	GMAW and FCAW: Equipment Assembly and Adjustment	Chapter 16 Demonstrate ability to read and interpret technical documents (9,10)	Lab: Blueprint reading
Week 9	GMAW and FCAW: Flat Welding Position	Chapter 17 Identify and weld (5) basic joints Weld with hard wire using short circuit Weld with flux-core tubular wires Weld aluminum with spray (3,4,5,8)	
Week 10	GMAW and FCAW: Flat Welding Position	Chapter 17 Identify and weld (5) basic joints Weld with hard wire using short circuit Weld with flux-core tubular wires Weld aluminum with spray (3,4,5,8)	Quiz: Welding Joints
Week 11	GMAW and FCAW: Flat Welding Position	Chapter 17 Identify and weld (5) basic joints Weld with hard wire using short circuit Weld with flux-core tubular wires Weld aluminum with spray (3,4,5,8)	
Week 12	GMAW and FCAW: Flat Welding Position	Chapter 17 Identify and weld (5) basic joints Weld with hard wire using short circuit Weld with flux-core tubular wires Weld aluminum with spray (3,4,5,8)	Lab: Create (5) welding joints

Week 13	GMAW and FCAW: Horizontal, Vertical and Overhead Welding Positions	Chapter 18 Weld with hard wire using short circuit Weld with flux-core tubular wires Weld aluminum with spray (3,4,5)	Lab: Weld in all positions
Week 14	GMAW and FCAW: Horizontal, Vertical and Overhead Welding Positions	Chapter 18 Weld with hard wire using short circuit Weld with flux-core tubular wires Weld aluminum with spray (3,4,5)	Lab: Weld in all positions
Week 15	GMAW and FCAW: Horizontal, Vertical and Overhead Welding Positions	Chapter 18 Weld with hard wire using short circuit Weld with flux-core tubular wires Weld aluminum with spray (3,4,5)	Lab: Weld in all positions
Week 16		All Projects Due	Final Exam