



## Aerospace Welding Program \*

### Course Description

#### **Precision Gas Tungsten Arc Welding (GTAW)**

*9 Credits (Hrs: 2 Lec. 14 Lab)*

This course will cover beginning Gas Tungsten Arc Welding through advanced welding techniques, all necessary weld tests required for certification in an aerospace welding facility, visual inspection of welds, precision aerospace fabrication, fixture care and usage, as well as filler metal identification and storage. Upon successful completion a student should be able to quickly and easily become certified in an aerospace welding facility and have a good working knowledge of specialized shop practices and fabrication methods. Students will learn lean manufacturing ideas and how to manufacture parts safely and efficiently.

**Prerequisite(s):** Enrolled in Highlands College Aerospace Welding Program

#### **Lab Safety**

*1 Credit (Hrs: 1 Lec.)*

Students will learn why safety takes precedence over all other demands and requirements in the workplace. This class will cover proper PPE, safe usage of shop equipment and weekly safety topics. Students will also learn proper inspection of equipment before use and preventative maintenance.

**Prerequisite(s):** Enrolled in Highlands College Aerospace Welding Program

#### **Quality Control, Blueprint Reading, and Precision Measurement**

*4 Credit (Hrs: 4 Lec.)*

Students will learn the importance of quality control in the workplace. They will learn the dangers of foreign object debris (FOD) in final products and how to maintain strict quality standards. Students will learn the different quality certifications commonly seen in high end manufacturing shops and how to maintain an audit ready shop. This course covers the basics for understanding the reading of blueprints and shop drawings. The use of AWS welding symbols for blueprint reading is also covered.

**Prerequisite(s):** Enrolled in Highlands College Aerospace Welding Program

#### **Weld Visual Inspection**

*1 Credit (Hrs: 1 Lec.)*

In this course students will learn what a conforming weld looks like and how to inspect parts to ensure the welds are conforming. Students will learn the importance of high quality welds and how thorough visual inspection can save hours of rework time.

**Prerequisite(s):** Enrolled in Highlands College Aerospace Welding Program



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### **WRIT095 Developmental Writing**

*3 Credits (Hrs: 3 Lec.)*

Course provides instruction and practice in basic writing skills, emphasizes paragraph development and organization, and reviews sentence structure, word choice, and spelling. Assignments include short pieces, journals, and essays. Mastery of the basics of grammar and mechanics is assumed. Prepares students for College Writing I (WRIT 101). Incoming students not meeting the minimum passing score on placement test are required to enroll in and successfully complete WRIT 095 prior to enrolling in WRIT 101.

### **M111 Technical Mathematics**

*3 Credits (Hrs: 3 Lec.)*

This course presents basic mathematical topics as they are applied in a technical program. Topics covered include percent, ratio proportion, formula evaluation, basic algebra and geometry concepts, trigonometry and measurement are developed and integrated in a technical.

**OR**

### **M090 Introductory Algebra**

*4 credits (Hrs: 4 Lec.)*

*Brief review of fractions and decimals. Beginning algebra concepts including the real number system, algebraic expressions, linear equations, exponents and polynomials, the rectangular coordinate system, and simple factoring. Also, basic geometry, measurement, and problem solving with applications for technical and business fields.*

**Prerequisite(s):** M 061 or Compass score of 45-54. Course generally offered year round.

### **Internship**

*1 Credit*

Students wishing to do so may complete an internship at Montana Precision Products. They will have an even more in depth look into the world of aerospace manufacturing. Students participating in this internship will experience firsthand the exacting standards required in the aerospace industry and will have an opportunity to become fully certified welders for MPP before receiving their certificate.

**Prerequisite(s):** Enrolled in Highlands College Aerospace Welding Program



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**Aerospace Welding Program**  
 Certificate of Applied Science Degree  
 1 Semester

Student Name:	Catalog
Student ID:	PIN

Course Number	Course Title	Credits	Semester Completed	Transfer or Waive	Grade
	Shop Safety	1			
	Precision GTAW	9			
	Weld Visual Inspection	1			
	Quality Control, Blueprint Reading, and Precision Measurement	4			
	Blueprint reading and Weld Symbols	3			
	Developmental Writing	3			
	Technical Math or Into to Algebra	3 or 4			
	Optional Internship	1			
	Total Credits	24 or 26			

**Program Requirements: 24 Minimum Credits**

\_\_\_\_\_  
 Advisor Signature

\_\_\_\_\_  
 Date

\_\_\_\_\_  
 Student Signature

\_\_\_\_\_  
 Date

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