

# **BASIC WELDING, BASIC MACHINIST, & REF/AC SYS TECH TRAINING INFORMATION**

## **BASIC 1 WELDING- 40 HOURS**

### **COURSE DESCRIPTION**

The Basic 1 Welding course is for the entry-level welder with little to no experience and will cover the following: A – Basic blueprint reading, interpreting, and deciphering welding symbology. B – Oxy-acetylene and alternate fuel gas cutting theory, practice, and safety. C – Proper procedures for fire watch and basic fire **theory** and safety. D – Welding theory and procedure. 1. Shielded Metal Arc Welding (SMAW) 2. Gas Metal Arc Welding (GMAW) E – Welding metallurgy. F – Pressure and Non-Destructive Testing methods. **BASIC WELDING 1 PRACTICAL SKILL ASSESSMENTS** The student will start with several pieces of hot rolled steel and perform multiple butt welds in the flat position using the SMAW or stick welding process. Based upon proficiency the student will proceed to fillet welds on T joints in the flat position, with the ultimate goal to progress through all four positions proficiently.

### **CLASS REQUIREMENTS**

Students attending the Basic 1 Welding Course will be required to wear steel toed work shoes or boots, long sleeve shirts and pants of either FR material or Organic Fiber (cotton or similar) no synthetic materials allowed and have safety glasses. All other PPE will be provided.

### **TRAINING CERTIFICATE OF COMPLETION**

This course of instruction includes the following core competencies; welding processes, positions, electrodes, basic metallurgy alternate fuel gas cutting process and associated safety and fire watch duties. Also, use of inert gases, flux cored and gas shielded welding. The holder of this certificate has demonstrated proficiency using E6011 and E7018 electrodes in the flat, horizontal and vertical positions producing butt and fillet welds both single and multiple pass welds. They have also demonstrated proficiency in the FCAW (Flux Cored Arc Welding process also in the flat, horizontal and vertical positions.

### **CLASS SIZE**

Minimum number of students per class (2). Maximum number of students per class (6).

### **COURSE LOCATION**

NORFOLK, VA

### **COURSE DATES**

Feb 09 2026 to Feb 20 2026

Apr 20 2026 to May 01 2026

Jul 20 2026 to Jun 31 2026

Aug 31 2026 to Sep 11 2026

Nov 30 2026 to Dec 11 2026

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## **BASIC WELDING, BASIC MACHINIST, & REF/AC SYS TECH TRAINING INFORMATION**

### **BASIC MACHINIST- 120 HOURS**

#### **COURSE DESCRIPTION**

A traditional machinist is one who can: operate a machine tool; disassemble and repair the machine tool by building new parts such as gears, splines, and shafts from scratch using various machine tools such as mills, lathes, grinders, planers, etc.; then reassemble the machine tool and operate it.

#### **CLASS REQUIREMENTS**

Students attending the Basic Machinist course will be required to wear steel toed work shoes or boots, long sleeve shirts and pants of either FR material or Organic Fiber (cotton or similar) no synthetic materials allowed and have safety glasses. All other PPE will be provided.

#### **TRAINING CERTIFICATE OF COMPLETION**

This course of instruction includes the following core competencies and associated practical assessments required for basic Machinist: Blueprint reading, use of precision measuring instruments (Vernier Calipers, Micrometers, Depth Gauges, Dial Indicators, Scales, and telescoping Gauges), use of hand tools and portable tools, hand tools and power tool safety, basic mill, drill press and lathe operation.

#### **CLASS SIZE**

Minimum number of students per class (2). Maximum number of students per class (4).

#### **COURSE LOCATION**

NORFOLK, VA

#### **COURSE DATES**

Available upon Request. Minimum class size is (3) students and maximum class size is (4) students. To request training, submit a training request through your chain of command and include your available date range in section 8 of the request form.

# BASIC WELDING, BASIC MACHINIST, & REF/AC SYS TECH TRAINING INFORMATION

## REFRIGERATION AND AIR CONDITIONING SYSTEMS TECHNICIAN- 100 DAYS

### COURSE DESCRIPTION

Provide selected Machinist Mate and designated civilian personnel with the necessary training and knowledge to effectively operate and maintain shipboard refrigeration and air conditioning system and equipment. Introduction to basic theory of heat and matter as applied to refrigerants and their effect on refrigeration and air conditioning systems. Identification of refrigeration system components, their principle of operation, including reciprocating and rotary compressors, adjustments and maintenance to include evaporator pressure regulators, solenoids, valves, pressure and temperature switches, metering devices, water regulating valves, refrigerant valves, condensers, evaporators and compressors. Provide knowledge of maintenance and operation of refrigerant recovery unit as specified in PMS, NAVSHIPS and Manufacturers' Technical Manual. Introduction to air conditioning plants and systems to include cooling coils, pneumatic and electronic temperature controls and compressors (reciprocating and centrifugal). Air conditioning system operation and maintenance procedures as specified in PMS, NAVSHIPS and Manufacturers' Technical Manual. Air conditioning system troubleshooting and corrective maintenance as applied to chilled water systems, to include R-236fa microprocessor and MACALT 360 electronic capacity control. Procedures for refrigerant handling and recovery utilizing Refrigerant Recovery Unit and Transfer, Pump-out and Evacuation unit, stressing EPA guidelines are discussed in all phases of the course.

### CLASS REQUIREMENTS

Must have a minimum of twelve (12) months shipboard experience.

### TRAINING CERTIFICATE OF COMPLETION

Graduates are able to receive EPA UNIVERSAL CERTIFICATION, upon receiving passing grade of self-paced EPA course.

### CLASS SIZE

Limited number of quotas are provided to MSC each course offering.

### COURSE LOCATION

NORFOLK, VA & SAN DIEGO, CA

### COURSE DATES

NORFOLK, VA	SAN DIEGO, CA
2026-APR-27 to 2026-AUG-05	2026-FEB-23 to 2026-JUN-01
2026-MAY-04 to 2026-AUG-12	2026-MAR-16 to 2026-JUN-23
2026-AUG-10 to 2026-NOV-18	2026-APR-06 to 2026-JUL-15
2026-AUG-17 to 2026-NOV-25	2026-JUN-08 to 2026-SEP-16
2026-AUG-24 to 2026-DEC-03	2026-JUL-20 to 2026-OCT-27
	2026-AUG-17 to 2026-NOV-25
	2026-SEP-28 to 2027-JAN-21

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