

# JOURNEYMAN AND APPRENTICE COURSES

## Milwaukee Area

### Sheet Metal Workers Local 18

#### Classes offered Semester 2 2011-12

#### SM-568 Heating and Air-Conditioning Service 1

MATC - South Campus

Not offered this semester

This is a required Apprentice class also open to **journeymen**. The course is designed to present an introduction to service work as it relates to the sheet metal trade. The student will be given an overview of Electrical Theory and Circuiting, Gas Heating Controls and Start-up, Mechanical Cooling and Economizers and Control systems, including VAV Systems, air Handlers and Make-up Air Systems.

#### SM-518 Measuring and Sketching

MATC - South Campus

Not offered this semester

This is a required apprentice class also open to journeymen. In this course, the student will be given a single line drawing and some design parameters. The student will design, size and measure the system. A sketch and shop drawing will be made from this. A takeoff will be made from this and analyzed using basic computer software.

#### SM-576 Fabrication Techniques 6 Measuring and Fabrication

MATC - South Campus Th 1/26/12 - 5/17/12 5:00pm-7:00pm

This is a required apprentice class also open to journeymen. A course designed to accurately measure between two given points and determine the fittings and duct required to join both points. Sketch (not freehand) and detail duct run. Fill out Fabrication form tickets as if material were being ordered from the shop for the field install (without missing info). To layout, form, and assemble various square, rectangular and cylindrical fittings that utilize Triangulation, Radial Line, and Parallel Line development principles. To install material fabricated between the points from which it was measured. To obtain practice in trigonometry using Sine, Cosine, Tangent, and the rules of various types of triangles (rt., 45 degree, 30/60/90, etc.).

#### SM-578 Fabrication Techniques 8 Plasma Cutting

MATC - South Campus Th 1/26/12 - 5/17/12 4:30pm-6:30pm

This is a required apprentice class also open to journeymen. The student will be able to identify the major components of a plasma cutting system, explain important acronyms: CNC, DNC, NC, CAD, IBM, and DOS, give a short definition of plasma arc and know the meaning of dross, kerf, multitasking, and fiber optics. The student will also know the danger of the high intensity arc and the potentially harmful fumes produced in the cutting process.

#### SM-430 Testing Adjusting and Balancing (TAB) 1

MATC - South Campus M 1/30/12 - 5/14/12 4:30pm-6:30pm

This is a required apprentice class also open to journeymen. The purpose of this course is to introduce the art and science of testing, adjusting, and balancing environmental systems. Students will learn how and why to take field measurements of air conditioning systems to assist in performing testing, adjusting, and balancing. Emphasis will be on definitions, the interrelation of components in the total systems, the use of instruments, recording of data and following basic procedures.

#### SM-590 Capstone Course

MATC - South Campus M 1/30/12 - 5/14/12 5:00pm-7:00pm

This is a required apprentice class also open to journeymen. The student will apply the principles and skills acquired in the preceding classes of the apprenticeship training, and apply them to complete a small duct job. To properly analyze, draw, layout, and fabricate the components of the required duct run. This is the final course for sheet metal apprentices to complete their apprenticeship.

#### Weld-331 Structural Welding 1

MATC - South Campus M 1/30/12 - 5/14/12 6:30pm-8:30pm

This is an open welding class. Individualized instruction is provided to everyone from beginners to those preparing to gain one of the many types of certification. The course will teach the required skills for both students who haven't had any previous welding experience and for the advanced welder who may require welding certification in a particular process and positions. Processes covered include Shielded Metal Arc (SMAW), Metal Inert Gas Welding (MIG), Tungsten Inert Gas (TIG), Oxygen-Fuel welding/cutting and Plasma Cutting of various types of metal in all positions.

#### SM-490 AutoCAD for Sheet Metal Workers

MATC - South Campus M 1/30/12 - 5/14/12 5:00pm-8:00pm

The AutoCAD for Sheet Metal Workers is an AutoCAD program taught from a sheet metal workers point of view, starting with basic AutoCAD drawing and Editing commands. Each drawing session will be on a concept related to the sheet metal field, from drawing parts that could be saved as a DXF file for plasma table burn out to plan and elevation views of units and duct work. Some of the areas of the AutoCAD program that will be presented in the drawing projects are: Paper space, Isometric Drawings, Dimensioning, Text, Attributes, and drawing 3D objects.

#### SM-593 Detailing for Sheet Metal Workers

MATC - South Campus

Not offered this semester

The purpose of this course is to demonstrate to the sheet metal worker the methods and practices to detail and/or draft a commercial job. Completion of SM490 or a demonstration of proficiency in AutoCAD is required. Topics covered in this course are: digital documentation - Microsoft word, job organizational skills - paperwork, managing digital files, familiarity with SMACNA standards, extracting all pertinent information from Specification books, interpreting equipment submittals, basic understanding of plumbing, steam fitting, sprinkler fitting, pneumatic tube, electrical routing, architectural plan and HVAC installation procedures, sequence of operation - drawing procedure - internal coordination, plan and spec versus design build, job closeout documents, basic take-off procedure for ordering ductwork and introduction to external coordination meeting etiquette.

## 432-539 EST Joining Processes

MATC - South Campus

Offered next semester

This is a traditional lecture/lab course providing instruction, demonstration, and practice in the various joining processes that a Service Technician will use in the trade. Included in this instruction is practical experience in conduit bending, pvc piping, sheet metal, pipe threading, copper pipe and tube soldering and brazing, and welding processes. This is a required course for first year service (EST) apprentices, but is also open to all journeymen.

## 432-541 Controller Theory I

MATC - South Campus

Offered next semester

This is a required EST apprentice class also open to journeymen. Study the fundamentals of computer hardware, phone modems, and common software packages used by the Environmental Service Technician. Apply Direct Digital Controls (DDC) and pneumatics to EST functions. This is a 36-hour course for the EST apprentice.

## 432-542 Controller Theory II

MATC - South Campus Th 1/26/12 - 5/17/12 4:30pm-8:30pm

This is a required EST apprentice class also open to journeymen. Apply the computer knowledge learned in Controller Theory I to the Environmental Service Technician applications of direct digital control systems used in commercial buildings.

**Prerequisite: 401-573**

## 432-538 Controller Theory III

MATC - South Campus Th 1/13/12 - 4/24/12 5:00pm-8:00pm

This is a required EST apprentice class also open to journeymen. Further understanding of applications related to commercial buildings that use direct digital systems during this third course in a series for EST apprentices.

**Prerequisite: 401-573 and 401-574**

## SM-431 Testing Adjusting and Balancing (TAB) 2

MATC - South Campus

Start date dependent on enrollment

This is a required EST apprentice class also open to journeymen. Study advanced air balancing theory with applications to larger equipment. This is a preparatory class for the TAB certification test. Prerequisite is **TAB 1**.

## New course Offering\* Variable Speed Drives in HVAC Applications

MATC - South Campus

Start date dependent on enrollment

This is a course in PWM AC drive technology covering standard components, operation, programming and maintenance/troubleshooting. Extensive lab work will provide the student with the opportunity to work with actual AC drives to facilitate learning programming. PC interfacing will entail using PC monitoring and programming tools and interfacing Johnson Control N2 Bus and Siemens Building automation FLN Network. It is a combination of previous Variable Speed Drives 1, 2 and 3 classes.

**In addition to the classes offered above, there are numerous classes offered at the Technical Schools and local supply houses. It is the policy of the Milwaukee Area Sheet Metal training office to reimburse for trade related courses taken by its qualifying members up to \$500.00 per course per semester. Receipts must be turned in within 3 months of completion of the course.**

You can go to some of the following sources for additional training options:

[www.matc.edu](http://www.matc.edu)

[www.wctc.edu](http://www.wctc.edu)

[www.sheetmetal-iti.org](http://www.sheetmetal-iti.org)

[www.auersteel.com](http://www.auersteel.com)

[www.galarson.com](http://www.galarson.com)

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**PLEASE PRINT**

**(Sign-up for classes)**

mail to Milwaukee Area Sheet Metal JATC  
2201 Springdale Rd. Waukesha, WI 53186

Or email to [Milsheetmetaljatc@msn.com](mailto:Milsheetmetaljatc@msn.com) or [milsmjatc@hotmail.com](mailto:milsmjatc@hotmail.com)

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