



2018 SEMINAR PROGRAM



123 South Street, Suite 112, Oyster Bay, NY 11771

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www.maccny.org

info@maccny.org

MACC MISSION STATEMENT

To assist and enable MACC members to acquire, serve and satisfy their customers by: Providing the highest quality technical and management information and services. Promoting good business ethics and sound business practices. Being the standard of excellence by which others are measured. Influencing public policy to improve the business climate Enhancing the image of contractor professionalism to government, industry and the public Maintaining and expanding MACC's membership base and sphere of influence.

MACC 2018 SEMINARS

The objective of these education classes is to provide tangible value to current and future contractor members of MACC.

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SCHEMATICS & SYMBOLS

COURSE DESCRIPTION

This seminar focuses on the interpretation of construction drawings and specifications associated with HVAC installations in new construction. It explores the many different types of drawings that HVAC technicians and installers work with. It covers the use of specifications and submittals for HVAC equipment installation. It also covers the performance of the takeoff process for HVAC equipment and materials.

8 HOUR PROGRAM



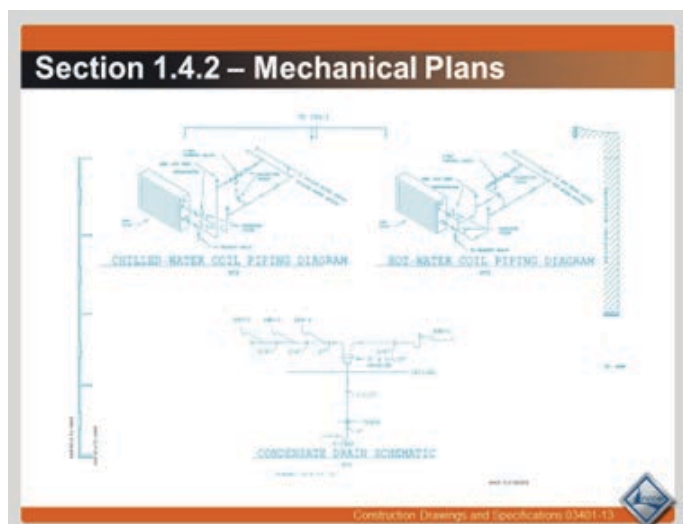
SATURDAY

8:00 AM - 4:00 PM

**Location: 65 Elm Street
Copiague, NY 11726**

WHAT YOU WILL LEARN

- **Describe the types of drawings HVAC technicians work with and how they are used.**
 - Explain the initial approach to viewing a set of drawings
 - Describe site plans and their purpose
 - Describe plan views, elevations, detail drawings, and section drawings and their purposes
 - Describe plumbing, mechanical, and electrical drawings and their purposes
 - Describe shop drawings and their purpose
 - Describe as-built drawings and their purpose
 - Describe schedules and their purpose
 - Describe the Request for Information (RFI) and how it is prepared
 - Explain the importance of building codes to the design process
- **Describe the uses of specifications and submittals in construction projects.**
 - Describe specifications and their purpose
 - Describe submittals and their purpose
- **Describe the takeoff process and how it is performed.**
 - Identify and describe the tools and materials used in the takeoff process
 - Explain how to conduct a takeoff circuit



CONTROLS

COURSE DESCRIPTION

This seminar provides technicians with information and skills needed to troubleshoot control circuits found in heating and cooling equipment. Developing troubleshooting skills for control circuits is vital to the future success of a technician in the HVAC/R trade. This seminar will be HANDS-ON.

WHAT YOU WILL LEARN

- | SA | 8:00 | Location | Copy |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|------|
| <ul style="list-style-type: none"> • Identify and describe the operation of common HVAC control circuit devices. <ul style="list-style-type: none"> - Identify and describe the operation of relays, contactors, and motor starters - Identify and describe the operation of other common safety and control circuit devices • Describe the sequence of operation for basic HVAC systems. <ul style="list-style-type: none"> - Describe the sequence of operation of a basic cooling-only system - Describe the sequence of operation for a common heating and cooling system - Describe the operation of basic pneumatic control systems • Explain how to troubleshoot common control circuits and load components. <ul style="list-style-type: none"> - Identify basic safety practices related to troubleshooting HVAC power and control circuits - Explain how to approach HVAC-related problems and prepare for troubleshooting - Explain how to test high-voltage power sources | | | |

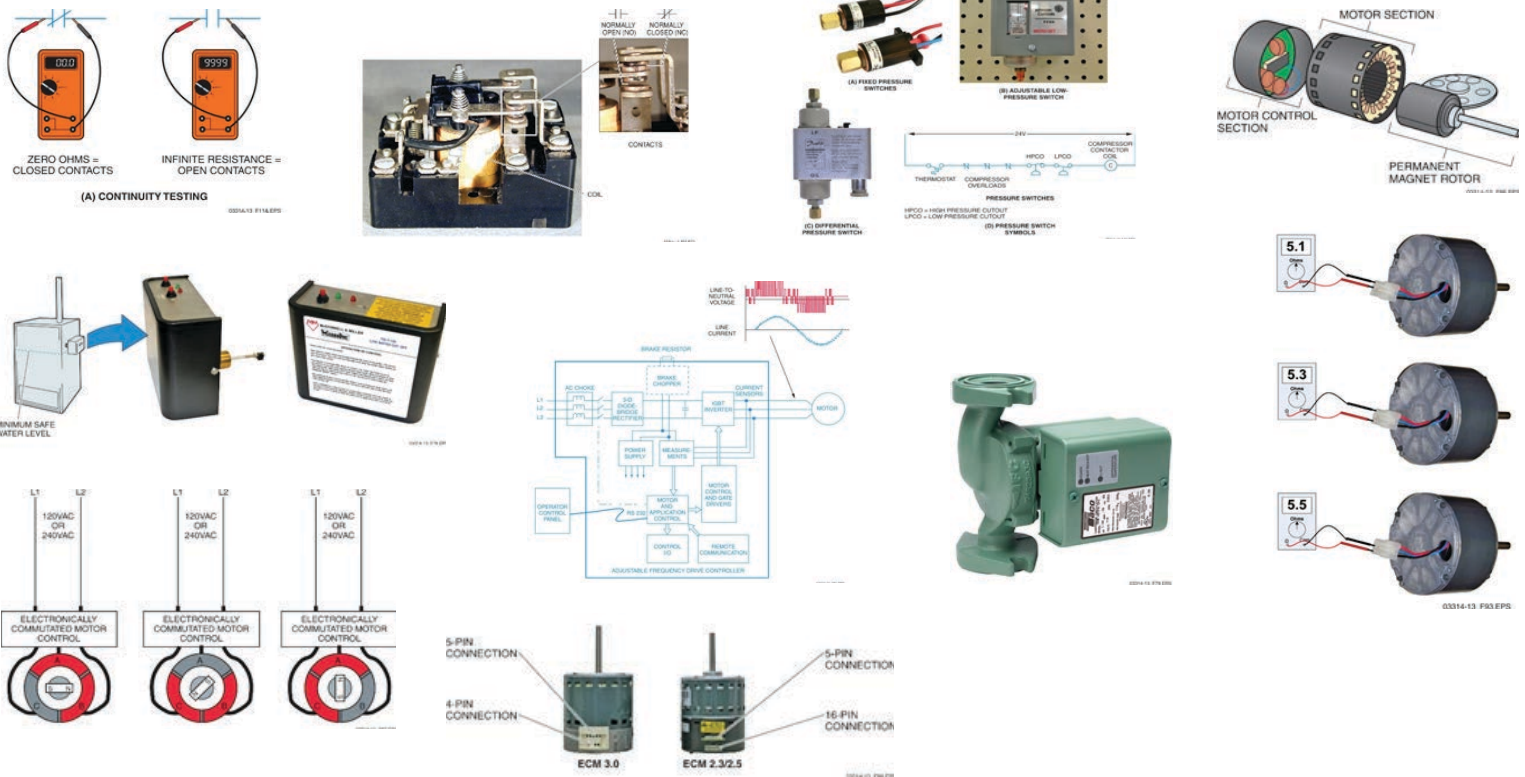
8 HOUR PROGRAM



SATURDAY

8:00 AM - 4:00 PM

**Location: 65 Elm Street
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AIR CONDITIONING MAINTENANCE

COURSE DESCRIPTION

HVAC/R technicians must be familiar with common items such as gaskets, belts and filters. The service and repair of equipment requires technicians to make decisions regarding correct materials to use in specific situations. Lubrication is also an important part of maintenance activities. Technicians must understand the application in order to select and apply the appropriate lubricant. This seminar will present information related to maintenance-oriented materials, as well as guidelines for the inspection and periodic maintenance with a basic overview of cooling in regards to refrigerants. This seminar will be HANDS-ON.

WHAT YOU WILL LEARN

- **Identify different types of belt drives and describe how they are installed and adjusted.**
 - Identify various types of drive belts
 - Explain how to install & adjust drive belts
- **Identify and describe common gaskets, packing materials, seals and bearing.**
 - Identify and describe common gasket and packing materials
 - Identify and describe common types of seals
 - Identify and describe common types of bearings
- **Describe the inspection and/or maintenance requirements for selected equipment.**
 - Identify common health hazards associated with HVAC maintenance activities
 - Describe the common inspection & maintenance procedures for DX cooling & heat pump systems
 - Describe the common inspection & maintenance procedures for various systems accessories
 - Describe how to properly complete common HVAC service reports

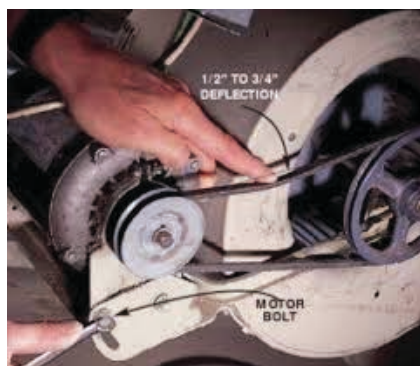
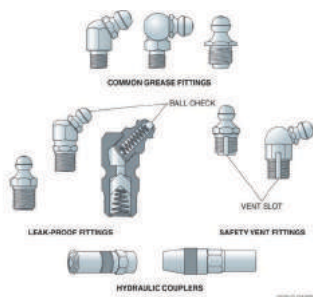
8 HOUR PROGRAM



SATURDAY

8:00 AM - 4:00 PM

**Location: 65 Elm Street
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COMPRESSOR MAINTENANCE & REPAIR

COURSE DESCRIPTION

The compressor is considered to be the heart of the HVAC system. It provides the force that moves the refrigerant through the cycle and it raises the pressure of the refrigerants so that the heat absorbed in the evaporator can be transferred again at the condenser. It is important to understand compressors and to know how to service and troubleshoot them. Improper servicing can result in serious damage to the compressor, and incorrect problem diagnosis can result in unnecessary replacement task.

WHAT YOU WILL LEARN

- **Identify and describe the operation of various compressor types.**
 - Identify and describe the operation of reciprocating compressors, various hermetic & semi-hermetic compressors, rotary compressors, scroll compressors, screw compressors & centrifugal compressors.
- **Identify and describe various approaches to compressor capacity control.**
 - Identify and describe capacity control methods for reciprocating and scroll compressors.
 - Identify and describe capacity control methods for screw and centrifugal compressors.
- **Describe common compressor failures.**
 - Describe compressor failures related to the refrigerator circuit.
 - Describe compressor failures related to electrical issues.
- **Identify and explain the operation of various compressor protection devices.**
 - Identify and explain the operation of various overload devices.
 - Identify and explain the operation of other compressor protection devices.
- **Explain how to analyze the operation of a hermetic compressor.**
 - Explain how to evaluate the mechanical operation of an operable compressor.
 - Explain how to evaluate the electrical operation of an operable compressor.

8 HOUR PROGRAM



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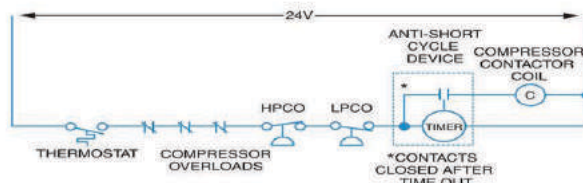
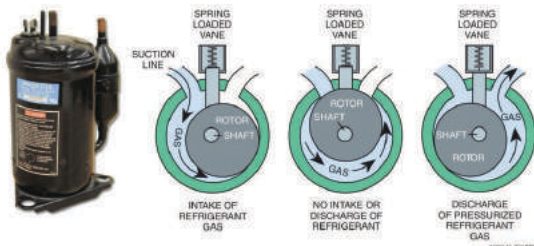


BEFORE



AFTER
(POSITIVE RESULT)

REPROD. PERMITTED



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REFRIGERANTS & DEVICES

COURSE DESCRIPTION

This seminar discusses the refrigerants and oils used in modern refrigeration and air conditioning systems. Today, new technologies and stringent environmental laws are driving changes in the HVAC industry. Older refrigerants that damage the environment are being phased out and replaced with more environmentally-friendly refrigerants. These new refrigerants often require new compressor lubricating oils. These modern refrigerants and oils also have new handling and service requirements with which technicians must be familiar. This seminar will be HANDS-ON.

WHAT YOU WILL LEARN

- **Identify the various applications that require specific refrigerant characteristics**
 - Identify the various applications that require specific refrigerant characteristics
- **Identify various refrigerant classifications**
 - Identify and describe compounded and blended refrigerants
 - Identify the safety classifications of refrigerants
- **Explain how to use pressure-temperature (P-T) charts to calculate superheat and subcooling**
 - Explain how to use P-T charts for compound, azeotropic, and near-azeotropic refrigerants to calculate superheat and subcooling
 - Explain how to use P-T charts for zeotropic refrigerants to calculate superheat and subcooling
- **Describe the important issues related to the function of lubricating oils in the refrigerant circuit**
 - Identify the important characteristics of refrigerant oils.
 - Identify mineral-based and synthetic oils.
 - Describe issues related to the movement of oil through the refrigerant circuit.
 - Describe the various types and sources of oil contamination.
 - Describe common practices associated with handling, charging, and removing oils
- **Explain the considerations related to various refrigerant conversion processes**
 - Identify issues of concern for all refrigerant conversions
 - Describe common practices related to popular refrigerant conversions

8 HOUR PROGRAM



SATURDAY

8:00 AM - 4:00 PM

**Location: 65 Elm Street
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Temp (°F)	Pressure (psig)	Temp (°F)	Pressure (psig)	Temp (°F)	Pressure (psig)	Temp (°F)	Pressure (psig)
-100	1.0	-100	1.0	-100	1.0	-100	1.0
-90	1.0	-90	1.0	-90	1.0	-90	1.0
-80	1.0	-80	1.0	-80	1.0	-80	1.0
-70	1.0	-70	1.0	-70	1.0	-70	1.0
-60	1.0	-60	1.0	-60	1.0	-60	1.0
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480	1.0	480	1.0	480	1.0	480	1.0
490	1.0	490	1.0	490	1.0	490	1.0
500	1.0	500	1.0	500	1.0	500	1.0

INTRODUCTION TO HEATING

COURSE DESCRIPTION

Most homes have some type of heating. Installing and servicing furnaces is a big responsibility. Because flame and combustible fuels are involved, there is a potential for fire or explosion types of equipment for heating shall be installed by manufactures instructions, and periodically inspected and serviced by qualified technicians, they will operate satisfactorily for many years.

WHAT YOU WILL LEARN

- **Explain the fundamental concepts of heating and combustion.**
 - Describe the heat transfer process.
 - Identify gas fuels and their combustion characteristics.
- **Describe the role of forced-air gas furnaces in residential heating.**
 - Describe the types of gas furnaces and how they operate.
 - Identify and describe the equipment and controls used in gas furnaces.
 - Describe the basic installation and maintenance requirements for gas furnaces.
- **Describe hydronic and electric heating systems**
 - Describe the operation of hydronic heating systems.
 - Describe the operation of electric heating equipment.
- **Describe how to troubleshoot the components related to gas heating**
 - Describe the control circuits and typical sequence of operation of various gas heating units.
 - Describe the operation & troubleshooting process for thermocouples.
 - Describe the operation & troubleshooting process of ignition devices.
 - Describe the operation & troubleshooting process for flame sensors.
 - Identify common problems associated with system airflow.

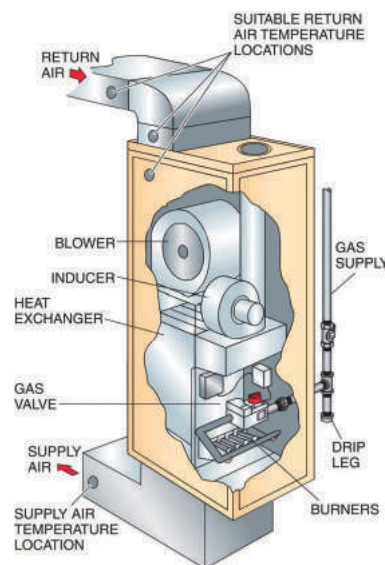
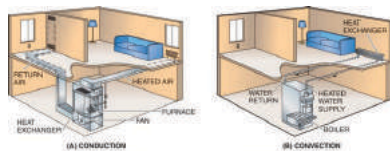
8 HOUR PROGRAM



SATURDAY

8:00 AM - 4:00 PM

**Location: 65 Elm Street
Copiague, NY 11726**



SOFT SKILLS

COURSE DESCRIPTION

This seminar teaches the skills of making a good first impression and communicating with customers in a positive way. It also covers the three primary elements of a service call: the opening; performing the service; and the closing. Also is needed is to become an effective crew leader. This seminar will help a crew leader who wants to become more effective, as well as a crew member who aspires to become a crew leader.

8 HOUR PROGRAM



SATURDAY

8:00 AM - 4:00 PM

**Location: 65 Elm Street
Copiague, NY 11726**

WHAT YOU WILL LEARN

- **Explain the service technician's role in customer relations.**
 - Explain how personal habits, behaviors, and attitudes affect customer relations
 - Explain how to properly communicate with customers
- **Describe basic conduct required for a service call**
 - Describe how to conduct the three phases of a service call
 - Describe ways to handle challenging customer situations
- **Describe the role of a crew leader.**
 - List the characteristics of effective leaders
 - Be able to discuss the importance of ethics in a supervisor's role
 - Identify the three styles of leadership
 - Describe the forms of communication
 - Describe the four parts of verbal communication
 - Describe the importance of active listening
 - Explain how to overcome the barriers to communication
 - List ways that leaders can motivate their employees
 - Explain the importance of delegating and implementing policies and procedures
 - Distinguish between problem solving and decision making



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HVAC SYSTEMS AREN'T THE ONLY THING THAT BLOWS HOT AND COLD



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SEMINAR DETAILS

Attendee Pricing

- The pricing for the classes will be as follows:
- MACC Member Attendees- \$199 per class
- Non-Member Attendees- \$299 per class

Class Size

- Maximum 12 people per class. Seating is be limited so register now!

Location

- The classes will all be held at the
Electrical Training Center, 65 Elm Street, Copiague, NY 11726
- For directions visit www.electricaltrainingcenter.edu

Additional Details

- All attendees will receive class specific books and literature, covering the topics discussed in the class.
- Hands on training
- Continental breakfast and lunch included

SEATING IS LIMITED PLEASE REGISTER NOW

**TO REGISTER FOR COURSES PLEASE
VISIT WWW.MACCNY.ORG
OR CONTACT THE MACC OFFICE
AT 516-922-5832 OR AT INFO@MACCNY.ORG**

**For additional information and to enroll
Please contact the MACC Office
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