Training Catalog

NAPE
EDUCATIONAL FOUNDATION
HANDS-ON EDUCATION FOR BUILDING ENGINEERS

Administrative Offices:
5520 Cherokee Ave • Suite 250 • Alexandria, Virginia 22312
Tel: 703.845.7055 • Fax: 703.845.7059

View current schedule and register online @ www.napeef.org

Catalog Contents

NAPEEF

Technical Courses

Certification Programs

For each class a student passes, a certificate of completion is given. In addition to those, NAPE Educational Foundation offers four certification programs. Only one course taken at another school will be accepted, and a substitute NAPEEF course must be taken for the certification. The copyrighted titles are the General Certificate of Engineering (GCE), General Certificate of Air Conditioning and Refrigeration (GCAR), the General Certificate of Electrical Proficiency (GCEP), and the Certified Supervising Engineer (CSE). *See page 9 for details.*

Deadlines for submitting applications for these certificates are November and May. See current Course Schedule for specific dates. Applications are available in the office.

We are located in Maryland, Virginia and Washington DC

Alexandria, VA (AL): Classes are held at 5520 Cherokee Ave, Alexandria, VA 22312.
Greenbelt, MD (GR): Classes are held at 7213 Hanover Parkway, Greenbelt, Maryland 20770.
Washington, DC, NW (DC): Classes are held at 1122 Connecticut Ave, NW, Washington, DC 20036.

Entry Level Maintenance

Ready 2 Work - Engineering Kick-Start Program
60 hrs

This new Ready 2 Work Engineering Kick-Start Program designed to provide you with the training you need to get started in this exciting career as an entry-level building engineer. This course will cover Career Outlook & Professionalism, Electrical and Building Maintenance, HVAC, Plumbing, Fire Alarm & Life Safety and more. A job fair will be included to help you put your training to use after you have successfully completed Ready 2 Work.

See www.napeef.org for current course schedule for times, dates and locations.

Plant Equipment and Operations
30 hrs

This course provides the student with a basic understanding of operation and maintenance of heating systems, air conditioning systems and auxiliary equipment. The student will also learn the boiler operation and Air Conditioning systems - with setting up daily, monthly, and yearly preventive maintenance schedules for equipment. Other topics that will be included: Air handlers, pumps, towers, air compressors and other auxiliary equipment.

See www.napeef.org for current course schedule for times, dates and locations.

Boiler Operations

Low Pressure Boilers
56 hrs

This is a beginner's class for those with one year or less experience who wish to get some general knowledge of steam and hot water heating systems. This provides the basic information to put you on the road to becoming a licensed engineer. This is not a prep course for the 6th Class license as it doesn't go over the questions you'll find on the exam, although it may be useful before testing for the license. Course Curriculum Covers: boiler room safety; boiler fittings; boiler room terminology; feed water accessories; fuel oil systems; combustion accessories; feed water systems; draft systems; water treatment; steam systems/boiler operations. Intermediate English skills required.

See www.napeef.org for current course schedule for times, dates and locations.

High Pressure Boilers/3rd Class Steam
60 hrs

Completion of a Low Pressure Boiler Course, or the DC 6, MD 3, or NIULPE 3 License is required. *This curriculum is based on selected study materials for the DC Licensing Exam. Because the DC 3rd class test covers more than just steam, this course is not advertised as a prep course, but it focuses on the exam. Course Curriculum Covers: High pressure boilers; boiler fittings; water treatment; fuels & firing equipment; pumps; steam engines; automatic boiler control; boiler operation/maintenance and duplex pumps.*

See www.napeef.org for current course schedule for times, dates and locations.

Course Selection, Prerequisites & Cancellations

Students should select courses based on their interests, any requirements for jobs, and their level of experience. The sequence of courses in each of the certificate programs should provide some guidance to choosing which classes to take (more info on page 9). Entry-level students should consider starting with either Ready to work, Principles of Electricity, Low Pressure Boilers or Air Conditioning I. Prerequisites for courses are important and are listed in the description of each class. The registration form includes a space to list courses that meet the prerequisites.

Students who don't fulfill the prerequisites will be obligated to complete the required classes before continuing. If a student wants to cancel their registration for a class, they have until a week prior to the start date to notify us for a full refund. Otherwise, there will be a $100 Late Cancellation Fee.

SCHOLARSHIP: A scholarship for the four courses in the General Certificate of Engineering is awarded on a yearly basis in January. The office has applications.

REGISTRATION: AVOID DISAPPOINTMENT -REGISTER EARLY
Each registration must be submitted with payment (VISA, MasterCard, Discover, and AmEx) or with an approved Purchase Order (PO) number and can be mailed, faxed or brought to the office. All non-purchase order registrants must be paid before the first night of class.

Visit www.napeef.org to Register for Courses!

Electrical

Principles of Electricity
36 hrs

No prerequisites required. *In this beginner's course the topics that will be covered are the basic elements of circuitry, safety rules, understanding of the terminology & simple mathematical calculations. It prepares the student for all other aspects of engineering. This course is designed to allow the student to progress directly to our Electrical Systems, Code and Theory course. This is not a wiring class.* This course is required for all NAPEEF electrical classes. Basic English and math skills required.

See www.napeef.org for current course schedule for times, dates and locations.

Electric Motors
30 hrs

Completion of the Principles of Electricity course is required. *This course will focus on single phase and three phase A/C motors. How motors start and run, electromagnetism, and practical applications of induction type, split phase and capacitor type motors will be covered.* Basic English and Math skills required.

See www.napeef.org for current course schedule for times, dates and locations.

Electrical Systems, Code & Theory
56 hrs

Completion of the Principles of Electricity course is required. *This intermediate-level course focuses on electrical principles & components, inductance & capacitance, motors and motor starters, measuring instruments and their use; single and three phase fundamentals, various in-class exercises; safety; alternating current characteristics; and electrical formulas & their applications. This course will also explore and clarify updated code information.* Intermediate English Skills Required

Please note: This is not a wiring class. As time permits there may be some hands-on exercises.

See www.napeef.org for current course schedule for times, dates and locations.

Schematics
30 hrs

Completion of Principles of Electricity course is required. *Before taking this course, it is necessary to have a basic understanding of A/C & electrical components and how they apply to HVAC. The curriculum in this course includes; wiring, diagrams, symbols, legends, walk through and troubleshooting of ladder wiring diagrams for control circuits.* Basic English skills required.

See www.napeef.org for current course schedule for times, dates and locations.

Certification Program

The NAPEEF Certificate Program requires students to successfully complete a series of NAPEEF classes in order to qualify for each certificate in the program. These classes have been developed to provide the technical expertise needed to effectively work and advance within the building operations and maintenance profession, and to provide assurance to employers of a level of competency. The specific courses required for each Certification may be found on Page 9.

Air Conditioning

Air Conditioning I - Introduction

56 hrs (includes 1 weekend lab - 6 hrs)

This entry-level course concentrates on basic refrigeration circuits up to 20 ton package and split systems - air and water cooled. The goal is for students to develop a basic understanding of the refrigeration cycle and its components. Students are required to attend one weekend lab session. Intermediate English skills are required.

All A/C I students are required to attend 1 day of lab in Alexandria, VA on a weekend.

See www.napeef.org for current course schedule for times, dates and locations.

Air Conditioning II - Troubleshooting

56 hrs (includes 2 weekend labs - 6 hrs each)

Completion of Air Conditioning I – Introduction course is required. *This course will cover step by step methods of analyzing why a system will not run or is inefficient. Procedures are taught in service person's language. Electrical/Mechanical problems & solutions are covered. The textbook is the same as A/C I. Students are required to attend two separate lab sessions that are held on different weekends.* Intermediate English skills required.

All A/C II students are required to attend 2 days of Lab in Falls Church or Gaithersburg on weekends.

See www.napeef.org for current course schedule for times, dates and locations.

Air Conditioning III - Operations and Management

56 hrs

Completion of Air Conditioning I, II, and Heat Pump courses is required. *This course will focus on large commercial systems including, but not limited to: The study of Psychometrics, Air & Water balancing, Heat load calculations, Chiller Systems, Chiller simulation w/ hands-on experience, understanding VAV operation, and EMS electrical savings. As well as a review of plant operations, Pumps & Cooling towers, Heat Pumps, and Troubleshooting Gas & Oil.* Intermediate English skills required.

See www.napeef.org for current course schedule for times, dates and locations.

Heat Pumps

56 hrs

Completion of Air Conditioning I and Air Conditioning II classes is required. *This course specifically covers heat pump operation cycle & efficiency, compressors and motor controls, refrigerant controls, reversing valves, air/water coils, supplemental heat, defrosting cycles, service/troubleshooting, and wiring diagrams.* This course is required to take Air Conditioning III. Advanced English skills required.

See www.napeef.org for current course schedule for times, dates and locations.

Refrigeration

56 hrs

Completion of Air Conditioning I and Air Conditioning II courses is required. *This course will concentrate on commercial refrigeration and ice machines. Course will cover installation and service of walk-ins, reach-ins, and ice machines as used primarily in the food service industry & in retail stores.* Intermediate English skills required.

See www.napeef.org for current course schedule for times, dates and locations.

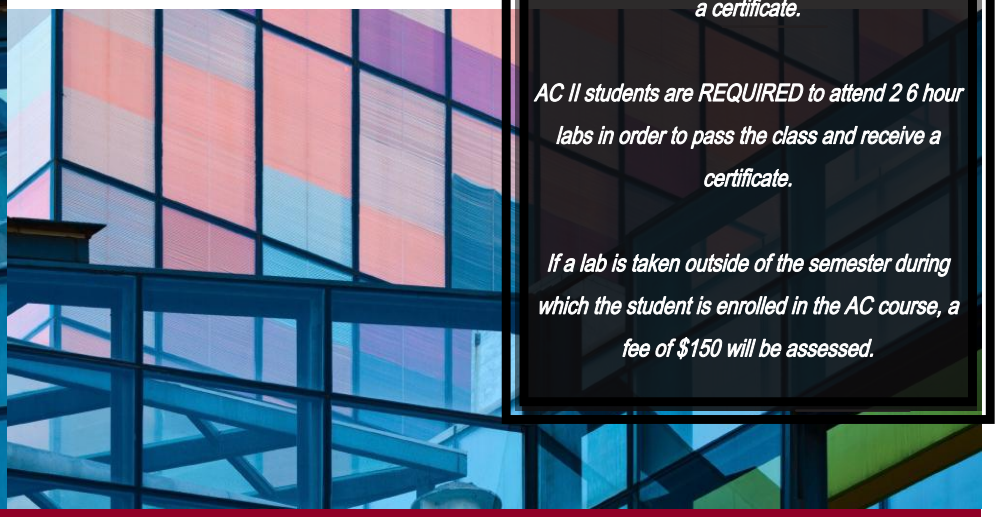
Air Conditioning Labs

These labs are the "hands on" component of our program. Most labs are held on weekends. Instructors also use the labs during regularly scheduled classroom hours.

Students in AC I are REQUIRED to attend six hours of lab in order to pass the class and receive a certificate.

AC II students are REQUIRED to attend 2 6 hour labs in order to pass the class and receive a certificate.

If a lab is taken outside of the semester during which the student is enrolled in the AC course, a fee of $150 will be assessed.



Controls

Controls I - Basic

56 hrs

Completion of Principles of Electricity and Air Conditioning I is required. *This course will explain how basic building operations and HVAC systems relate to control systems and its components. Other specific subjects that will be included are on-off control switching, control strategies, control methods, and control components. Terminology will also be covered in the curriculum, along with psychometrics, input and output measuring methods, and control logic.* Basic English and Math skills required.

See www.napeef.org for current course schedule for times, dates and locations.

Management

The Managing engineer

45 hrs

This course is recommended for individuals who have several years in the field and desire to learn the many aspects of a supervisor's fiduciary duties and responsibilities that they will encounter as a Managing Engineer. This course will provide the student with an understanding & introduction to the tools, management skills, objectives, and general knowledge & understanding a supervisor needs to become an effective manager and leader. The course curriculum also covers the following: Business Writing (reports and email communication), Project Management, Organizational Skills, and Crisis Management. The course expands the student's knowledge of Word and Excel.

Using Excel, students will create a budget for a building, including equipment and costs. This exercise challenges the students to generate a 5-year budget forecast that differentiates between a general operating budget and a Capitol Project budget. This course covers the interview process for both the interviewer and the interviewee. Students will improve their interpersonal skills for internal and external customer service. The class curriculum closes with a video presentation on a subject selected by the student and presented to their fellow classmates. This project provides the student with an understanding of the skills that are needed to conduct meetings, give presentations, and speak in public. Advanced English skills in verbal and written communication are a requirement. This course is required to receive the Supervising Engineer Award.

See www.napeef.org for current course schedule for times, dates and locations.

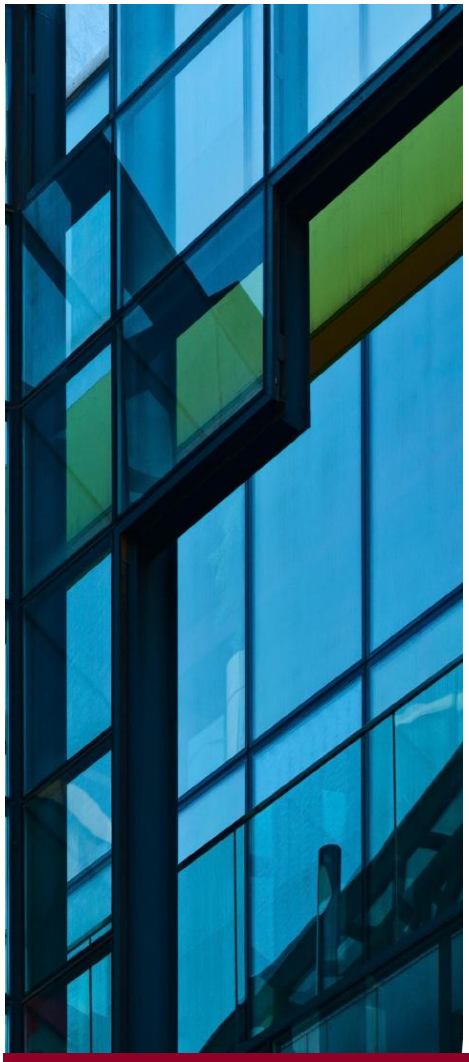
Miscellaneous

Blueprint Reading

30 hrs

No prerequisites required. *This course provides information on reading and interpreting building plans and specifications. The different types of drawings, details, symbols, and schedules will be covered. Upon course completion, students will be able to understand the drawings and schematics for their buildings, which will help increase their ability to communicate with contractors, architects and management.* Intermediate English skills required.

See www.napeef.org for current course schedule for times, dates and locations.



License Preparation and Contact Information

Virginia Journeyman and Master Mechanical

45 hrs

A review for air conditioning, heating, sheet metal, and plumbing mechanics preparing for VA Journeyman or Master Mechanical License exams. For license information call (804) 367-8500. Virginia and Maryland licenses are now reciprocal.

Contact Information:

See www.napeef.org for current course schedule for times, dates and locations.

NIULPE TESTS: DC BOARD

For information on the NIULPE program, including test dates and fees, contact Donnie Peters, Chairman, DC NIULPE Board.
E-mail: dpeters@capitolboilerworks.com Website: www.niulpe.org.
Phone: (703) 501-6588

STATE OF MARYLAND LICENSE BOARD

For information, call 410-230-6163. The MD Board is making significant licensing policy changes.
https://www.dllr.state.md.us/contactinfo/

DC LICENSING BOARD

For information, call 202-442-4459.
http://www.pearsonvue.com/dc/engineers/

STATE OF VIRGINIA

For information, call (804) 367-8500.
http://www.dpor.virginia.gov/ProfessionsAndOccupations/

BOMI International

For information, call 1.800.235.BOMI (2664).
http://www.bomi.org/

GREEN BUILDING CERTIFICATION INSTITUTE

For information call 1-800-795-1746

LEED-GA Prep Seminar - 16 hrs.

16 hours of instruction; Practice Examinations; LEED Credit Categories; study methods; exam preparation.

The LEED Green Associate (LEED-GA) credential is intended for professionals who want to demonstrate Green Building expertise in non-technical fields of practice. The Green Building Certification Institute (GBCI) has created this credential, which denotes basic knowledge of green design, construction and operations. Applications and fees for the LEED-GA examination are conducted through GBCI.

Completion of this seminar is required for the Certified Supervising Engineer (CSE) Certificate.

Tests

CFC Seminars and Test

The seminar is split into four sessions with the test being on the last class. In this EPA approved program, the topics that will be included are the CFC containment methods, any updated legal requirements, existing and new refrigerants, and basic understanding of the refrigeration cycle and the system's components.

See www.napeef.org for current course schedule for times, dates and locations.

CFC Test/Retest Only

NAPEEF is a certifying organization for the EPA Technician Certification exam in accordance with Section 608 of the Clean Air Act.

Dates: Test sessions at 2:00pm: Call 703-845-7055 for current testing schedule.

No PO#'s accepted for payment. Pre-registration is preferred, but same day registration no later than 1:00pm is allowed.

Fee: 1st Test $90, Retest $70 (if last test taken within three months)

Seminars

R410-A Refrigerant Seminar and NAPE 410-A Certification - *6 hrs*

Prerequisites: CFC Universal & Air Conditioning I. *This one-day seminar includes characteristics of 410-A; servicing; installation; disposal; cylinders, evacuation requirements, safety, etc. The seminar is an exam preparation for NAPE's 410-A Certification test, which is administered at the end of the seminar.* R-410 A Certification is required for the GCAR Certificate.

See www.napeef.org for current course schedule for times, dates and locations.

HVAC Preventive Maintenance Seminar - *6 hrs*

Prerequisites: Participants must have completed or be currently enrolled in Air Conditioning II. *This seminar is designed for HVAC technicians working in a building or on a service truck. Learn the PM procedures to be followed when a technician arrives at a property, commercial or residential. Minimize operating costs and repairs. Learn best practices for a PM to maximize equipment life and satisfy office personnel or customers. Participants will fill out a check list for the customer or to remain at the property with system information and readings. Upon completion, attendees will be able to perform a first-rate HVAC PM.*

See www.napeef.org for current course schedule for times, dates and locations.

HVAC Electrical Wiring Seminar - *6 hrs*

Prerequisites: Participants must have completed or be currently enrolled in Air Conditioning I. *This one-day hands-on seminar will enable students to understand the wiring in a basic air conditioning/ heating unit. Participants will wire a basic HVAC system on paper and discuss the operation of all related components. Students will develop their own wiring diagram and convert it into a ladder diagram. Upon completion of the paper exercise, actual components will be wired on a simulator board. When properly wired, all board components will function as they would in an HVAC system. The components studied and wired will include relays, contractors, condenser and evaporator fan motors, compressor, time delays, etc.*

See www.napeef.org for current course schedule for times, dates and locations.

Air Conditioning "Hands-On" Troubleshooting Tips and Techniques - *8.5 hrs*

Prerequisites: Participants must have completed or be currently enrolled in Air Conditioning I. *This one-day workshop is designed to enhance the troubleshooting skill sets of the participants to save time when encountering an air conditioning unit that is not operating at full capacity. The seminar will begin with a review of the basic AC components and their effect on superheat, sub-cooling, and operation of the HVAC unit. Each component and its operation will be explored, including the potential for possible causes of failure/malfunction. Alternating with classroom discussions, participants will work in the AC laboratory, providing an opportunity to directly apply their new knowledge and skills.*

See www.napeef.org for current course schedule for times, dates and locations.

Certifications

General Certificate of Electrical Proficiency©

For All Career Engineers

Required NAPEEF Courses

- ✓ *Principles of Electricity*
- ✓ *Electric Motors* **
- ✓ *Electrical Systems, Code and Theory* **
- ✓ *Schematics* **

** *Note: Some courses may require prerequisites. See course description for more information.*

General Certificate of Air Conditioning and Refrigeration©

For All Career Engineers

Required NAPEEF Courses

- ✓ ***Principles of Electricity***
- ✓ *AC I* **
- ✓ *AC II* **
- ✓ *AC III* **
- ✓ *Heat Pumps* **
- ✓ *Refrigeration* **
- ✓ *CFC Universal**
- ✓ *R 410-A Certification*

* *Note: Holding a CFC Universal from an EPA approved program is required.*

** *Note: Some courses may require prerequisites. See course description for more information.*

General Certificate of Engineering©

For All Career Engineers

Required NAPEEF Courses

- ✓ ***Principles of Electricity***
- ✓ *Low Pressure Boilers*
- ✓ *AC I* **
- ✓ *Electrical Systems, Code and Theory* **
- ✓ *Controls I* **

** *Note: Some courses may require prerequisites. See course description for more information.*

Certified Supervising Engineer©

For Chief/Lead Engineers

Required NAPEEF Courses

- ✓ *Principles of Electricity*
- ✓ *AC III* **
- ✓ *Heat Pumps* **
- ✓ *The Managing Engineer*
- ✓ *Controls* **
- ✓ *Blueprint Reading*
- ✓ *Electrical Systems Code and Theory* **
- ✓ *Schematics* **
- ✓ *High Pressure Boilers* **
- ✓ *LEED-GA*

** *Note: Some courses may require prerequisites. See course description for more information.*

Only one course taken at another school will be accepted, and a substitute NAPEEF course must be taken for certification.

Visit www.napeef.org to Register for Courses!

NAPEEF Courses

REGISTER ONLINE @ www.napeef.org

(703) 845-7055 • Fax: (703) 845-7059

Class ID#_____ Class Name:_____ Location:_____ Start Date:_____

Have you completed the required course? ◯Yes ◯No Name of Course: _____

For complete description and requirements for all courses please refer to our catalog online.

Date of Birth (xx-xx-xxxx):_____ Home Phone: _____

First name:_____ MI:____ Last Name:_____ Mobile: _____

Home Address:_____ Service Provider: _____

City:_____State:_____Zip:_____ Work Phone: _____

Current DC #1 Member: ◯Yes ◯No Member # _____ E-mail: _____

Have you taken any courses before? ◯Yes ◯No Job Title: _____

PAYMENT INFORMATION Confirmation will not be provided. Notice will be provided if class is full or there is a change.

Purchase Order Information

Company Account Number: _____

Company Name:_____

Company Billing Address:_____

City:_____State:_____Zip:_____

PO#:_____Amount To Be Billed: _____

*** Book Included ◯Yes ◯No**

Name and Phone of person certifying Purchase Order information is correct:
(Please Print)

Name: _____

Work Phone:_____

E-Mail:_____

Payment Information

Student Account Number: _____

Card Number:_____

Expiration Date: ___/___Amt. Billed: _____

CVV:_____ Name: _____

Check/Cash Payment: (please check)

_____Cash _____Check

Check #:_____Amt. Paid: _____

IMPORTANT: PAYMENT INSTRUCTIONS
Please either return a copy of our invoice or include our account number or student's name with payment.
For special billing instructions, call Jagath at 703-845-7055 between 8 and 3 Monday through Friday.

NAPE DC #1 MEMBER TUITION: Although membership in NAPE is not required to enroll in classes, individual members of any NAPE Chapter are entitled to a lower tuition. Each course has a member & non- member price. **There is a considerable discount for active members.** We are encouraging students to become members and to be active in a local Chapter of NAPE, the oldest engineering society in America. Membership due is $190 yearly. Corporate Members are entitled to one tuition discount.

***CLASS REFUND POLICY:** A full tuition refund will be made if cancellation is made prior to the first scheduled class. Cancellations made prior to the 2nd scheduled class will be entitled to the full tuition refund less a $25.00 administration fee. ALL CANCELLATIONS MUST BE MADE IN WRITING. NO REFUNDS WILL BE MADE AFTER THE SECOND SCHEDULED CLASS. **BOOKS CANNOT BE REFUNDED.** A course may be cancelled due to low enrollment.

ATTENDANCE & GPA: Students must meet attendance & GPA (70) requirements. Attendance requirement: one unexcused absence is allowed for 30 hours courses, and two unexcused absences are allowed for 45-57 hours courses. It is the student's responsibility to talk with their instructor regarding any missed work. Any classes missed due to inclement weather can be made up by extended hours on scheduled class night or scheduling additional classes on another night. A certificate will not be issued if a student has missed more than the allowed number of classes, regardless of the GPA.

Lab sessions are mandatory for ACI and ACII in order to pass. Missing a Lab counts as an absence and must be made up. No shows for labs will be charged $150.00. Please note: most labs are held on designated Saturdays during the day.

I HAVE RECEIVED, READ AND UNDERSTAND THE NAPEEF ATTENDANCE POLICIES AND I WILL INFORM MY EMPLOYER OF THESE POLICIES.

Signature:_____Date:_____

Office Use Only	Date/ Received By _____ Date/Entered By: _____