

ARIZONA HEAT PUMP COUNCIL

SPRING 2017

⊕ Master Heat Pump
Technician Program

⊕ HVAC System
Consultant Series

⊕ Commercial
Technician Series

CONTINUING EDUCATION PROGRAM



edu.elaz.org
Phone: 602.263.0115
Fax: 602.274.0029

The Arizona Heat Pump Council is in the Same Business You Are.

The Arizona Heat Pump Council is part of the Electric League of Arizona (ELA) founded in 1960. The Council is an active group of professionals who are committed to increasing the use and efficiency of heat pumps in Arizona. Each member has agreed to respond to consumers within 15 minutes of an inquiry received on our "hot line" telephone number. This referral program provides consumers with a fast and efficient response to their needs and supplies Council members with quality sales and service referrals. Call 602-263-9391 for more information about joining the Electric League of Arizona and one of its consumer councils.

Educational Opportunities

Individual Course Offerings: Expand your knowledge and increase your skills by taking the courses necessary to complete your objectives. Each course earns four continuing education credits with the Arizona Heat Pump Council.

Series Programs: Enhance your resume by completing one of the two series programs, the Master Heat Pump Technician Program or the HVAC System Consultant Series.

H.I.P. Referral Program Education Requirements

To maintain an active status in the H.I.P. Referral Program, the following requirements apply:

- **Each company must accrue a minimum of eight continuing education credits (2 classes) during each semester (Spring & Fall).** Contractors may select various employees to attend courses based on their specific needs. More than one person may attend the same class to receive credit as long as a passing grade of "C" or better is earned. When registering by mail, fax or online, you are committing to attend the designated classes and therefore are eligible to participate in the referral program.
- Payment is due at time of registration.
- Class size is limited and is filled on a first-come, first-serve basis. Please register early to avoid disappointments.
- Attendance is taken at each session and students are required to attend all dates. It is the responsibility of the student to sign in. Failure to sign in will result in no credit.

Business & Non-Technical Courses

These courses are designed for office support individuals, owners, technicians and anyone interested in increasing their knowledge in the specific area.

HPC 126 Refrigeration Fundamentals

Date: January 18, 2017 Fees: \$144 Non-Members/\$114 Members/\$57 APS Qualified Contractor Rate
Time: 6:00pm - 9:30pm Credits: 4 Continuing Education Credits/3.5 NATE Continuing Education Hours
Instructor: Robert MacPherson Location: ELA Training Center, 2702 N. 3rd Street, Suite 2020, Phoenix, AZ 85004



What You Can Expect: This class covers all the fundamentals of refrigeration and is highly recommended to take prior to the popular Refrigeration Theory & System Diagnosis.

Who Should Attend: This is a great class for beginning technicians and non-technical staff but is also highly recommended for anyone wanting to brush up on their refrigeration knowledge.

HPC 152 Delivering Professional Service

Date: April 18, 2017 Fees: \$134 Non-Members/\$104 Members/\$52 APS Qualified Contractor Rate
Time: 6:00pm - 9:30pm Credits: 4 Continuing Education Credits/3.5 NATE Continuing Education Hours
Instructor: Carl Bartoli Location: SRP Pera Club, 1 E. Continental Drive, Tempe, AZ 85281



What You Can Expect: This class is designed to create a professional service technician, who can deliver a consistent level of service that exceeds your customer's expectations and creates a loyal customer. Learn correct invoice writing, how to market repairs or replacements in a positive way, and how quality service can overcome price objections.

Who Should Attend: Principals, supervisors & technicians who want to deliver a higher level of service and create a more professional service technician and provide a professional service experience for their customer.



Master Heat Pump Technician Program

The Master Heat Pump Technician Series (MHPTS) is designed specifically for the technician who is seeking to gain the skills and certification to take them to the next level in their career. Technicians completing this seven-course program with a "B" or better become Master Heat Pump Technicians and earn a patch to proudly display on their uniforms. All seven courses (HPC 101-107) are offered each semester. We strongly recommend courses be taken in the order they are outlined. **A one time certificate fee is required – see Course Registration Form to register.**

HPC 101 Refrigeration Theory & Systems Diagnosis

Dates: January 23 & 25, 2017 Fees: \$150 Non-Members/\$120 Members/\$60 APS Qualified Contractor Rate
Time: 6:00pm - 9:30pm Credits: 4 Continuing Education Credits/7 NATE Continuing Education Hours
Instructor: Rich Porter Location: ELA Training Center, 2702 N. 3rd Street, Suite 2020, Phoenix, AZ 85004



Note: Included with this class is a Super Cool Slide Rule.

What You Can Expect: This course will review mechanical refrigeration theory and system troubleshooting. The four basic components, reversing valves, superheat, sub-cooling, sensible heat, latent heat and BTU's are all reviewed. This course will focus on heat pump operation and diagnosis. If you do not have service experience and/or refrigeration training, **Refrigeration Fundamentals** is a recommended prerequisite.

Who Should Attend: This class is designed for those wanting to master the heat pump refrigerant system. Technicians of all levels will benefit from this course. This course is also part of the Master Heat Pump Technician program.

HPC 102 Charging, Piping, and Dehydration

Dates: February 2, 7 & 9, 2017 Fees: \$170 Non-Members/\$140 Members/\$70 APS Qualified Contractor Rate
Time: 6:00pm - 9:30pm Credits: 4 Continuing Education Credits/10 NATE Continuing Education Hours
Instructor: Joel Harris Location: SRP Pera Club, 1 E. Continental Drive, Tempe, AZ 85281



What You Can Expect: Did you know factory studies of failed compressors show that a large amount of compressor failures are caused by improper refrigerant levels? This is not a well-known fact in our industry. Refrigerant charge imbalances cause slow degradation of the compressor bearings, valves and motor windings. This results in compressor failures occurring some time after the charge becomes unbalanced, making the connection between refrigerant levels and malfunctions difficult. Improper piping and contaminants are also big offenders.

Who Should Attend: Technicians of all experience levels will benefit from this course. This course is also part of the Master Heat Pump Technician program.

HPC 103 Electrical Fundamentals for Heat Pumps

Dates: February 14 & 16, 2017 Fees: \$144 Non-Members/\$114 Members/\$57 APS Qualified Contractor Rate
Time: 6:00pm - 9:30pm Credits: 4 Continuing Education Credits/7 NATE Continuing Education Hours
Instructor: Carl Bartoli Location: SRP Pera Club, 1 E. Continental Drive, Tempe, AZ 85281



What You Can Expect: This class will focus on basic electricity as it pertains to heat pump operations. Topics to be covered include basic electron theory, electromagnetism and PSC motor theory. You will understand how compressors run and start systems work. Having an understanding of capacitor and potential relay operation on an electron level can help the service technician diagnose and avoid malfunctions that are commonly overlooked.

Who Should Attend: Technicians of all experience levels will benefit from this course. This course is also part of the Master Heat Pump Technician program.

HPC 104 Control Systems for Heat Pumps

Dates: February 21 & 23, 2017 Fees: \$144 Non-Members/\$114 Members/\$57 APS Qualified Contractor Rate
Time: 6:00pm - 9:30pm Credits: 4 Continuing Education Credits/7 NATE Continuing Education Hours
Instructor: Carl Bartoli Location: ELA Training Center, 2702 N. 3rd Street, Suite 2020, Phoenix, AZ 85004



What You Can Expect: Participants will attain the knowledge to design an entire electrical system for a residential heat pump. You will also learn the theory of operations and diagnostics of heat pump control circuitry including calibration and testing of common brands of thermostats, cooling and heating anticipation circuits, and commonly used electromechanical and electronic defrost systems.

Who Should Attend: HVAC technicians who want a better working knowledge of heat pump controls. This course is also part of the Master Heat Pump Technician program.

HPC 105 Customer Service & Selling Skills

Date: February 8, 2017 Fees: \$144 Non-Members/\$114 Members/\$57 APS Qualified Contractor Rate
Time: 6:00pm - 9:30pm Credits: 4 Continuing Education Credits/3.5 NATE Continuing Education Hours
Instructor: Rich Porter Location: ELA Training Center, 2702 N. 3rd Street, Suite 2020, Phoenix, AZ 85004



What You Can Expect: What is the importance of quality service? How do you provide it? This real-world customer service program will help you develop the techniques to provide top quality service. Win with customers when they are angry or complaining. Listen and learn about what your customer needs. Do you know when to service and when to sell? There comes a time when it is no longer in your customer's best interest to repair the HVACR equipment any longer. Learn how to make your customer's lives better, educate the customer and arouse their interest; provide additional information and benefits, and offer maintenance agreements and/or new equipment.

Who Should Attend: This course is geared specifically to the HVAC service technician. This course is also part of the Master Heat Pump Technician program.

HPC 106 HVAC Code & Safety

Dates: Feb. 27 & March 1, 2017

Time: 6:00pm - 9:30pm

Instructor: Tim Williams



Fees: \$204 Non-Members/\$174 Members/\$87 APS Qualified Contractor Rate
Credits: 4 Continuing Education Credits/7 NATE Continuing Education Hours
Location: ELA Training Center, 2702 N. 3rd Street, Suite 2020, Phoenix, AZ 85004

Note: Included in this class is a copy of the current **2015 International Mechanical Code**.

What You Can Expect: This class is designed to make you more comfortable with the International Mechanical Code. In this interactive class, popular code issues and interpretations will be discussed. Come prepared to discuss your personal experiences with the Code.

Who Should Attend: Principals, supervisors and technicians who want a practical insight on code and safety in the mechanical trade. This course is also part of the Master Heat Pump Technician program.

HPC 107 Airflow Dynamics

Dates: March 13 & 15, 2017

Time: 6:00pm - 9:30pm

Instructor: Tim Williams



Fees: \$144 Non-Members/\$114 Members/\$57 APS Qualified Contractor Rate
Credits: 4 Continuing Education Credits/3.5 BPI Continuing Education Credits
Location: ELA Training Center, 2702 N. 3rd Street, Suite 2020, Phoenix, AZ 85004

Note: Included in this class is a **Duct Calculator**.

What You Can Expect: Airflow is one of the most critical issues for customer comfort. Many comfort complaints and improper system operation problems are a result of poor air distribution. A thorough understanding of airflow dynamics can enable you to uncover and resolve system problems. This course will help you identify inadequate or excessive airflow issues. It will help you solve hot spot, drafty, noisy and stale air complaints. Frequently airflow problems can be easily solved by a minor adjustment or changing to a better register.

Who Should Attend: Anyone involved in estimating and home sales. Service technicians and installers will definitely benefit from this class. This course is also part of the Master Heat Pump Technician program.

HVAC System Consultant Series

The HVAC System Consultant Series (HSCS) is specifically designed for the individual in the position of consulting and designing the right system for their customers. The series is designed to give the consultant the knowledge and skills required to properly assess the customer's needs, and to help the customer find the best system to meet those needs. Consultants completing the seven-course program receive a certificate of completion. A one time certificate fee is required – **see Course Registration Form to register**.

HPC 105 Customer Service and Selling Skills (See page 3 for specific class information.)

HPC 106 HVAC Code & Safety (See above for specific class information.)

HPC 108 Wake Up To Heat Pumps

Date: April 26, 2017

Time: 6:00pm - 8:00pm

Instructor: Rich Porter



Fees: \$134 Non-Members/\$104 Members/\$52 APS Qualified Contractor Rate
Credits: 4 Continuing Education Credits/2 NATE Continuing Education Hours
Location: ELA Training Center, 2702 N. 3rd Street, Suite 2020, Phoenix, AZ 85004

Note: Recommended course for new members.

What You Can Expect: Wake Up To Heat Pumps is a class designed to educate the student on all the benefits of Heat Pump operation. The hows and whys will be covered in depth, as well as the economical value that these systems provide. Natural Laws, Efficiency, Heat Transfer, and definitions are also covered in this class as well as why this climate is perfect for Heat Pumps.

Who Should Attend: This class is for anyone who wants a better understanding of this viable alternative to the standard electric or gas furnace.

HPC 111 Proper Installation Procedures

Dates: March 6 & 8, 2017

Time: 6:00pm - 9:30pm

Instructor: Rich Porter



Fees: \$189 Non-Members/\$158 Members/\$79 APS Qualified Contractor Rate
Credits: 4 Continuing Education Credits/7 NATE Continuing Education Hours
Location: ELA Training Center, 2702 N. 3rd Street, Suite 2020, Phoenix, AZ 85004

Note: Included in this class is a copy of the reviewed **Technicians Guide for Quality Installation**.

What You Can Expect: This course focuses on all the skills required for proper installations of split and package heat pumps. You will learn the tricks of the trade and how to avoid common installation mistakes made in the field. Other topics include: proper trap and condensate design, brazing techniques, refrigerant line design and setup, flex duct installation and application, control wiring fundamentals, thermostat installation and more. Send your installer to this class to make your installation department more profitable as well as reduce post installation service problems.

Who Should Attend: This class is designed primarily for installers and those service technicians that want to gain knowledge of what proper installations should look like.

HPC 115 Manual J

Dates: March 20, 21 & 22, 2017

Time: 6:00pm - 9:00pm

Instructor: Bo Rogers



Fees: \$219 Non-Members/\$184 Members/\$92 APS Qualified Contractor Rate
Credits: 4 Continuing Education Credits/9 NATE Continuing Education Hours
Location: SRP Pera Club, 1 E. Continental Drive, Tempe, AZ 85281

Note: Included in this class is a copy of **ACCA's Manual J 8AE**.

What You Can Expect: Learn about the basic principles of heat transfer, R-values and heat transfer multipliers. A step-by-step example of single-zone, single-family, or detached calculation for a whole house will be reviewed. Sample calculations for multi-zone, variable air-volume systems, multi-zone split-coil systems, and mobile home load. Review the methods used to estimate annual energy consumption and operating costs. An optional procedure for making leakage and infiltration CFM calculations on a component-by-component basis will also be reviewed.

Who Should Attend: Anyone involved in estimating or in-home sales including service technicians, supervisors, managers and owners looking to expand business and increase technical skills.

Advanced Technician Courses

These courses are designed for the Master Heat Pump Technician or other advanced level technicians.

HPC 139 Duct Diagnostics and Repair

Date: April 12, 2017
Time: 5:30pm - 9:30pm
Instructor: Bo Rogers



Fees: \$149 Non-Members/\$124 Members/\$62 APS Qualified Contractor Rate
Credits: 4 Continuing Education Credits/2 BPI Continuing Education Credits
Location: SRP Pera Club, 1 E. Continental Drive, Tempe, AZ 85281

Note: Included in this class is a copy of **ACCA's Duct Diagnostics and Repair**.

What You Can Expect: This class will help you understand major duct issues concerning efficiency, comfort, health, and safety. Get practical tips on installation, repair, testing and diagnosing duct systems.

Who Should Attend: This class is designed for the Master Heat Pump Technician, advanced technician, system designers and other HVAC professionals.

HPC 144 Choosing the Right System/Manual S

Dates: April 10, 2017
Time: 6:00pm - 9:30pm
Instructor: Bo Rogers



Fees: \$184 Non-Members/\$154 Members/\$77 APS Qualified Contractor Rate
Credits: 4 Continuing Education Credits/3.5 NATE Continuing Education Hours
Location: SRP Pera Club, 1 E. Continental Drive, Tempe, AZ 85281

Note: Included in this class is a copy of **ACCA's Manual S**.

What You Can Expect: Now that you understand how to size a new air conditioning system properly, what's next? This is where Manual S comes in. This class will teach you how to properly select the new air conditioner or heat pump for your customer. You will learn how to interpret manufacturers' data and apply it to a new A/C system and how one manufacturer's air conditioner will do the job and where another's won't.

Who Should Attend: Anyone who is responsible for the sales and installation of new comfort systems in a customer's home.

HPC 149 HVAC Troubleshooting

Dates: April 6, 2017
Time: 3:00pm - 6:30pm
Instructor: Travis Howard



Fees: \$134 Non-Members/\$104 Members/\$52 APS Qualified Contractor Rate
Credits: 4 Continuing Education Credits/3.5 NATE Continuing Education Hours
Location: ELA Training Center, 2702 N. 3rd Street, Suite 2020, Phoenix, AZ 85004

What You Can Expect: This course will discuss proper steps and procedures for effective troubleshooting. We will discuss trouble-shooting tool usage, calibration and care. We will review troubleshooting charts for electrical and mechanical for heating and cooling.

Who Should Attend: New service technicians and all installation technicians.

HPC 158 Wi-Fi Controls

Dates: April 19, 2017
Time: 6:00pm - 9:00pm
Instructor: Rich Porter



Fees: \$134 Non-Members/\$104 Members/\$52 APS Qualified Contractor Rate
Credits: 4 Continuing Education Credits/3 NATE Continuing Education Hours
Location: ELA Training Center, 2702 N. 3rd Street, Suite 2020, Phoenix, AZ 85004

What You Can Expect: This class will help take the "WHY" out of Wi-Fi. We will cover the principles of Wi-Fi, wireless, and communicating controls. Special attention will be given on wiring and connecting to the internet. Also covered is the technology needed to operate these "Smart Thermostats". Customers want to be able to monitor and adjust their controls from everywhere as well as being notified if there is any problem. Wi-Fi enabled thermostats do this and so much more.... Give your customers what they are asking for.

Who Should Attend: This class is for anyone who does not feel comfortable with this new technology.

HPC 159 Zone Systems

Dates: April 17, 2017
Time: 6:00pm - 9:00pm
Instructor: Rich Porter



Fees: \$134 Non-Members/\$104 Members/\$52 APS Qualified Contractor Rate
Credits: 4 Continuing Education Credits/3 NATE Continuing Education Hours
Location: ELA Training Center, 2702 N. 3rd Street, Suite 2020, Phoenix, AZ 85004

What You Can Expect: This informative class focuses on the installation, set-up, wiring, and troubleshooting of Zone Systems. Participants will gain full working knowledge of these systems. Regardless of brand, the technician will be empowered properly diagnose, by-pass (to provide temporary comfort), and repair these often confusing systems.

Who Should Attend: This class is designed for anyone who wants the understanding to build confidence and professionalism.

HPC 161 Introduction to Home Performance

Dates: February 28, 2017
Time: 5:30pm - 8:30pm
Instructor: Brandon Walton



Fees: \$134 Non-Members/\$104 Members/\$52 APS Qualified Contractor Rate
Credits: 4 Continuing Education Credits/1.5 BPI Continuing Education Hours
Location: ELA Training Center, 2702 N. 3rd Street, Suite 2020, Phoenix, AZ 85004

What You Can Expect: This course is designed for contractors new to the Home Performance with Energy Star Program™ (HPwES). We will demonstrate how to integrate HPwES into the company's current air conditioning installation plans to help customers seal their home envelope; creating energy efficiency and utility bill savings. The course will review thermal dynamics, energy modelling, pressure boundaries, and combustion safety testing as well as techniques to promote HPwES to your customers. Requirements to qualify to participate in the HPwES Program will also be discussed.

Who Should Attend: HVAC company owners, service managers, and technicians interested in learning the process of becoming HPwES qualified.

HPC 162 HVAC Variable Capacity Systems

Dates: April 24, 2017
Time: 6:00pm - 9:00pm
Instructor: Travis Howard



Fees: \$134 Non-Members/\$104 Members/\$52 APS Qualified Contractor Rate
Credits: 4 Continuing Education Credits/3 NATE Continuing Education Hours
Location: ELA Training Center, 2702 N. 3rd Street, Suite 2020, Phoenix, AZ 85004

What You Can Expect: This course will discuss the different types of systems from 2 speed compressors to true variable speed compressor systems. We will go over controls, design differences, operation and servicing procedures.

Who Should Attend: Service Managers, service technicians and installation technicians.

Commercial Technician Courses

These courses build upon the Master Heat Pump Technician Program, and are designed to add to the Master Heat Pump Technician's skills and knowledge in the commercial field.

HPC 147 Commercial Refrigeration

Date: April 4, 2017

Time: 6:00pm – 9:30pm

Instructor: Robert MacPherson



Fees: \$134 Non-Members/\$104 Members

Credits: 4 Continuing Education Credits/3.5 NATE Continuing Education Hours

Location: ELA Training Center, 2702 N. 3rd Street, Suite 2020, Phoenix, AZ 85004

What You Can Expect: This course will discuss commercial refrigeration systems, including walk-in refrigerators and freezers. Operating conditions, refrigerants and refrigerant selection will be reviewed. The focus will be on wiring, defrost control and operating strategies, and we will discuss refrigeration theory as it applies to product cooling. Mechanical and electrical troubleshooting will also be covered.

Prerequisites: HPC 101 Refrigeration Theory & Systems Diagnosis.

Who Should Attend: This class is designed for the Master Heat Pump Technician, Commercial Technician, and other advanced level technicians.

Quality Instructors ~ Mean Quality Education



Bo Rogers

Mr. Rogers has been working in the HVAC industry since he was big enough to carry a toolbox. He puts to use all the things he has learned over the years while installing, servicing and selling furnaces, air conditioners and heat pumps in the Midwest and Southwest. He enjoys learning about new technologies and methods in the industry, and especially enjoys sharing the knowledge he has gained with others.



Butch Owens

Mr. Owens is currently a Partner and Service Manager for Mech-Line Services LLC and has worked in several capacities for the refrigeration industry for over 24 years. Mech-Line Services is ABB HVAC Drives Manufacturer's Representative in Arizona. Butch holds over 28 Variable Frequency Drives, Motors, Hardware and related Certifications with ABB pertaining to AC Drives and Induction Motors. He is also EPA 40 CFR and Section 609 EPA Certified for refrigerants high and low pressure and is most honored to be part of a development council for ABB HVAC Drives for future products. Butch has taught for the Arizona Heat pump Council since 2011 and is also an Adjunct Instructor for the Electric League of Arizona's Electrical Continuing Education Program done in partnership with GateWay Community College.



Joel Harris

Mr. Harris has worked for over 28 years in the HVAC industry. Joel's extensive residential and commercial expertise is in troubleshooting, special applications and design which contribute to his successful training and management abilities utilized in daily operations.



Carl Bartoli

Mr. Bartoli has been in the HVACR industry for 35 years and is starting his 30th year with Donley Service as Director of Operations. Carl over sees all departments, air conditioning and plumbing service, installation, solar and call center. Mr. Bartoli takes an active role in training Donley Service's 60 employees, for technical, marketing and customer service.



Roger Smalley

Mr. Smalley has been in the HVACR industry for over forty years. His experiences include residential, commercial and industrial including Nuclear Power Plants. Roger is retired from APS after a 25 year career in HVAC as a technician, leader and consultant. He has an Associate's Degree in Air Conditioning Technologies' and a Bachelor's Degree in Business and Marketing.



Rich Porter

Mr. Porter has been in the service industry for over half his life. He is a NCI CO/Combustion Analyst and is also N.A.T.E. certified in the installation and service of gas furnaces, air conditioners, and heat pumps. Rich is proud to serve on the Professional Advisory Committees for RSI, AAI, UEI, and EVIT. He enjoys working with other industry professionals to help shape curriculums and better prepare students for a career in the HVACR industry.



Tim Williams

Mr. Williams began his training in the commercial controls industry while still in high school. He is now the owner and operator of Williams Mechanical Services, which was started in 2008. Tim manages a team working in both commercial and residential settings performing HVAC service, repair and replacement as well as new commercial installation on a variety of project types. Mr. Williams has worked in all facets of the HVAC industry including installation, service, project management and design building consulting.



SPRING 2017 COURSE REGISTRATION

Special Discounts May Apply

The APS Qualified Contractor Discount Rate applies only to contractors participating in the APS Residential Qualified Contractor Program. For more information on how to take advantage of these great training rates and other program benefits, call the APS Energy Answer Line at 602-371-3636.

Student Name: _____ Date: _____

Company: _____ ***E-mail: _____

Position: _____

Mailing Address: _____ City: _____ State: Arizona

Zip: _____ Daytime Phone: _____ ***Fax #: _____

Person/Company responsible for payment: _____

Are you a member of the ELA? Yes No Are you an APS Qualified Contractor? Yes No

*** We may use this fax number or email address to inform you of similar educational courses. **Email required.**

Cancellation Policy and No-Shows

A full refund will be issued as long as **written notice is received 48 hours** prior to the class starting time. Due to the number of courses held and registrations received, we do not provide written or verbal confirmation. Returned checks are subject to a \$30.00 returned check fee. **All registrations received by mail or fax are confirmed registrations unless cancelled within the proper time frame. Participants are charged the full fee amount if they register but do not attend. There are no refunds for no-shows.**

** _____ Please initial here to indicate you have read, understood, and agreed to this cancellation policy.

Rates:	Non-Member Rate	Member Rate	APS Qualified Contractor Rate
<input type="checkbox"/> HPC 126 Refrigeration Fundamentals	\$144	\$114	\$57
<input type="checkbox"/> HPC 152 Delivering Professional Service	\$134	\$104	\$52
<input type="checkbox"/> Master Heat Pump Technician Cert. Fee	\$50	\$30	
<input type="checkbox"/> HPC 101 Refrigeration Theory & Systems Diagnosis	\$150	\$120	\$60
<input type="checkbox"/> HPC 102 Charging, Piping & Dehydration	\$170	\$140	\$70
<input type="checkbox"/> HPC 103 Electrical Fundamentals for Heat Pumps	\$144	\$114	\$57
<input type="checkbox"/> HPC 104 Control Systems for Heat Pumps	\$144	\$114	\$57
<input type="checkbox"/> HPC 105 Customer Service & Selling Skills	\$144	\$114	\$57
<input type="checkbox"/> HPC 106 HVAC Code & Safety	\$204	\$174	\$87
<input type="checkbox"/> HPC 107 Airflow Dynamics	\$144	\$114	\$57
<input type="checkbox"/> HVAC System Consultant Series Cert. Fee	\$50	\$30	
<input type="checkbox"/> HPC 108 Wake Up to Heat Pumps	\$134	\$104	\$52
<input type="checkbox"/> HPC 111 Proper Installation Procedures	\$189	\$158	\$79
<input type="checkbox"/> HPC 115 Manual J	\$219	\$184	\$92
<input type="checkbox"/> HPC 139 Duct Diagnostics & Repair	\$149	\$124	\$62
<input type="checkbox"/> HPC 144 Choosing the Right System/Manual S	\$184	\$154	\$77
<input type="checkbox"/> HPC 147 Commercial Refrigeration	\$134	\$104	
<input type="checkbox"/> HPC 149 HVAC Troubleshooting	\$134	\$104	\$52
<input type="checkbox"/> HPC 158 Wi-Fi Controls	\$134	\$104	\$52
<input type="checkbox"/> HPC 159 Zone Systems	\$134	\$104	\$52
<input type="checkbox"/> HPC 161 Introduction to Home Performance	\$134	\$104	\$52
<input type="checkbox"/> HPC 162 HVAC Variable Capacity Systems	\$134	\$104	\$52

*The Heat Pump Council is now providing heavy hors d'oeuvres & soft drinks served from 5:30 - 6:00pm.

Method of Payment: Payment must be received prior to the start of class.

Total: _____ Check enclosed #: _____ M/C Visa **Please provide email above to receive credit card receipt.**

Credit Card#: _____ 3 Digit Code: _____ Exp. Date: _____

Exact Name on Card: _____ Signature: _____

Billing Address if different: _____ City: _____ State: AZ Zip: _____

REGISTER ONLINE AT: <http://edu.elaz.org>

Or mail registration and payment to: Arizona Heat Pump Council, 2702 N. 3rd St, Suite 2020, Phoenix, AZ 85004 Or fax to: 602-274-0029

Call 602-263-0115 for more information **www.elaz.org**



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