

**SYLLABUS & COURSE GUIDE FOR:**

**HVAC L1 F**

**Heating, Ventilating, and Air Conditioning**

BLOOMINGTON 1204 N Loesch Rd., Bloomington, IN 47404 Ph: (812) 333-8331 Fax: (812) 331-1655

CHAMPAIGN 44 East Logan Street, Champaign, IL 61820 Ph: (217) 352-7888 Fax: (217) 352-7893

ELKHART 1705 W. Franklin Street, Elkhart, IN 46516 Ph: (574) 294-7164 Fax: (574) 389-0901

FORT WAYNE 6821 Metro Park Drive, Fort Wayne, IN 46818 Ph: (260) 497-8680 Fax: (260) 497-8690

KOKOMO 1100 S Ohio Street, Kokomo, IN 46902 Ph: (765) 452-5628 Fax: (765) 452-5636

LAFAYETTE 510 Morland Drive, Lafayette, IN 46905 Ph: (765) 446-0105 Fax: (765) 446-0129

MUNCIE 601 East 15thStreet, Muncie, IN 47302 Ph: (765) 288-7526 Fax: (317) 288-7893

PLAINFIELD 2191 Airwest Blvd, Plainfield, IN 46168 Ph: (317) 268-3268 Fax: (317) 837-5032

TERRE HAUTE 1000 E. Ohio Street, Terre Haute, IN 47808 Ph: (812) 478-2818 Fax: (317) 478-2318

COURSE TITLE:Heating, Ventilating, and Air Conditioning

COURSE ID: HVAC L1 – F18

PREREQUISITES: None

LOCATION: Fort Wayne, Indiana

DISCIPLINE: HVACR Studies

CONTACT HOURS: 1.5 Lecture/ 1.5 Lab

EFFECTIVE DATE: 6/28/2018

COURSE DESCRIPTION: Studies the basic principles of heating, ventilating, and air conditioning systems. Includes trade mathematics, basic electricity, soldering, brazing, basic copper, plastic, and carbon steel practices. Covers introduction to the HVAC trade, heating, air conditioning, and air distribution systems.

EXPECTATIONS AND OBJECTIVES: The student is expected to use and develop the following knowledge, skills, and practices:

1. Perform procedures in a safe and professional manner.
2. Dress in attire appropriate for an HVAC professional including work boots.
3. Demonstrate conduct and practices desired by HVAC contractors and customers.
4. Describe the basic principles of heating, ventilating, and air conditioning systems.
5. Learn the important mathematical principles important the HVAC industry.
6. Explain electrical theory, identify electrical measurement instruments, various controls, and electrical symbols.
7. Define and properly use terminology of the HVAC field
8. Explain the combustion process, various types of furnaces, components, and sequence of operation of heating equipment.
9. Identify and explain the operation of safety devices used on HVAC equipment.
10. Demonstrate proper use of tools, test instruments, and equipment used in the HVAC field.
11. Explain the basic sequence and operation of low voltage thermostat and control circuits.
12. Describe fuel characteristics and safe work practices.
13. Identify and describe basic refrigeration components and operation.
14. Explain basic thermodynamic principles.
15. Identify various types of piping systems used in the HVACR & P industry.
16. Solder and braze copper pipe.
17. Prepare, study, and pass the Universal EPA 608 Certification. (The short study guide should be read MANY times)

INSTRUCTOR

Charles R Vogwill, chuckvogwill@duncansupply.com

EDUCATION ADMINISTRATOR

Charles R Vogwill, chuckvogwill@duncansupply.com

Duncan Supply

6821 Metro Park Drive

Fort Wayne, Indiana 46818-9393

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Cell (260)341-8873

REQUIRED TEXTS

Heating, Ventilating, and Air Conditioning Level One 4th Edition ISBN 978-0-13-340253-7



REQUIRED CLASSROOM SUPPLIES

Bound notebook for taking notes, TI-30 Calculator, straightedge, pencils, pens erasers, red and blue colored pencils.

RECOMMENDED MATERIALS

Graph paper, architect’s scale ruler, organizer folders, thumb drives.

INSTRUCTION FORMAT

Lecture, Whiteboard, PowerPoints, Videos, Demonstrations and Industry Resources.

GRADING SCALE

A= 90% TO 100%, B= 80 TO 89.99 %, C= 70 TO 79.9%, D= 60 TO 69.9% F= 59.9 or less.

FINAL GRADE WEIGHTING

**20% - Participation/ Attendance**

**20% - Homework/ Note Taking**

**20% - Test/ Quizzes**

**20% - Lab Competency Sheets/ Tasks**

**20% - EPA 608 Exam Score**

MAKE-UP POLICY

Quizzes, tests, homework and lab tasks must be performed during the specified time for credit. Decisions to accept or not accept make up work is at the discretion of the instructor. Prior notification of absence is recommended.

GENERAL POLICIES AND GUIDELINES

1. HVAC field professional attire (work clothes) & boots are required.
2. Note taking is required. (counts towards homework & participation points)
3. Asking questions during open discussion is required. (counts towards participation points)
4. Attendance is a gradable item.
5. Reading the text book is required. (Quizzes, tests and chapter note taking based on the textbook)
6. Students are not permitted to work on live electrical circuits, pressurized systems or any mechanical equipment without instructor presence and approval.
7. Do not stop any rotating equipment with your hands.
8. Do not attempt to stop any falling objects. Get out of the way.
9. Watches, rings, necklaces, and jewelry and loose-fitting clothing are not permitted in the lab.
10. Inappropriate conduct and gestures will not be tolerated.
11. Recording devices are not permitted in the classroom or lab.
12. Electronic devices may not be used in class unless used for note taking or to contribute to class discussions. (Any devise usage is subject to approval of the instructor)

**Course Schedule**

**Week One**

* Day One – Introduction to HVAC M1 (03101-13) - **Read M2 (03102-13) Pages 1-15**
* Day Two – Trade Mathematics M2 (03102-13) **Read M2 Pages 15-40**

**Week Two**

* Day One – Trade Mathematics M2 (03102-13) – **Read M3 (03106-13) Pages 1-21**
* Day Two – Basic Electricity M3 (03106-13) **Read M3 Pages 21-40**

**Week Three**

* Day One – Basic Electricity M3 (03106-13) **Study M3 Pages 46 & 47 Terms & Schematic Symbols**
* Day Two – Basic Electricity M3 (03106-13) – **Read M4 (03108-13) Pages 1-15**

**Week Four**

* Day One – Introduction to Heating M4 (03108-13) **M4 Read Pages 15-26**
* Day Two – Introduction to Heating M4 (03108-13) **Read M4 Pages 26-38**

**Week Five**

* Day One – Introduction to Heating M4 (03108-13) – **Read M5 (03107-13) Pages 1-29**
* Day Two – Introduction to Cooling M5 (03107-13) **Read M5 Pages 30-53**

**Week six**

* Day One – Introduction to Cooling M5 (03107-13) **Read M5 Pages 54-69**
* Day Two – Introduction to Cooling M5 (03107-13) **Read M6 (03109-13) Pages 1 - 46**

**Week Seven**

* Day One – Intro to Air Distribution systems M6 (03109-13) – **Read M7 (03103-13) Pages 1-37**
* Day Two – Basic Copper and Plastic Piping M7 (03103-13) – **Read M8 (03104-13) Pages 1-7**

**Week Eight**

* Day One - Soldering and Brazing M8 (03104-13) – **Read M8 Pages 8-34**
* Day Two – Soldering & Brazing M8 (03104-13) – **Read M9 (03105-13) Pages 1-27**

**Week Nine**

* Day One – Basic Carbon Steel Piping Practices M9 (03105-13) **Study for the EPA 608**
* Day Two – EPA 608 Exam Prep – **Study for the EPA 608**

**Week 10**

* Day One – EPA 608 Exam Prep – **Study for the EPA 608**
* Day Two – EPA 608 Exam (Proctored Exam)