Basic Course Information

<table>
<thead>
<tr>
<th>Semester:</th>
<th>SPRING 2018</th>
<th>Instructor Name:</th>
<th>Frank Miranda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Title &amp; #:</td>
<td>Air Cond Heating System</td>
<td>Email:</td>
<td><a href="mailto:FRANK.MIRANDA@IMPERIAL.EDU">FRANK.MIRANDA@IMPERIAL.EDU</a></td>
</tr>
<tr>
<td>CRN #:</td>
<td>20879</td>
<td>Webpage (optional):</td>
<td></td>
</tr>
<tr>
<td>Classroom:</td>
<td>3115</td>
<td>Office #:</td>
<td>10</td>
</tr>
<tr>
<td>Class Dates:</td>
<td>02/12/18-06/08/18</td>
<td>Office Hours:</td>
<td>Monday: 10:05 – 11:05 a.m. Tuesday: 10:05 – 11:05 a.m. Wednesday: 11:10 – 12:10 p.m. Thursday: 11:10 – 12:10 p.m. Friday: By Appointment Only</td>
</tr>
<tr>
<td>Class Days:</td>
<td>M W</td>
<td>Office Phone #:</td>
<td>760-355-6372</td>
</tr>
<tr>
<td>Class Times:</td>
<td>M 8:00am-10:05am W 8:00am-11:10am</td>
<td>Emergency Contact:</td>
<td></td>
</tr>
<tr>
<td>Units:</td>
<td>3</td>
<td></td>
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</tbody>
</table>

Course Description

This is a course of study in heating, ventilation, air conditioning, and refrigeration trade. This course includes the study of the laws of thermodynamics, the refrigeration cycle, brazing of refrigerant lines, understanding the use of and maintenance of heating, ventilation, air conditioning, and refrigerating equipment, applicable safety practices, and the proper use of refrigerants.

Student Learning Outcomes

IVC as an institution has adapted five Student Learning Outcome (SLO’s). They are inter-connected with each other. They will be inherent throughout this course.

1. Communication Skills
2. Crucial Thinking Skills
3. Personal Responsibilities
4. Information Literacy
5. Global Awareness

Course Objectives

1. Demonstrate knowledge of safety practices required during the measurements/calculations of HVAC Equipment
2. Demonstrate knowledge of the techniques for determining heating and cooling loads.
3. Demonstrate knowledge of calculators to apply mathematical formulas related to HVAC units.
4. Demonstrate knowledge of readings, tools and test meter measurements.
5. Demonstrate knowledge of writing, reading, and changing common numbers to metric system.
6. Demonstrate knowledge of volumes, pressures, temperatures, weights and measurements.
7. Demonstrate knowledge of using formulas to measure compression ratios and btu’s.
8. Demonstrate knowledge of calculations to estimate service and repair orders.
Textbooks & Other Resources or Links

1. Textbook
   ISBN: 1-4018-3765-4

2. Personal Protective Equipment
   - Safety Glasses
   - Leather Gloves
   - Ear plugs
   - Work footwear
   - Proper shirt and pants

Course Requirements and Instructional Methods

<table>
<thead>
<tr>
<th>Wk.</th>
<th>Unit</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Basics of Airflow</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Calculating Duct Sizes</td>
</tr>
<tr>
<td>3-4</td>
<td>3</td>
<td>Air Quantity &amp; Velocity</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>Pressures in a Duct</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>Airflow in a Duct and Dynamic Losses</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>MID-TERM</td>
</tr>
<tr>
<td>8-10</td>
<td>6</td>
<td>Sizing Ductwork</td>
</tr>
<tr>
<td>11-12</td>
<td>7</td>
<td>Calculating Pressure Losses in Ductwork</td>
</tr>
<tr>
<td>13-14</td>
<td>8</td>
<td>Duct Fittings</td>
</tr>
<tr>
<td>15</td>
<td>9</td>
<td>Measuring Airflow</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>FINAL</td>
</tr>
</tbody>
</table>

Review exam will be given each week on chapter being studied.

Homework will be review questions at the end of every chapter.

No extra credit will be assigned

Homework will be collected weekly

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

***Tentative, subject to change without prior notice***

Course Grading Based on Course Objectives

There will be a mid-term and final exam. Each will be worth 25% of the student’s final grade. The student will be evaluated on classroom participation and test each week on chapters that have been assigned and/or covered in class. These classroom assignments will be worth 25% of the student’s grade. The remaining 25% of the student’s grade will be based on the student’s performance in the lab section of the class. All homework and tests must be completed and delivered to the instructor.
Grading Systems

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percent of Overall Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90%-100% 25% Completed Lab Assignments</td>
</tr>
<tr>
<td>B</td>
<td>80%-89% 25% Completed Classroom Assignments</td>
</tr>
<tr>
<td>C</td>
<td>70%-79% 25% Midterm Exam</td>
</tr>
<tr>
<td>D</td>
<td>60%-69% 25% Final Exam</td>
</tr>
<tr>
<td>F</td>
<td>Less than 60%</td>
</tr>
</tbody>
</table>

Tardiness: 3 tardies equal 1 absence (I.V.C. Gen. Catalog pg. 29-30) 2008-2009

Based on Attendance, Homework, Hands On, Test and Final Exam.

**Attendance**

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student’s status will be the same as that of any other student who desires to add a class. It is the student’s responsibility to drop or officially withdraw from the class. See General Catalog for details.
- Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as ‘excused’ absences.

**Classroom Etiquette**

- **Electronic Devices:** Cell phones and electronic devices must be turned off and put away during class, unless otherwise directed by the instructor.
- **Food and Drink** are prohibited in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Please comply as directed by the instructor.
- **Disruptive Students:** Students who disrupt or interfere with a class may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the General Catalog.
- **Children in the classroom:** Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.

**Online Netiquette**

- **What is netiquette?** Netiquette is internet manners, online etiquette, and digital etiquette all rolled into one word. Basically, netiquette is a set of rules for behaving properly online.
- Students are to comply with the following rules of netiquette: (1) identify yourself, (2) include a subject line, (3) avoid sarcasm, (4) respect others’ opinions and privacy, (5) acknowledge and return messages promptly, (6) copy with caution, (7) do not spam or junk mail, (8) be concise, (9) use appropriate language, (10) use appropriate emoticons (emotional icons) to help convey meaning, and
(11) use appropriate intensifiers to help convey meaning [do not use ALL CAPS or multiple
exclamation marks (!!!!)].

**Academic Honesty**

Academic honesty in the advancement of knowledge requires that all students and instructors respect
the integrity of one another's work and recognize the important of acknowledging and safeguarding
intellectual property.

There are many different forms of academic dishonesty. The following kinds of honesty violations and
their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of
unacceptable academic conduct.

- **Plagiarism** is taking and presenting as one's own the writings or ideas of others, without citing the
  source. You should understand the concept of plagiarism and keep it in mind when taking exams and
  preparing written materials. If you do not understand how to “cite a source” correctly, you must ask
  for help.
- **Cheating** is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting
to use materials, or assisting others in using materials that are prohibited or inappropriate in the
context of the academic assignment in question.

Anyone caught cheating or plagiarizing will receive a zero (0) on the exam or assignment, and the
instructor may report the incident to the Campus Disciplinary Officer, who may place related
documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary
action. Please refer to the General Catalog for more information on academic dishonesty or other
misconduct. Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or
attempting to copy from others during an examination or on an assignment; (c) communicating test
information with another person during an examination; (d) allowing others to do an assignment or
portion of an assignment; (e) using a commercial term paper service.

**Additional Student Services**

Imperial Valley College offers various services in support of student success. The following are some of
the services available for students. Please speak to your instructor about additional services which may
be available.

- **Blackboard Support Site.** The Blackboard Support Site provides a variety of support channels
  available to students 24 hours per day.
- **Learning Services.** There are several learning labs on campus to assist students through the use of
  computers and tutors. Please consult your Campus Map for the Math Lab; Reading, Writing &
  Language Labs; and the Study Skills Center.
- **Library Services.** There is more to our library than just books. You have access to tutors in the
  Study Skills Center, study rooms for small groups, and online access to a wealth of resources.

**Disabled Student Programs and Services (DSPS)**

Any student with a documented disability who may need educational accommodations should notify the
instructor or the Disabled Student Programs and Services (DSP&S) office as soon as possible. The DSP&S
office is located in Building 2100, telephone 760-355-6313. Please contact them if you feel you need to be evaluated for educational accommodations.

**Student Counseling and Health Services**

Students have counseling and health services available, provided by the pre-paid Student Health Fee.

- **Student Health Center.** A Student Health Nurse is available on campus. In addition, Pioneers Memorial Healthcare District provide basic health services for students, such as first aid and care for minor illnesses. Contact the IVC Student Health Center at 760-355-6128 in Room 1536 for more information.

- **Mental Health Counseling Services.** Short-term individual, couples, family, and group therapy are provided to currently enrolled students. Contact the IVC Mental Health Counseling Services at 760-355-6196 in Room 2109 for more information.

**Student Rights and Responsibilities**

Students have the right to experience a positive learning environment and to due process of law. For more information regarding student rights and responsibilities, please refer to the IVC General Catalog.

**Information Literacy**

Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. The IVC Library Department provides numerous Information Literacy Tutorials to assist students in this endeavor.