



Basic Course Information

Semester:	Spring 2024	Instructor Name:	Frank Miranda
Course Title & #:	Air Conditioning Vent Duct Systems ACR 106	Email:	frank.miranda@imperial.edu
CRN #:	20911	Webpage (optional):	
Classroom:	3115	Office #:	10
Class Dates:	02/13/24 - 6/9/24	Office Hours:	Monday: 4:00 pm - 5: 00 pm Tuesday: 4:00 pm – 5:00 pm. Wednesday: 4:00 pm -5:00 pm Thursday: 4:00 pm - 5:00 pm
Class Days:	Tuesday and Thursday	Office Phone #:	760-355-6372
Class Times:	07:30-08:35am 08:35-10:00am	Emergency Contact:	Department office Secretary 760- 355-5758
Units:	3	Class Format:	Face-to-face (Laboratory & Lecture)

Course Description

This is a course of study covering duct systems used in the heating, ventilation, air conditioning, and refrigeration industry. This course is comprised of the study of designing duct systems, duct materials, layout procedures, shop and hand tools, sheet metal ducts and components, duct board and flex duct components, and safety practices.

Course Prerequisite(s) and/or Corequisite(s)

N/A

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Cut and form a simple layout pattern for galvanized sheet metal air conditioning square air duct.(ILO1, ILO2,ILO3, ILO4)
2. Cut and form a simple layout pattern for galvanized sheet metal air conditioning offset air duct.(ILO1, ILO2,ILO3, ILO4)
3. Cut and form a simple layout pattern for galvanized sheet metal air conditioning square to round air duct.(ILO1, ILO2,ILO3, ILO4)

Course Objectives

Upon completion of this course the student will:

1. Demonstrate knowledge of designing HVAC/R duct systems.
2. Demonstrate knowledge of duct systems.
3. Demonstrate knowledge of duct materials.
4. Demonstrate knowledge of layout and procedures for duct components.
5. Demonstrate knowledge of sheet metal duct components.
6. Demonstrate knowledge of duct board and flex duct components.

Textbooks & Other Resources or Links

1. Leo A. Meyer: "Layout for duct fittings" Lama books, ISBN: 0-88069-028-3
2. Personal Protective Equipment 2.1 Safety Glasses, leather gloves, ear plugs 2.2 Work footwear, proper shirt and pants

Course Requirements and Instructional Methods

Lab practices will be face to face for the first six weeks of the semester and continued instruction will be synchronous online with the use of Canvas. Visit a sheet metal shop and monitor duct design and manufacturing process.

Reading and Writing: Write a 2000 word report that will be shared and discussed in class.

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.

Course Grading Based on Course Objectives

A= 90%-100% Excellent B= 80%-89% Good C= 70%-79% Satisfactory D= 60%- 69% Pass, less than satisfactory F= 59% & Below Failing

The course grade will be determined by various factors such as class participation, classroom assignments, chapter reviews & drawing project, midterm & final exams. The grading range is as follows:

- *Class Participation 25%*
- *Laboratory 25%*
- *Midterm 25%*
- *Final Exam 25%*

Course Policies

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.
- 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. Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another's work and recognize the importance 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.

- Every student who has been taking something that is not theirs will gain a disciplinary action.

Other Course Information

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 (!!!!)]



IVC Student Resources

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.

1. The Blackboard Support Site provides a variety of support channels available to students 24 hours per day.
2. 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.
3. 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 IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas.



Anticipated Class Schedule/Calendar

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
Week 1	Intro to class/layout patterns	Unit 1
Week 2	Making connections	Unit 2
Week 3	Triangulation	Unit 3
Week 4	Rectangular Transitions	Unit 4
Week 5	Offsets	Unit 5
Week 6	Rectangular Duct Elbows	Unit 6
Week 7	Square to rounds	Unit 7
Week 8	Round Tappers	Unit 8
Week 9	Midterm	
Week 10	Round Tees	Unit 9
Week 11	Round Elbows	Unit 10
Week 12	Roof Elbows	Unit 11
Week 13	Flex Ducts	Unit 12
Week 14	Duct Board	Unit 13
Week 15	No Classes	
Week 16	Reading HVAC duct prints	Unit 14
Week 17	Final	

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*****Subject to change without prior notice*****