

## Basic Course Information

Semester:	<b>Spring 2026</b>	Instructor Name:	<b>Kevin Lizarraga</b>
Course Title & #:	<b>ACR 106</b>	Email:	<b>kevin.lizarraga@imperial.edu</b>
CRN #:	<b>20911</b>	Webpage (optional):	
Classroom:	<b>3115</b>	Office #:	
Class Dates:	<b>02/17/26 - 06/12/26</b>	Office Hours:	<b>Monday – Thursday 5:00-6:00PM Via Phone or Zoom</b>
Class Days:	<b>Tuesday/Thursday</b>	Office Phone #:	<b>7608862265</b>
Class Times:	<b>7:30-10:00 am</b>	Emergency Contact:	<b>Department office Secretary 760-355-5758</b>
Units:	<b>3</b>	Class Format:	<b>Face-to-face (Laboratory &amp; Lecture)</b>

## Course Description

This course of study covers duct systems used in the heating, ventilation, air conditioning, and refrigeration (HVACR) industry. The course consists of studying and designing duct systems, including duct materials, layout procedures, shop and hand tools, sheet metal ducts and components, duct board and flex duct components, as well as safety practices.

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

N/A

## Student Learning Outcomes

IVC as an institution has adopted five Student outcomes(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 Responsibility
4. Information on Literacy
5. Global Awareness

# Course Objectives

Upon successful 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 material.
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. Textbook Modern Refrigeration and Air Conditioning, 22<sup>nd</sup> Edition, eBook Author: Andrew D. Althouse, Carl H. Turnquist, A.F. Bracciano, D.C. Bracciano, and G.M. Bracciano ISBN# 978-1-63563-877-6.
2. Textbook Leo A. Mayer: "Layout for duct fittings" Lama books, ISBN: 0-88069-028-3
3. Personal Protective Equipment:
  - Safety Glasses
  - Leather Gloves
  - Earplugs
  - Work Footwear
  - Proper Shirt and Pants

# Course Requirements and Instructional Methods

**COURSE ACTIVITIES INCLUDE:**

- **LABORATORY ASSIGNMENTS**
- **QUIZZES**
- **CHAPTER REVIEW**
- **WRITTEN EXAMS**
- **READING ASSIGNMENTS.**

# 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

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

Class assignments and 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.

## IVC Student 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> [Links to an external site.](#) or click the heart icon in Canvas.

## Anticipated Class Schedule/Calendar

<b>Date or Week</b>	<b>Activity, Assignment, and/or Topic</b>	<b>Pages/ Due Dates/Tests</b>
Week 1	Syllabus & Introduction	
Week 2	Safety, Tools, and intro to Air Movement and Measurement	

<b>Date or Week</b>	<b>Activity, Assignment, and/or Topic</b>	<b>Pages/ Due Dates/Tests</b>
Week 3	Air Movements and Measurements CH 28	
Week 4	Air Quality CH 29	
Week 5	Air Distribution CH 30	
Week 6	CH30 Continued CH31	
Week 7	Mid Term	
Week 8	Lab Equipment and proper use	
Week 9	Sheet Metal Tool Box	
Week 10	Sheet metal Fitting Layouts	
Week 11	Duct board and sheet metal Plenums	
Week 12	Final Exam	

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