

Imperial Valley College
Industrial Technology Division
BLDC 115 Energy Fundamentals
Fall 2012

Instructor: Mr. Velasquez
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Office Hours

Monday 3:00pm- 4:30 pm
Tuesday 4:00pm- 6:00pm
Wednesday 3:00pm- 4:30 pm
Friday 9:00am-11:30 pm

By appointments only

Monday 4:00pm- 5:30pm
Tuesday 1:00pm- 4:00pm
Wednesday 3:00pm- 5:00pm
Thursday 4:00pm- 6:00pm

Division Office: 10

Division Coordinator: Jose Lopez (760) 355-6361 Fax: (760) 355-6552

Units: 3

Semester: Fall 2012 August 20- December 8

Class: Tuesdays 12:30pm- 1:30pm Lecture
 Thursdays 1:30pm – 3:15pm Laboratory

Location: Room 507

I. Course Description

This course is an introductory study in home performance concepts, California Energy Codes. Instruction will be based on blower door and duct tester standards, infrared camera monitoring, shell sealing standards, duct system analysis, repair and sealing standards. Cost and benefit analysis of sealing repairing and retrofits for energy losses. Included will be the discussion on the leading organizations that influence sustainable buildings such as energy star and LEED, their design, and efficiency. Learning opportunities will be enhanced through a combination of lecture and laboratory activities. (Nontransferable, AA/AS degree only)

II. Course Objectives

Upon successful completion of this course, the students will:

- A. Study and understand building performance regulatory organizations.
- B. Study and comprehend home performance evaluation, and analysis through diagnosis and documentation.
- C. Compare and contrast initial leakage before sealing and final leakage after sealing.
- D. Critically evaluate pre and post test conditions and understand pre test requirements.
- E. Understand Wrap up procedures and non-feasibility criteria for blower door and duct tester operation.

Course Outcomes

- 1. Interpret performance evaluation and develop a remediation plan. (critical thinking skills)
- 2. Demonstrate positive work ethics and demonstrate ability to work well with others and perform group tasks in a timely manner. (personal Responsibility)
- 3. Differentiate between Infiltration and Ex-filtration. (critical thinking skills)

III. Course instructional schedule

Week 1.	Introduction	
	Unit 1	Principles of Energy
Week 2	Unit 1	
	Unit 2	Energy and the Building Shell
Week 3	Unit 2	
Week 4	Unit 3	Air Leakage
	Unit 3	
Week 5	Unit 4	Insulation
	Unit 4	
Week 6	Unit 5	Windows and Doors
	Unit 5	
Week 7	Unit 6	Heating
	Unit	Midterm
Week 8	Unit 7	Lighting and Appliances
	Unit 7	
Week 9	Unit 8	Cooling
	Unit 8	
Week10	Unit 9	Water Heating
	Unit 9	
Week 11	Unit 10	Health and Safety
	Unit 10	
Week 12	Case Study #1 Review and Remediation Plan	
Week13	Case Study #2 Review and Remediation Plan	

Week 14	November 17	Case Study #3 Review and Remediation Plan
	November 22	LEED Standards
Week 15	November 24	LEED Standards
	November 29	LEED Standards
Week 16	December 6	LEED Standards
	December 8	Final Exams

Grading System:

- A= 90%-100%
- B= 80%-89%
- C= 70%-79%
- D= 60%- 69%
- F= 59% & Below

The course grade will be determined by various factors such, as class participation, classroom assignments, Lab Participation & Case Study review essay, midterm & final exams. The grading range is as follows:

Class Participation	10%
Lab Participation	15%
Case Study Review Essay	25%
Midterm	25%
Final Exam	25%

Attendance, Late Assignments:

Absences and tardiness provide an opportunity to miss valuable instruction presented by the instructor, guest speakers, and site administrators. Tardiness will contribute to lower scores on assignments and subsequently a lower course grade. All assignments are due on the specified completion dates and all students have the same and equal time to complete all assignments as per the course calendar. Considerations will be given to those late assignments accompanied by a written medical statement from a physician. 25% of possible points will be penalized for late work. Any assignment can be turned in prior to the due date!

Quote: It's not a question of who's going to throw the first stone; it's a question of who's going to start building with it.

- Sloan Wilson

Course Text

Residential Energy: Cost Savings and Comfort for Existing Buildings
John Krigger & Chris Dorsi 5th Edition