

Basic Course Information

Semester:	Fall 20	Instructor Name:	Carlos Araiza
Course Title & #:	Diesel Maint and Repair AUT 140	Email:	carlos.araiza@imperial.edu
CRN #:	11740	Webpage (optional):	
Classroom:	1101	Office #:	3121
Class Dates:	8/17-12/12	Office Hours:	N/A
Class Days:	Monday, Wednesday & Friday	Office Phone #:	760-355-6419
Class Times:	6:00-9:10	Emergency Contact:	(760)355-6361
Units:	4		

Course Description

This Course provides the theory and skills for repairing Diesel engines and related accessories. The proper procedures for disassembling, and rebuilding are covered. The complete engine is reviewed with emphasis on the status of the engine components and to return to service after proper reassembly, adjustment and testing.

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. Define the terms that describe basic Diesel Operation.**
- 2. Identify the difference between a natural aspirated engine and manifold boosted engine.**
- 3. Explain how energy of the fuels is converted to kinetic energy.**
- 4. Explain engine torque, horsepower and rating for diesel engine.**
- 5. Explain volumetric efficiency, thermal efficiency and total engine power.**

Course Objectives

[Required language: Use from [CurricUNET](#) course outline of record.]

Upon successful completion of this course, students will be able to:

1. Identify safety procedures and shop equipment operation.
2. Apply the proper procedures to use the correct tools.
3. Troubleshoot major Diesel engine components failures and related units.
4. Inspect and repair engine blocks.
5. Inspect and repair pistons, rings and connecting rods.
6. Inspect and repair cylinder, heads and related components.
7. Inspect and repair camshaft and related components.
8. Inspect and repair lubrication and cooling systems.

Textbooks & Other Resources or Links

Diesel Technology; Fundamentals Service and Repair 7th Edition by Andrew Norman –
ISBN 978-1-61960-832-0
ISBN 13978-1590707708

Course Requirements and Instructional Methods

COURSE LAB WILL BE FACE TO FACE INSTRUCTION FOR THE FIRST SIX WEEKS OF THE SEMESTER DUE TO COVID-19 RESTRICTIONS AND AFTER THE 6TH WEEK IT WILL TRANSITION TO ONLINE INSTRUCTION VIA CANVAS AND CONFERZOOM IN A SYNCHRONOUS FORMAT.

During this class the methods of instruction used may include but are not limited to the following:

Demonstration
Discussion
Group activities
Shop and lab activities
Lecture
Simulation
Audio visual presentation

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

For successful completion of this course students will need to be present for and participate in all lectures or discussions and complete all course assignments in a timely manner in addition to completing homework, reading, quizzes, and evaluations to be assigned in the semester. The final grade will be calculated as an average of the assignments as follows:

Completed Assignments	25%
Quizzes	25%
Midterm	25%
Final Exam	25%

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

Make sure to:

1. Bring your textbook every section of lecture
2. Bring a notebook and pencils
3. Be on time for class
4. Participate during lecture/lab activities
5. No late assignments

Basic Rules and shop safety:

1. No music allowed in the auto shop
 2. No parking in front of the gate
 3. No work should be done without instructor's permission
 4. No parking inside the shop during lecture time.
 5. No long brakes (should be 10 minutes per class hour)
 6. Each student should clean the work area
 7. The students can't leave early without instructor's permission
 8. No cell phones during class session
 9. No helpers or visitors during lab activities
 10. Safety glasses are required along with safety work clothing, no sandals, loose clothing, or jewelry allowed.
- **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

[Required Information for web-enhanced, hybrid and online courses: Describe your policies regarding netiquette. The below is suggested language and may be modified for your course.]

- 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.

Anticipated Class Schedule/Calendar

[Required Information – Discretionary Language and Formatting: The instructor will provide a tentative, provisional overview of the readings, assignments, tests, and/or other activities for the duration of the course. A table format may be useful for this purpose.]

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
Week 1	Auto Shop Safety Course Introduction	
Week 2	Chapter 1,3,4 History and basic operation and tools	
Week 3	Chapter 7 Piston, Rings, and connecting rods	
Week 4	Chapter 5 Engine blocks	
Week 5	Chapter 6&9 camshaft and crankshaft	
Week 6	Chapter 8 Cylinder Heads	
Week 7	Chapter 12 Intake Systems	
Week 8	Chapter 13 Exhaust Systems	
Week 9		Midterm
Week 10	Chapter 10 Lubrication Systems	
Week 11	Chapter 11 Cooling Systems	
Week 12	Chapter 14,15,16 Fuel and Fuel Systems	

Week 13	Chapter 17,18 Injectors and pressure pumps	
Week 14	Chapter 20,21,22 Fuel Injection Systems	
Week 15	NO CLASS Holiday	No Classes Fall Break
Week 16	Chapter 19 Governors and Acceleration Control	
Week 17	Final Exams	Final Exam

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