



Basic Course Information

Semester:	Winter 2023	Instructor Name:	Andres Estrada
Course Title & #:	AUT 140 Diesel Engine Maintenance & Repair	Email:	Andres.Estrada@imperial.edu
CRN #:	15174	Webpage (optional):	
Classroom:	1102	Office #:	1101
Class Dates:	January 3rd – February 3rd	Office Hours:	
Class Days:	M-F	Office Phone #:	
Class Times:	6:00pm-10:20pm	Emergency Contact:	Tisha Nelson 760-355-3631
Units:	4.0	Class Format:	Face to Face

Course Description

This course provides the theory and skills for repairing diesel engines and related accessories. The proper procedures for disassembling, measuring, and rebuilding are covered. The complete engine is reviewed with emphasis on the status of engine components and to return it to service after proper reassembly, adjustments, and testing. (Nontransferable, AA/AS degree only)

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

None.

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 engine operation.
2. Identify the differences between a natural aspirated engine and a manifold boosted engine.
3. Explain how the energy of fuels is converted to kinetic energy.
4. Explain engine torque, horsepower, and rating for diesel engines.
5. Explain volumetric efficiency, thermal efficiency, and total engine power.

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. A. Identify safety procedures and shop equipment operation.
2. B. Apply the proper procedures to use the correct tools.
3. C. Troubleshoot major diesel engine component failures and related units.
4. D. Inspect and repair engine blocks.
5. E. Identify, inspect, and repair engine crankshafts.
6. F. Inspect and repair pistons, rings and connecting rods.
7. G. Inspect and repair cylinder heads and components.
8. H. Inspect and repair camshaft and related components.
9. I. Inspect and repair lubrication systems.
10. J. Inspect, service and repair cooling systems.
11. K. Test and troubleshoot engine performance.



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Textbooks & Other Resources or Links

Textbook Used: Diesel Engine Technology 9th Edition (ISBN 978-1-64564-685-3)

Access to computer, Internet, and word type applications.

Pen and pencils

Standard writing paper and notebook.

Lab days will require: Safety glasses, work footwear (no open toe shoes, slip resistant), proper shirts and pants.

Course Requirements and Instructional Methods

This course will consist of a variety of instructional methods and assignments including, but not limited to, lectures, class discussions, group activities, a research paper, interviews, and hands-on shop experiences.

Course Grading Based on Course Objectives

Grading System:

A – 333-370 of points = Excellent

B – 296-332 of points = Good

C – 259-295 of points = Acceptable

D – 222-258 of points = Below Average

F – 221 and Below = Failing

Activities	Points
Homework, Class Activities, Lab	210
Mid-Term Exam	80
Final Exam	80
Total Points	370

***There are no make-up exams unless arrangements with the instructor are made prior to exam.

Course Policies

- 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: 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, only students enrolled in the class may attend; children are not allowed.

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:

- plagiarism
- copying or attempting to copy from others during an examination or on an assignment
- communicating test information with another person during an examination
- allowing others to do an assignment or portion of an assignment
- using a commercial term paper service.

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.

Other Course Information

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.

IVC Student Resources

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Anticipated Class Schedule/Calendar

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
Week 1 January 3 - 6	<ul style="list-style-type: none"> - Introductions - Syllabus - Chapter 2 - Safety Test - Chapter 1 - Tool Room Intro - Lab Intro Prep 	Homework given through Canvas on Friday for chapters covered in class. Due before the start of class following Monday.



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Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
	<ul style="list-style-type: none"> - Chapter 4 - Chapter 5 	
Week 2 January 9 - 13	<ul style="list-style-type: none"> - Chapter 8 / Lab - Chapter 7 / Lab - Chapter 6 / Chapter 9 - Lab - Chapter 10 / 11 	Homework given through Canvas on Friday for chapters covered in class. Due before the start of class following Monday.
Week 3 January 16 - 20	<ul style="list-style-type: none"> - Monday 16th No School - Mid-Term - Chapter 12 / Chapter 13 - Chapter 26 - Lab - Chapter 14 / 15 	Homework given through Canvas on Friday for chapters covered in class. Due before the start of class following Monday.
Week 4 January 23 - 27	<ul style="list-style-type: none"> - Lab - Chapter 17 / Chapter 18 - Chapter 19 / Chapter 20 - Chapter 23 - Lab 	Homework given through Canvas on Friday for chapters covered in class. Due before the start of class following Monday.
Week 5 January 30 – February 3	<ul style="list-style-type: none"> -In Class assignments -Lab -Final Exam 	

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