



**Note to Instructor: Replace the placeholder text beneath the headings with the appropriate information for your course. Please note that all sections, with the exception of "Other Course Information," are required elements.**

### Basic Course Information

Semester:	<b>Spring 2021</b>	Instructor Name:	<b>Carlos Araiza</b>
Course Title & #:	<b>Diesel Engine Tune Up AUT240</b>	Email:	<b>Carlos.araiza@imperial.edu</b>
CRN #:	<b>21384</b>	Webpage (optional):	
Classroom:	<b>1200</b>	Office #:	<b>3121</b>
Class Dates:	<b>2/16/2021 to 6-11/2021</b>	Office Hours:	<b>ONLINE TBA</b>
Class Days:	<b>MW MW</b>	Office Phone #:	<b>(760)355-5419</b>
Class Times:	<b>MW 6:00pm-7:05pm ONL- ZM MW 6:00pm-7:05pm 1200 MW 7:10pm -8:35pm ONL- ZM MW 7:10pm -8:35pm 1200</b>	Emergency Contact:	<b>(760) 355-6361 (Dept. Office) (760) 355-6308 (campus Security) (760) 355-6217 (Dean's Office)</b>
Units:	<b>3</b>	Class Format:	<b>Hybrid( Online Lecture/ Face to Face Lab)</b>

### Course Description

[Paste in the course description from the Course Outline of Record (COR), located at <https://imperial.curricunet.com/Search>]

This course is design to prepare students to perform tune-up and major service on Diesel engine. The practical aspect of this course and comprehensive overview of all the related systems and components allow the student to achieve the objectives of this course.

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

[Paste in the course prerequisite(s) and/or corequisite(s) from the COR, located at <https://imperial.curricunet.com/Search>]

Recommended Course AUTO 110

### Student Learning Outcomes

[Paste in the course student learning outcomes from the COR, located at <https://imperial.curricunet.com/Search>]

1. Identify the difference between a tune-up and a major Diesel Service.
2. Describe the safety steps necessary to service a Diesel engine and its related systems and components.
3. Describe the steps and procedure to perform Diesel engine tune-up service.
4. Remove, replace, test, analyze all the related systems and components of a Diesel engine to perform a tune-up service.

## Course Objectives

[Paste in the course objectives from the COR, located at <https://imperial.curricunet.com/Search>]

1. Demonstrate knowledge of the history and principles of operation of the Diesel engine.
2. List the proper steps for taking a pump and injector apart with proper care.
3. Identify the design and construction of the injector and name components.
4. Remove, Analyze and replace all the related systems and components of a Diesel Engine.
5. Install a Diesel Pump and bleed the system.
6. Diagnose compression problems
7. Analyze smoke problems and determine the cause.
8. Understand the operation of the fuel system and other related system and components .
9. Demonstrate knowledge of the engine electrical circuits and electrical systems.
10. Explore career in the Diesel technology and ASE certifications.

## Textbooks & Other Resources or Links

**Diesel Technology:** Fundamentals, Service, Repair 7<sup>th</sup> edition by Andrew Norman  
And John “Drew” Corinchock ISBN: 13: 978—1590707708 **OR** Diesel Technology:  
Fundamentals, Service, Repair 8<sup>th</sup> edition by John Drew Corinchock and Andrew Norman ISBN: 13: 978-  
1619608320

**Personal Safety Equipment:** ANSI Z. 87 rated safety glasses, appropriate footwear for the shop, appropriate shirt and pants for the shop

## Course Requirements and Instructional Methods

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

Demonstrations, Discussion, Group Activities, Individual Assistance/ Guidance, Shop/Lab Activities, Lectures, Simulation/Case Studies, Audio Visual Presentations, Computer Assisted Instruction, Out of Class Assignment .

Note on Out of Class Assignments: The Department of Education policy states that one (1) credit hours 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%

## Course Policies

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.

### Other Course Information

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](#).

### 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> or click the heart icon in Canvas.

### Anticipated Class Schedule/Calendar

*[Provide a tentative overview of the readings, assignments, tests, and/or other activities for the duration of the course. A table format as in the example below may be used for this purpose.]*

***[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	<b>Auto Shop Safety /Tools Course Introduction</b>	
Week 2	<b>History and basic engine operation</b>	
Week 3	<b>Diesel Engine Components</b>	
Week 4	<b>Engine Lubrication and Cooling Systems</b>	
Week 5	<b>Electrical System: Battery, starter, alternator</b>	
Week 6	<b>Fuel Injection System</b>	

<b>Week 7</b>	<b>Midterm Exam</b>	
<b>Week 8</b>	<b>Spring Break</b>	
<b>Week 9</b>	<b>Diesel Fuel Pumps</b>	
<b>Week 10</b>	<b>Diesel Injectors</b>	
<b>Week 11</b>	<b>Intake/Exhaust systems, turbocharges and DPF</b>	
<b>Week 12</b>	<b>Turbochargers and blowers</b>	
<b>Week 13</b>	<b>Electronic Engine Controls, Engine Codes</b>	
<b>Week 14</b>	<b>Diesel Fuel Filters and Conditioners</b>	
<b>Week 15</b>	<b>Preventive Maintenance</b>	<b>No Classes Fall Break</b>
<b>Week 16</b>	<b>Chapter 19 Governors and Acceleration Control</b>	
<b>Week 17</b>	<b>Final Exams</b>	<b>Final Exam</b>

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