IMPERIAL VALLEY COLLEGE

Basic Course Information

Semester:	**Winter 2023**	Instructor Name:	**Ricardo Pradis**
Course Title & #:	**Engine Technology AUT-110**	Email:	**ricardo.pradis@imperial.edu**
CRN #:	**15221**	Webpage (optional):	
Classroom:	**BLDG 1100**	Office #:	**1100 bldg.**
Class Dates:	**Jan. 3 – Feb 3**	Office Hours:	**M-R 8:00 – 8:30 am**
Class Days:	**Monday's - Thursday's**	Office Phone #:	**760-355-6403**
Class Times:	**8:30 - 10:20 Lec.** **10:20 - 4:10 Lab.**	Emergency Contact:	**760-355-6361 (Secretary)**
Units:	**4.0**	Class Format:	**Face to Face**

Course Description

For the student with little or no internal combustion engine background Design, construction, and mechanical function of internal combustion engines including lubricating, cooling, fuel, and electrical systems, and an understanding of the basic sciences relevant to such topics as internal combustion and energy conversion s

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

None

Student Learning Outcomes

1. Identify and interpret engine concerns; determined necessary action
2. Perform cylinder cranking and running compression test; determined necessary action.
3. Remove cylinder head; inspect gasket condition; install cylinder head and gasket; tighten according to manufacturer's specifications and procedures.
4. Disassemble engine block; clean and prepare components for inspection and reassembly.

Course Objectives

1. Formulate and apply safe working practices, in and out of the shop, including fire prevention.

2. Recognize and use the automotive tools and equipment that is basic to automotive operation and principles.

3. Take apart, analyze and reconstruct the automotive engine.

4. Compare and contrast the automotive engine and other engines.

5. Explain the electrical and fuel theory.

6. Apply the use of the basic tune-up equipment.

Textbooks & Other Resources or Link

Textbook: G-W Modern Automotive Technology 10th Edition ISBN: 978-1-64564-688-4

Course Requirements and Instructional Methods

Method of Instruction:

Methods of instructions may include, but are not limited to, the following: lectures, textbook worksheets, hands-on worksheets, internet readings, large and small group discussions, audiovisual aids, and demonstrations.

Out-of-class:

Visit an auto dealership and identify the different engine types offered as a standard across the range of automobile models under a single brand name (Ford, Honda, Chrysler, Chevrolet, etc). Write a report on your findings.

Reading and Writing:

Find out about the Stanley Steamer or another steam-driven automobile. Describe to the class how its engine worked. Show a drawing or a photograph, if possible.

Course Grading Based on Course Objectives

Grading Criteria:

1. Grading system:
    - A=90%-100% of points= Excellent
    - B=80%-89% of points= Good
    - C*=70%-79% of points= Satisfactory
    - D= 60%-69% of points= Pass, less than satisfactory
    - F= Less than 60% of points= Failing
2. Very important:
    - **Mid-Term** will be given on Jan 19.
    - **Final-Exam** will be given on Feb 2.
    - There are no make-up exams unless you have a very good reason and make arrangements with the instructor before the exam.
    - Final grades can be raised or lowered based on your preparation and participation in class. It benefits you to be engage and participative.

Grades:

	Points
Book worksheets, quizzes.	140
Lab activity, hands-on worksheets.	240
Mid-term	60
Final-exam	60
Total points	500

Course Grade:
The course grade is based on total points accumulated during the semester. There is a total of 500 points available. Grades are determined by dividing the total points you earn by the total points available to get your percentage. (Total points may vary if I change the assignments in a particular week).

Grading of Hands-on Assignments:
The most common problem students experience is not being detailed enough in their answers and not spending the right amount of time in the repair procedures. Always be as specific as you can and use examples from your readings. Make sure to answer all parts of the questions. Points will be deducted for inadequate responses. Feedback will be given after each assignment and, hopefully, you will improve as you proceed with the course. The following grading rubric is used when grading assignments.

	Grading Rubric for Hands-on Assignment	Points
A	Focused and clearly organized. Contains critical thinking and content analysis. Convincing evidence is provided to support conclusions. Ideas are clearly communicated. Clearly meets or exceeds assignments requirements.	18-20
B	Generally focused and contain some development of ideas, may be simplistic or repetitive. Evidence is provided which supports conclusions. Meet assignments requirements.	16-17
C	May be somewhat unfocused, underdeveloped, or rumbling. But does have some coherence. Some evidence is provided which support conclusions. Meets minimum assignment requirements.	14-15
D	Unfocused, underdeveloped. Minimal evidence is used to support conclusion. Does not respond appropriately to the assignment.	12-13
F	Minimal effort by the student. Unfocused, underdeveloped. Evidence is not used to support conclusion. Block overall understanding. Does not meet assignment requirements.	0-11

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.

- 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 (!!!!)].

Other Course Information

Shop/ Lab Area

- Safety test must be passed to work in the shop and complete required lab exercise.
- Safety glasses are required to be worn at all times while in the shop area, safety glasses are the student responsibility (students not wearing safety glasses will be ask to leave the class for that day no exceptions).
- Clean up your area and any other lose debris or trash.
- Wear all required safety protection and comply with posted signs.
- No shorts or open toe foot wear, always be prepared to go into the lab area.
- Comply with tool check out policy and return tools clean.
- Do not perform any work on any vehicle outside the assigned task without permission from your instructor.

Parking:

No student parking by the building, the only exception is on lab time if your vehicle is a project (instructor approved). Speed limit must be kept at or under 5MPH.
Parking permit is required at all times.

Projects:

All projects are to be taken with the student's unless otherwise approve by the instructor.
All approve projects must be removed from campus prior to finals.
All projects must have a written work order (R/O).

Shop Maintenance:

All work will cease 20 minutes prior to end of class.
All work areas must be cleaned.
Tools must be cleaned and returned to the tool room.
Any broken or missing tools must be reported immediately. Tools are student's responsibility.

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.

IMPERIAL VALLEY COLLEGE

Anticipated Class Schedule/Calendar

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
Week 1 Jan 3-6	Syllabus & Introduction, Ford Service Training There will be a quiz for every chapter in the course. Chapter 5 Auto Shop Safety Chapter 56 Engine Removal, Disassembly, & Cleaning. Chapter 11 Engine fundamentals Lab. Remove engine, Disassemble and Cleaning	 Pages 55-66 Ch-5 Pages 799-820 Ch-56 Pages 129-143 Ch-11
Week 2 Jan. 9-12	Chapter 12 Engine Design Chapter 14 Engine Bottom End Construction Chapter 57 Short Block Rebuilding & Machining Lab: Inspect, Measure, & Properly Assemble a Short Block	Pages 144-150 Ch-12 Pages 162-174 Ch-14 Pages 821-857 Ch-57
Week 3 Jan. 17-19	Chapter 13 Engine Top End Construction Chapter 58 Engine Top End Rebuilding MID-TERM Lab: Inspect, Measure & Properly Assemble a Cylinder Head	Pages 151-161 Ch-13 Pages 858-885 Ch-58
Week 4 Jan. 23-26	Chapter 15 Engine Front End Construction Chapter 59 Engine front End Service Chapter 16 Engine Size & Performance Measurements Lab: Inspect, Service, & Adjust, Engine Front End	Pages 175-183 Ch-15 Pages 886-899 Ch-59 Pages 184-192 Ch-16
Week 5 Jan. 30-Feb-2	Chapter 55 Engine Mechanical Problems Chapter 48 Cooling systems Maintenance Chapter 50 Lubrication System Maintenance FINAL-EXAM Lab: Engine Reassembly	Pages 775-798 Ch-55 Pages 656-677 Ch-48 Pages 693-706 Ch-50

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

Work-based Learning

Career possibilities in the automotive industry:

Work-based learning (WBL) allows student to apply classroom content in professional settings while gaining real-work experiences. These opportunities will provide you with a deeper, more engaging and relevant learning environment. Some examples of WBL assignments are job shadowing, informational interviews, and guest speakers. In this course, you will be working on workplace simulations and will be using Ford Service Training online program. It is intended to provide students with simple knowledge (basic) to complex skills (advance) training.

Contact:

Office Phone: (760) 355-5721

Email: careerservicescenter@imperial.edu

Hours of Operation:

Monday - Friday; 8:00 a.m. to 5:00 p.m.