IMPERIAL VALLEY COLLEGE

Basic Course Information

Semester:	**Fall 2021**	Instructor Name:	**Ricardo Pradis**
Course Title & #:	**Engine Technology**	Email:	**ricardo.pradis@imperial.edu**
CRN #:	**10398**	Webpage (optional):	
Classroom:	**1100 bldg**	Office #:	**1100 Blgd.**
Class Dates:	**August 16 to Dec. 11 2021**	Office Hours:	**Thursday 7:00-8:00 am**
Class Days:	**Tuesday's & Thursday's**	Office Phone #:	**760-353-6403**
Class Times:	**Tuesday's 8:00am-12:25pm 1100Bldg Thursday's CANVAS**	Emergency Contact:	**760-353-6403**
Units:	**4.00**	Class Format:	**Hybrid**

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

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 Objective

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 Links

Equipment and Supplies:
1. Textbook: Modern Automotive Technology ISBN: 978-1-63563-424-2 or Canvas Common Cartridge Access Key Code
2. Personal Protective Equipment:
• Safety glasses, facemask.
• Work footwear.
• Proper shirt and pants.

Course Requirements and Instructional Methods

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 (60 points) will be given on October 12. It will be a multiple choice test Bring your Scantron, and pencil.
•Final-Exam (60 points) will be given on December 7. It will be a multiple choice test Bring your Scantron and pencil.
•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.

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.

Automotive Technology Classroom & Shop Policy

- 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.

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.
- Long hair must be kept in a ponytail or tucked away for safety.

Faculty and Staff:

All students are required to take direction from any faculty, any issues with direction should be brought up to your instructor, however all staff has the right to direct any student at any time. Please respect the staff's decisions.

Safety Requirements:

For every task perform in Engine Technology course the following safety requirements must be strictly enforced:

Comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.

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.

Other Course Information

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.

- CANVAS LMS. Canvas is Imperial Valley College's main Learning Management System. To log onto Canvas, use this link: Canvas Student Login. The Canvas Student Guides Site provides a variety of

support available to students 24 hours per day. Additionally, a 24/7 Canvas Support Hotline is available for students to use: 877-893-9853.

- 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.

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

Week 1: Class orientation, safety procedures, demonstrations, shop activities, and safety test chapter 5 Auto Shop Safety.
For every chapter in the course there will be a quiz and review question.
Week 2-3:
Chapter 56: Engine Removal, Disassembly, and Cleaning
Lab Activity: remove engine (front or rear wheel drive) prepare for disassembly
Week 4- 5:
Chapters 11-12: Engine Fundamentals (Engine operation), Engine Designs.
Lab activity: disassemble engine.
Week 6-7:
Chapter 14 and 57: Engine Bottom End Construction, Short Block Rebuilding and Machining.
Lab Activity: disassemble, inspect, repair and reassemble an engine block.
Week 8:
Chapter 13: Engine top End Construction.
Lab Activity: identified procedures involved in engine cylinder head..
Week 9: Mid-term
Week 10:
Chapter 58: Engine Top End Rebuilding.
Lab Activity: disassemble, inspect, repair and reassemble a cylinder head.
Week 11:
Chapter 15: Front End Construction.
Lab Activity: identify procedures involve in engine front end.
Week 12:
Chapter 59: Engine Frond End Service.
Lab Activity: disassemble and reassemble engine front end.
Week 13:
Chapter 16: Engine Size and Performance Measurements.
Lab activity: Explain volumetric efficiency, thermal efficiency, and mechanical efficiency.
Week 14:
Chapter 55: Engine Mechanical Problems.
Lab Activity: perform a vacuum and compression test.

Week 15:
Chapters 48 and 50: Cooling and Lubrication Systems Testing and Repair.
Lab Activity: service cooling and lubrication system.

Week 16:
Final-Exam

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

Work-based Learning

Career possibilities in automotive industry;

Work-based learning (WBL) allows students to apply classroom content in professional settings while gaining real-world experiences. These opportunities will provide you with a deeper, more engaging and relevant learning environment. This semester, you will be working on workplace simulations through the entire course. Some examples of WBL assignments are job shadowing, informational interviews, and guest speakers.

Contact:
Office Phone: (760) 355-5721
Email: careerservicescenter@imperial.edu

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