IMPERIAL VALLEY COLLEGE

Basic Course Information

Semester:	**Spring 2025**	Instructor Name:	**Ricardo Pradis**
Course Title & #:	**ENGINE TECHNOLOGY AUT-110**	Email:	**Ricardo.pradis@imperial.edu**
CRN #:	**20915**	Webpage (optional):	
Classroom:	**1103**	Office #:	**1100 Building**
Class Dates:	**Feb. 10 – June 6**	Office Hours:	**5:30-6:00 pm T-TH**
Class Days:	**Tuesday and Thursday**	Office Phone #:	**760-355-6403**
Class Times:	**6:00 – 7:05 PM 7:10 – 10:20 PM**	Emergency Contact:	**760-355-6361 (secretary)**
Units:	**4.00**	Class Format/Modality:	**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 include 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 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.

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Textbooks & Other Resources or Links

Equipment and Supplies:
1. Textbook: Modern Automotive Technology ISBN: 978-1-64564-688-4
2. Personal Protective Equipment:
• Safety glasses.
• 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 April 3.
•Final-Exam (60 points) will be given on June 4.
•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 engaged 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 it does have some coherence. Some evidence is provided which supports 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 conclusions. Block overall understanding. Does not meet assignment requirements.	0-11

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Academic Honesty (Artificial Intelligence -AI)

IVC values critical thinking and communication skills and considers academic integrity essential to learning. Using AI tools as a replacement for your own thinking, writing, or quantitative reasoning goes against both our mission and academic honesty policy and will be considered academic dishonesty, or plagiarism unless you have been instructed to do so by your instructor. In case of any uncertainty regarding the ethical use of AI tools, students are encouraged to reach out to their instructors for clarification.

Accessibility Statement

Imperial Valley College is committed to providing an accessible learning experience for all students, regardless of course modality. Every effort has been made to ensure that this course complies with all state and federal accessibility regulations, including Section 508 of the Rehabilitation Act, the Americans with Disabilities Act (ADA), and Title 5 of the California Code of Regulations. However, if you encounter any content that is not accessible, please contact your instructor or the area dean for assistance. If you have specific accommodations through ***DSPS***, contact them for additional assistance.

We are here to support you and ensure that you have equal access to all course materials.

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 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's 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 footwear, 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.

Safety Requirements:

For every task performed in the 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, no loud music.
A parking permit is always required.

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 students' responsibility.

Other Course Information

Career possibilities in the 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.

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Financial Aid

Your Grades Matter! In order to continue to receive financial aid, you must meet the Satisfactory Academic Progress (SAP) requirement. Makings SAP means that you are maintaining a 2.0 GPA, you have successfully completed 67% of your coursework, and you will graduate on time. If you do not maintain SAP, you may lose your financial aid. If you have questions, please contact financial aid at finaid@imperial.edu.

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

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
Week 1 Feb 10-13	Syllabus & Introduction Ford Online Training Chapter 5 Shop Safety	 Pages 55-66
Week 2-3 Feb 18-20 24-28	Chapter 1 and 56: The Automobile and Engine Removal. Inspect major parts of an automobile. Disassembly, and Cleaning Lab Activity: remove engine (front or rear wheel drive) prepare for disassembly.	 Pages 799-820
Week 4-5 March 3-7 10-14	Chapters 11-12: Engine Fundamentals (Engine operation), Engine Designs. Lab activity: disassemble engine.	 Pages 129-143 144-150
Week 6-7 March 17-21 24-28	Chapter 14 and 57: Engine Bottom End Construction, Short Block Rebuilding and Machining. Lab Activity: disassemble, inspect, repair, and reassemble an engine block	 Pages162-174 821-857

Week 8 March 31-April 4	MID-TERM	EXAM
Week 9 April 7-11	Chapter 13: Engine top End Construction. Lab Activity: identified procedures involved in engine cylinder head.	Pages 151-161
Week 10 April 14-18	Chapter 58: Engine Top End Rebuilding. Lab Activity: disassemble, inspect, repair and reassemble a cylinder head.	Pages 858-885
Week 11 April 28-May 2	Chapter 15: Front End Construction. Lab Activity: identify procedures involved in engine front end.	Pages 175-183
Week 12 May 5-9	Chapter 59: Engine Frond End Service. Lab Activity: disassemble and reassemble engine front end.	Pages 886-899

Week 13 May 12-16	Chapter 55: Engine Mechanical Problems. Lab Activity: perform a vacuum and compression test.	Pages 775-798
Week 14 May 19-23	Chapter 48 Cooling Systems Testing and Repair. Lab Activity: service cooling systems	Pages 656-677
Week 15 May 27 – 30	Chapter 50 Lubrication Systems Testing and Repair. Lab Activity: service lubrication system.	Pages 693-706
Week 16 June 2-6	FINAL-EXAM	EXAM

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