

Basic Course Information

Semester:	Spring 2016	Instructor Name:	Jose Perez
Course Title & #:	AUT-155 Suspension and Wheel Alignment	Email:	jose.perez@imperial.edu
CRN #:	20854	Webpage (optional):	
Classroom:	1100 Lec; 1102 Lab	Office #:	n/a
Class Dates:	Feb. 16- Jun 10 2016	Office Hours:	n/a
Class Days:	M/W	Office Phone #:	(760)355-6362
Class Times:	6:00- 9:10pm/6:00-9:10pm	Emergency Contact:	(760)337-2330
Units:	4		

Course Description

This course covers the principles and construction of passenger vehicle and light truck steering, chassis, and suspension system. Emphasis is placed on the skill required in the diagnosis, repair and adjustment of wheel alignment, including two and four wheel alignment angles. Complete suspension and overhaul will be done in laboratory activities, as well as alignment using either two or four wheel sensors. Upon successful completion of this course, students are prepared to take the Automotive Service Excellence (ASE) certification examination in steering wheel suspension. (CSU)

Student Learning Outcomes

Student learning outcomes are written statements that represent faculty and department learning goals for students. After successful completion of the program or degree at Imperial Valley College, students are expected to have measurable improvement in the following areas:

- *ISLO 1: Communication Skills*
- *ISLO 2: Critical Thinking Skills*
- *ISLO 3: Personal Responsibility*
- *ISLO 4: Informational Literacy*
- *ISLO 5: Global Awareness*

AUT-210 Automotive Air Conditioning will provide students with learning opportunities to improve in the five Institutional Student Learning Outcomes.

Course Objectives

Upon completion of this course the student will be able to:

- Explain the function of the various front and rear suspension components.
- Name the three basic types of front and rear suspension systems.
- Describe the makeup of manual rack-and-pinion steering gear assembly.
- State the operating principles of power rack-and-pinion steering gear assembly.
- Identify some typical suspension and steering system troubles and give possible causes.
- Compare basic tire types and tire sidewall markings.
- Describe excessive and uneven thread wear patterns and possible causes.
- List preliminary steps required before wheel alignment angles are set.
- Define the six front wheel angles and list the order in which they should be checked.
- List the preliminary checks that are necessary before making measurements of caster, camber, and toe-in.
- Give examples of typical rear wheel camber and toe-in checks and adjustments.

Textbooks & Other Resources or Links

Modern Automotive Technology 8th edition, James E. Duffy

Modern Automotive Technology (workbook) 8th edition, James E. Duffy

Course Requirements and Instructional Methods

You are required to by both the assigned textbook and workbook. All other reading material will be provided by the instructor. You will be required to attend both the lecture and lab in order to receive full credit for any assignments. There will be make-up opportunities for the labs throughout the semester.

Out of Class Assignments: The Department of Education policy states that one (1) credit hour 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

There will be a mid-term and a final exam. Each will be worth 25% of your grade. The mid-term will have 50 ASE questions. The final exam will have 100 ASE questions. Quizzes will make up 25% of your grade. The last 25% of your grade will be on projects assigned as part of the lecture and lab sections of the class.

Percentages:

Completed Assignments: 25%

Quizzes: 25%

Mid-term Exam: 25%

Final Exam: 25%

Total: 100%

Grading Scale:

100%- 90%= A

89%-80%= B

79%-70%= C

69%-60%=D

59% or less=F

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. 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.
- Each student is required to comply with the schedule established by Imperial Valley College and the Automotive Program. Students are required to attend each class session unless instructed otherwise. It is the student's responsibility to contact the instructor if he/she is to be absent. Three (3) tardies= 1 absence, four (4) absences and the student will be dropped from the class and receive an "N" INCOMPLETE.

Classroom Etiquette

- 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.
- No parking in front of the gate.
- No parking inside the shop during the lecture.
- No work should be done without the instructor's permission.
- No breaks longer than 10 minutes.

- Each student must clean their own work area.
- No leaving early without the instructor's permission.
- No helpers or visitors are allowed during lab activities.
- Safety glasses are to be worn during lab activities.

Online Netiquette

- 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 (!!!!)].

Academic Honesty

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.

Additional Student Services

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.

- [Blackboard Support Site](#). The Blackboard Support Site provides a variety of support channels available to students 24 hours per day.
- [Learning Services](#). There are several learning labs on campus to assist students through the use of computers and tutors. Please consult your [Learning Map](#) for the [Math Lab](#); [Reading, Writing & Language Lab](#); 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.

Disabled Student Programs and Services (DSPS)

Any student with a documented disability who may need educational accommodations should notify the instructor or the [Disabled Student Programs and Services](#) (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313. Please contact them if you feel you need to be evaluated for educational accommodations.

Student Counseling and Health Services

Students have counseling and health services available, provided by the pre-paid Student Health Fee.

- [Student Health Center](#). A Student Health Nurse is available on campus. In addition, Pioneers Memorial Healthcare District provide basic health services for students, such as first aid and care for minor illnesses. Contact the IVC [Student Health Center](#) at 760-355-6128 in Room 1536 for more information.
- [Mental Health Counseling Services](#). Short-term individual, couples, family, and group therapy are provided to currently enrolled students. Contact the IVC [Mental Health Counseling Services](#) at 760-355-6196 in Room 2109 for more information.

Student Rights and Responsibilities

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](#).

Information Literacy

Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. The IVC [Library Services](#) provides numerous [resources](#) to assist students in this endeavor.

Anticipated Class Schedule/Calendar

Spring 2016 Schedule

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
Week 1 Feb. 16 - 20	Class Orientation, Safety Procedures, Demonstrations, Shop Activities and Safety Test.	Safety Quiz
Week 2 Feb. 22 - 27	Chapter 1: The Automobile Parts, Assemblies, and Systems.	Pages 1 - 26 / Review and ASE Questions
Week 3 Feb. 29 - March 5	Chapter 3: Basic Hand tools Identify common hand tools. Safety rules for hand tools.	Pages 41 - 57 / Review and ASE Questions
Week 4 March 7 - 12	Chapter 4: Power Tools and Equipment List the most commonly used power tools and equipment	Pages 58 - 72 / Review and ASE Questions
Week 5 March 14 - 19	Chapter 74: Tire, Wheel, and Wheel Bearing Fundamentals Explain types and sizes of tires. Describe tire ratings and designations.	Pages 1483 - 1499 / Review and ASE Questions
Week 6 March 21- 26	Chapter 77: Suspension System Diagnosis and Repair. Diagnose problems relating to a suspension system. Replace shock absorbers and ball joints. Replace struts.	Pages 1546 - 1568 / Review and ASE Questions
March 28 / April 2	Spring Recess (Campus Closed)	
Week 7 April 4 - 9	Chapter 78: Steering Systems Fundamentals Operating principles of steering system. Identify major parts of steering system.	Pages 1569 - 1592 / Review and ASE Questions
Week 8 April 11 - 16	Mid-Term	
	Chapter 79: Steering System Diagnosis and Repair Describe common steering system problems. Inspect and determine the condition of a steering system	Pages 1593 - 1615 / Review and ASE Questions
Week 9 and 10 April 18 - 30	Chapter 80: Wheel Alignment Principles of wheel alignment. Pre-alignment inspection. Describe caster, camber, and toe adjustment.	
Week 11 May 2- 7	Chapter 73: Transaxle and Front Drive Axle and Repair Diagnose common transaxle and drive axle problems.	Pages 1461 - 1481 / Review and ASE Questions
Week 12 May 9 - 14	Chapter 23: Computer System Fundamentals	Pages 365 - 388 / Review and ASE Questions

Imperial Valley College Course Syllabus

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
	Describe the input, processing, and output sections of a basic computer system. Explain input sensor and output device classifications. Summarize where computers, sensors, and actuators are typically located.	
Week 13 May 16 – 21	Chapter 24; On-Board Diagnostics and Scan Tools Discuss the purpose and operation of on-board diagnostic systems. Explain the use of scan tools to simplify reading of trouble codes.	Pages 389 – 407 / Review and ASE Questions
Week 14 May 23 -28	Chapter 10 : Career Opportunities and Technician Certification	
Week15 May 31 – June 4	Troubleshooting and Repair ASE Preparation Exam	
Week 16 June 6 - 10	<u>Final Exam</u>	

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