

Basic Course Information

Semester	Fall 2015	Instructor's Name	Jose Lopez
Course Title & #	AUT 125	Email	Jose.lopez@imperial.edu
CRN #	10789	Webpage (optional)	
Room	1102-1103	Office	Part-Timers: Room N/A
Class Dates	Aug 17, 2015 – Dec 11, 2015	Office Hours	n/a for part-time faculty
Class Days/ Times	T R - 08:00AM - 09:25AM Room-1100-1101. M - 08:00AM - 11:10AM Room - 1100-1102	Office Phone #	(760)355-6361
Units	4 Units	Who Students Should Contact If Emergency Or Other Absence	Instructor: (760)355-6362

Course Description

This course covers the principles of instruction in disassembly, inspection, installation and adjustments of the modern brake system. Laboratory activities stress brake system diagnosis, repair, machining, and overhaul procedures and proper use of tools and equipment utilized in the industry. Upon successful completion of this course, students are prepared to take the automotive service excellence (ASE) certification examination in brakes.

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Diagnose brakes, and hydraulic valves components; determine necessary action. (IL01, IL02, IL03)
2. Repair and replace brake system assembly components. (IL01, IL02, IL03)
3. Disassemble, clean, and inspect brakes parts and accessories. (IL01, IL02, IL03)
4. Assemble brakes and their related parts.
5. Diagnose brakes noise and vibration problems; determine needed repair. (IL01, IL02, IL03)
6. Disassemble, clean, and inspect wheel and master cylinders . (IL01, IL02, IL03)

IVC as an institution has adopted five students learning outcomes (SLO'S). They are interconnected with each other. They will be inherent throughout this course:

1. Communication
2. Skills
3. Critical thinking Skills
4. Information literacy
5. Global awareness

Course Objectives

Upon successful completion of this course, students will be able to:

1. To prepare graduates for employment as automotive mechanics, parts and supply house technicians, and service station mechanics and operator. The training program is intended to meet the entry level skill needs in the occupational field of Automotive Technology (mechanics).
 - A. Comply with all safety shop procedures associated with stands, air tools, hydraulic jacks, and car lifts.
 - B. Have a thorough understanding of the engine system and its components
 - C. Describe the two and four cycles of the engine.
 - D. Describe the proper steps and procedures to disassembly and assembly engine section.

Textbooks & Other Resources or Links

Modern Automotive Technology (classroom) 7th edition – ISBN 978-1-61960-370-7

Modern Automotive Technology (workbook) 7th edition By James E. Duffy - ISBN 978-1-161960-375-2

Author: James E. Duffy

Course Requirements and Instructional Methods

Lectures, textbook/workbook, assignments, worksheets, video guide, internet information, live demonstrations, quizzes, mid-term and final tests.

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

Required Information—discretionary language

This section is where faculty would list their grading practices and grading scale, including point values and totals. Consider adding final grade calculation, rubrics, late assignments, and other grading practices.

Attendance

Required language

- 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 the 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.

Classroom Etiquette

Required Information --Discretionary language

This is where an instructor explains his/her policy on these matters. Here is some suggested language:

- Electronic Devices: Cell phones and electronic devices must be turned off and put away during class, unless otherwise directed by the instructor. **Consider:** specifics for your class/program
- 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.
- 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.

Academic Honesty

Required Language

- 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 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 School 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 Help – Discretionary Section and Language

The instructor can add the information pertinent to his or her class here. Some suggested language:

- Blackboard support center: <http://bbcrm.edusupportcenter.com/ics/support/default.asp?deptID=8543>
- Learning Labs: There are several 'labs' on campus to assist you through the use of computers, tutors, or a combination. Please consult your college map for the Math Lab, Reading & Writing Lab, and Study Skills Center (library). Please speak to the instructor about labs unique to your specific program.
- 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)

Required Language: 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, if you feel you need to be evaluated for educational accommodations.

Student Counseling and Health Services

Required Language: Students have counseling and health services available, provided by the pre-paid Student Health Fee. We now also have a fulltime mental health counselor. For information see <http://www.imperial.edu/students/student-health-center/>. The IVC Student Health Center is located in the Health Science building in Room 2109, telephone 760-355-6310.

Student Rights and Responsibilities

Required Language: Students have the right to experience a positive learning environment and due process. For further information regarding student rights and responsibilities, please refer to the IVC General Catalog available online at http://www.imperial.edu/index.php?option=com_docman&task=doc_download&gid=4516&Itemid=762

Information Literacy

Required Language: Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. Students can access tutorials at <http://www.imperial.edu/courses-and-programs/divisions/arts-and-letters/library-department/info-lit-tutorials/>

Anticipated Class Schedule / Calendar

Required Information –Discretionary Language and Formatting: The instructor will provide a tentative, provisional overview of the readings, assignments, tests, or other activities for the duration of the course. The faculty may find a table format useful for this purpose. There will be a mid-term and final exam. Each will be worth 25% of your grade. The mid-term will have 50 questions on ASE type, the final exam will have 100 ASE type questions. Quizzes will make up 25% of your grade. The last 25% of your grade will be on projects assigned as part of the lab section of class.

<u>Percentages</u>	<u>Scores</u>	<u>Letter grade</u>
25% Completed Assignments	130-115%	A
25% Quizzes	114-99%	B
25% Mid-term exams	98-83%	C
25% Final Exam	82-67%	D
30% Class Participation	66-00%	F

Assignments and Exams:

Exams will consist of information from class lectures, reading assignments, homework, videos, and class/lab activities.

❖ Assignments are due every Thursday.

Note: Time can be flexible with lectures, class assignments, lab activities or exams.

Make sure to:

- ❖ 1. To bring your textbook every section of lecture
- 2. To bring a notebook and pencils

Exams will consist of: class notes, class lectures, homework, videos and class/lab activities.

- 3. To BE ON TIME FOR CLASS.
- 4. To participate during lecture and lab activities
- 5. No late assignments or exams

Basic Rulers ad Shop Safety:

- ❖ No music allowed in the auto shop
- ❖ No parking in front of the gate
- ❖ No work should be done without instructor's permission
- ❖ No parking inside the shop during lecture time
- ❖ No long breaks (should be 10 minutes per hour class)
- ❖ Each student should clean the work area
- ❖ The student can not leave early without instructors permission
- ❖ No cell phones during class session
- ❖ No helpers or visitors during lab activities
- ❖ Safety glasses are required

Fall 2015 Important Dates:

❖ Late Registration	August 17-29
❖ Ticketing for parking violation starts	August 31
❖ Deadline to make up incomplete grade	September 25
❖ Financial Aid return to Title IV drop deadline	October 21
❖ Deadline to drop full term classes	November 7**
❖ Holidays	November 11 /26/28
❖ Last week of classes, including final examinations	December 7-11

NOTE: LECTURE ON CHAPTERS WILL BE SUBJECT TO CHANGES

Outline and Activities

<u>Week:</u>	<u>INTRODUCTION MANUAL</u> <u>Automotive Brakes</u>	<u>Homework/</u> <u>Exam:</u>	<u>Workbook</u> <u>Activities:</u>	<u>Lab Activity:</u> <u>Demonstrations:</u>
1st week	Orientation: <ul style="list-style-type: none"> - Safety - Types of brake systems - Safety and Brake fundamentals - Principles of braking and Drum/disc brakes - Parking, hydraulic, power brake boosters Anti-lock braking system, Brake service and repair.	Need to purchase textbooks Safety shop exam Assignments	Reviews Class workbook Class activity	Shop Equipment Air tools Presentations
2nd week	<u>Chapter 1 - The automobile</u> <ul style="list-style-type: none"> • Parts, Assemblies, and systems • Hybrid vehicle 	<u>Textbook</u> Chapter 1 - Review the main components and systems of the automobile. A.S.E. Questions Pages 27-28	Use your <u>Workbooks</u> and identify the following parts, assembling and systems Pages 11 - 18 Quiz	<u>Instructor</u> Show student a part component assembly, and system (out of a vehicle)
3rd Week Part I	<u>Chapter 3</u> <ul style="list-style-type: none"> • Basic hand tools • Identify common hand-tools • Safety rules for hand tools • Use hand tools safely 	<u>Textbook</u> <u>Homework</u> Chapter 3 Basic Hand Tools Review ASE questions on page 56-57	<u>Workbook</u> Basic Tools Chapter 3 Pages 23-28 Quiz	<u>Demonstration</u> Basic tools

<p>Part II</p>	<p><u>Chapter 4</u></p> <ul style="list-style-type: none"> • Power tools/equipment • Types of tools/equipment • Safety procedures for tools/equipment 	<p><u>Textbook</u></p> <p><u>Homework</u></p> <p>Chapter 4</p> <p>Review ASE</p> <p>Questions page 72</p> <p>Basic Tools quiz</p>	<p><u>Workbook - Activity</u></p> <p>Power tools and equipment</p> <p>pages 29-33</p> <p>Quiz</p>	<p><u>Demonstration</u></p> <p>Basic equipment</p> <p>Drill press</p> <p>Hydraulic press</p> <p>Jacks stands</p> <p>Hoist</p> <p>Air equipment</p>
<p>4th Week</p> <p>Part I</p>	<p><u>Chapter 6-Automotive Measurement and Math</u></p> <ul style="list-style-type: none"> • Measuring systems • Measuring Tools • Conversion charts • ASE Certification Test Questions 	<p><u>Textbook</u></p> <p><u>Chapter 6</u></p> <p>Review ASE</p> <p>questions on page 100-101</p>	<p><u>Workbook</u></p> <p>Answer pages 39-42</p> <p>Quiz</p>	<p><u>Demonstration</u></p> <p>*Shop measurements</p> <p>*Using rulers</p> <p>*Using conversion charts</p> <p>*Using a micrometer and calipers</p>
<p>5th Week</p> <p>Part II</p>	<ul style="list-style-type: none"> • Using a dial indicator • Using a temperature gauge • Using a digital multimeter <p>Chapter 7</p> <ul style="list-style-type: none"> • Service Information and work orders 	<p>Review Chapter 6</p> <p>Review Chapter 7</p> <p><u>Quiz</u></p>	<p><u>Class activity</u></p> <p>Using worksheets</p> <p><u>Workbook Activity</u></p> <p>Chapter 7 class activity Answer pages 43-45</p>	<p><u>Instructor's Plan</u></p> <p><u>Demonstration</u></p> <p>*Review terminology</p> <p>*Factory manuals</p> <p>*Repair Manuals</p> <p>*Other service information</p>
<p>6th Week</p>	<p><u>Chapter 9</u></p> <p><u>Fasteners, gaskets, seals, and sealants</u></p> <ul style="list-style-type: none"> • Identify commonly used automotive fasteners • Gaskets, seals, and sealants. 	<p><u>Textbook</u></p> <p>Chapter 9 Review</p> <p>ASE Questions on page 150</p>	<p><u>Workbook</u></p> <p>Chapter 9 activity</p> <p>answer pages 51-54</p>	<p><u>Class Demonstration</u></p> <p>*Auto-fasteners</p> <p>*Terminology</p> <p>*Locks</p> <p>*Cotter pin</p> <p>*Drill bits</p>

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<p>7th Week</p>	<p><u>Chapter 73.</u> <u>CV Joints - Front Drive Axle</u> Chapter 74 <u>Tire, Wheel, and Wheel bearings</u></p>	<p><u>Textbook</u> <u>Chapter 73</u> Review ASE questions page 1474-1475 <u>Quiz</u> A.S.E. Questions Pages 1497-1498</p>	<p><u>Workbook</u> Answer pages 483-488 Workbook Answer pages 489-497</p>	<p><u>Demonstration</u> Tires, wheels. CV joints, tire problems</p>
<p>8th Week Part I</p>	<p><u>Chapter 75</u> <u>Tire, Wheel, and Wheel Bearing - Service and repair</u></p>	<p><u>Textbook</u> <u>Chapter 75</u> Review ASE questions page 1520-1521 Quiz</p>	<p><u>Workbook</u> <u>Class open activity</u> answer pages 499-505</p>	<p><u>Class Demonstration</u> -Bearing -CV Joints -Tire problems</p>
<p>8th Week Part II</p>	<p><u>Chapter 77</u> <u>Suspension and steering technology</u> <u>Diagnosis/repair</u></p>	<p><u>Text Assignment</u> <u>Chapter 77</u> Review ASE questions page 1566-1567</p>	<p><u>Workbook</u> <u>Class open activity</u> answer pages 517-522</p>	<p><u>Class Demonstration</u> -Suspensions -Steering system</p>
<p>9th week</p>	<p><u>Chapter 81</u> <u>Brake System fundamentals</u></p> <ul style="list-style-type: none"> • Basic brake system • Brake system hydraulic • Brake system components • Parking brakes 	<p><u>Textbook</u> <u>Chapter 81</u> Review ASE Questions pages 1663-11664</p>	<p><u>Workbook</u> <u>Chapter 81</u> Open activity answer pages 545-555</p>	<p><u>Demonstration</u> -Brake components -Brake hydraulic valves -Master cylinders -Brake drum/disc brakes -Parking brake system</p>

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<p>10th week</p>	<p><u>Chapter 82</u> <u>Brake system diagnosis and repair</u></p>	<p><u>Textbook</u> <u>Chapter 82</u> Review ASE questions pages 1689-1690 <u>Quiz</u></p>	<p><u>Workbook</u> <u>Chapter 82</u> Class open activity Answer pages 557-566</p>	<p><u>Demonstration</u> Brake inspection Brake adjustment Brake bleeding Brake problems</p>
<p>11th week Part I</p>	<p><u>Chapter 22</u> <u>Computer system fundamentals</u></p>	<p><u>Textbook</u> <u>Chapter 22</u> Review ASE Questions page 259</p>	<p><u>Workbook</u> <u>Chapter 22</u> Activity pages 77-82</p>	<p><u>Demonstration</u> -Electrical circuits -Multimeters -Electrical/electronic problems</p>
<p>Part II</p>	<p><u>Chapter 23.</u> Computer System Fundamental</p>	<p><u>Chapter 23</u> Computer questions Pages 387-388</p>	<p><u>Workbook</u> <u>Chapter 23</u> Activity page 121-127</p>	
<p>12th week</p>	<p><u>Chapter 24</u> <u>On-board diagnostics and scan tools</u></p> <ul style="list-style-type: none"> • Scanning computer problems • Energizing OBDI system without a scan tool • Erasing trouble codes 	<p><u>Textbook</u> <u>Chapter 24</u> review ASE questions pages 405-406 <u>Quiz</u></p>	<p><u>Workbook</u> Activity pages 129-134</p>	<p><u>Demonstration</u> <u>Sensors</u> <u>Solenoides/relays</u> <u>Computers</u> <u>Scanners</u> <u>Computer System problems</u></p>

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<p>week 13th- 14th</p>	<p><u>Chapter 83</u> <u>Anti-Lock, brakes traction control, and stability control</u></p> <ul style="list-style-type: none"> • Traction and stability control system • ABS service • Final system check 	<p><u>Textbook</u> Chapter 83 Review ASE questions pages 1709-1710 <u>Quiz</u></p>	<p><u>Workbook</u> Chapter 83 open activity pages 567-572</p>	
<p>15th week</p>	<p><u>Chapter 10</u> <u>Career success</u></p> <ul style="list-style-type: none"> • Traits of desirable employees • Earnings • Types of shops • Getting a job as an automobile technician 	<p><u>Textbook</u> Chapter 10 Review ASE questions pages Activities</p>	<p><u>Workbook</u> Chapter 10 activity pages 55-56 A.S.E. Exams</p>	
<p>16th week</p>	<p><u>PREPARATION</u></p>	<p><u>FOR</u></p>	<p><u>FINAL</u></p>	<p><u>EXAMS</u></p>