

**Imperial Valley College**  
**Spring 2016**  
**Mechanical Automatic Transmissions**  
**AUT 220**  
**Syllabus**

**Basic Course Information**

Semester:	<b>Spring 2016</b>	Instructor Name:	<b>Jose Lopez</b>
Course Title & #:		Email:	<b>Jose.lopez@imperial.edu</b>
CRN #:	<b>20811</b>	Webpage (optional):	
Classroom:	<b>1103</b>	Office #:	<b>1102</b>
Class Dates:	<b>R 6:00 pm- 8:05pm</b> <b>S8:00am- 2:45pm</b>	Office Hours:	
Class Days:	<b>R &amp; S</b>	Office Phone #:	<b>760-355-6361</b>
Class Times:		Emergency Contact:	
Units:	<b>4 UNITS</b>		

**Course Description**

**Design construction, mechanical and hydraulic function and repair of the Automatic Transmission.**

**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 fluid loss and condition concerns; check fluid level in transmissions with and without dipsticks; determine necessary action. (IL01, IL02, IL03)
2. Inspect and replace external seals, gaskets, and bushings. (IL01, IL02, IL03)
3. Disassemble, clean, and inspect transmission/transaxle. (IL01, IL02, IL03)
4. Assemble transmission/transaxle. (IL01, IL02, IL03)

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

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

### Course Objectives

Upon satisfactory completion of the 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 operators. The training program is intended to meet the entry level skill needs in the occupational field of Automotive Technology (mechanics).

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

- A. Comply with all safety shop procedures associated with standards, air tools, hydraulic jacks, and car lifts.
- B. Have a though understanding of the Automatic Transmissions.
- C. Describe the power flows systems of the Automatic Transmissions.
- D. Describe the proper steps and procedures to disassembly and assembly Automatic Transmissions.

### Textbooks & Other Resources or Links

**Modern Automotive Technology Book & Workbook, 8<sup>th</sup> edition**  
**Author: James E, Duffy 1ISBN9781590709566**

### Course Requirements and Instructional Methods

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:** *Provide detailed information related to grading practices and grading scale, including values and totals. Consider adding final grade calculation, rubrics, late assignment policy, and other grading practices.]*

**Assignments and activities consist of:**

- Textbook
- Reviews
- Videos
- Laboratory activities
- Service manual
- Hands-on each section
- Other materials

Out of class:

Library computer software assignment. Read, review and answer the level 1, level 2, and level 3 ASE questions. After completion students will print out a report out the level were he/she needs support. Reading questions and writing:

Read, review, and answer Automotive Service Excellence (ASA) questions from ASE class booklet Motor age. When finished with an assignment, instructor will review each stamen with live transmissions components. The assignment consist of: 1. General transmission/transaxle diagnosis-25 questions. 2. Transmission/transaxle repair-13 questions.

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.

Percentage	Scores	Letter grade
25% Complete Assignments	100-90%	A
25% Quizzes	89-80%	B
25% Mid-term exams	79-70%	C
25% Final Exam	69-60%	D
	59-50%	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.

### Classroom Etiquette

**[Required Information:** Describe your policies regarding classroom conduct. The below is suggested language and may be modified for your course.]

- **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.

### Online Netiquette

*[Required Information for web-enhanced, hybrid and online courses: Describe your policies regarding netiquette. The below is suggested language and may be modified for your course.]*

- 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

*[Required language.]*

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

#### *[Suggested Language.]*

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 [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.

### 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 Department](#) provides numerous [Information Literacy Tutorials](#) to assist students in this endeavor.

### Anticipated Class Schedule/Calendar

#### Spring Class Schedule 2016

- **Classes begin: Feb 16, 2016**
- **Late Registration: Feb 27, 2016**

- Dead line to drop full-term classes: Feb 28, 2016
- Holiday May 30, 2016 (Spring Break): March 28 – April 01

Very important:

Midterm (60 points) will be given on April 04, 2016. It will be a multiple choice test “Bring your Scranton, and Pencil.”

Week	Activity, Assignment, and/or Topic	Class Activities	Quiz	Homework/Exams
Week 1	<b>Introduction Automatic Transmission</b> <ul style="list-style-type: none"> <li>• SAFETY</li> <li>• ORIENTATION TYPE OF Automatic Transmissions</li> <li>• Fluid coupling/torque converter</li> <li>• Function of clutches/bonds in automatics</li> <li>• Power flows</li> <li>• Three/four speeds</li> <li>• Maintenance/adjustments</li> <li>• Service/diagnostics</li> </ul>	<ul style="list-style-type: none"> <li>• Videos 1,2,3</li> <li>• Booklets</li> <li>• Tools for power train</li> <li>• DYNO Operation</li> <li>• Transmission activities</li> <li>• Safety exam</li> </ul>		Safety test  Textbook and workbook
Week 2	<b>Chapter 1 The Automobile</b> Parts, assembly, and systems Hybrid vehicle.	<b>Chapter 1</b> <u>open activity workbook</u> identify the following parts, assemblies and systems pages 11-18  <b>Instructor</b> show students a part component, assembly, and system (out of vehicle)	Quiz	Textbook Chapter 1  Review the main components and systems of the automotive pages 3-25 (read)
Week 3	<b>Chapter 3</b> <ul style="list-style-type: none"> <li>• Basic hand tools</li> <li>• Identify common hand tools</li> <li>• Safety rules for hands tools</li> <li>• Use hands tools safety</li> </ul>	<u>Open activity workbook</u>  Basic tools chapter 3	Quiz basic tools	Textbook Chapter 3  Review ASE questions page 72

Week	Activity, Assignment, and/or Topic Introduction Automatic Transmission	Class Activities	Quiz	Homework/Exams
		Pages 23-28  <u><b>Demonstration</b></u> <ul style="list-style-type: none"> <li>• Basic tools for transmission overhaul</li> <li>• Class activity</li> </ul>		homework
Part 2	<u><b>Chapter 4</b></u> <ul style="list-style-type: none"> <li>• Power tools/equipment</li> <li>• Types of tools/equipment</li> <li>• Safety procedures for tools/equipment</li> </ul>	<u><b>Open activity workbook</b></u>  Power tools and equipment pages 29-33  <u><b>Demonstration</b></u>  Basic equipment  Class activity	Quiz basic tools	Textbook Chapter 4  Review ASE questions page 72 homework
Part 3	<u><b>Chapter 5 Automotive Shop Safety</b></u> <ul style="list-style-type: none"> <li>• Layout auto shop</li> <li>• Types of accidents</li> <li>• General shop safety</li> </ul>	<u><b>Open activity workbook</b></u>  pages 35-38	exam	Textbook Chapter 5 read pages 73-82
Week 4	<u><b>Chapter 6 Automotive Measurement and math</b></u> <ul style="list-style-type: none"> <li>• Measuring tools</li> <li>• Other measurement and measuring tools</li> <li>• Using basic mathematic</li> </ul>	<u><b>Open activity workbook answer pages 39-42</b></u> <u><b>Demonstration.</b></u> <ul style="list-style-type: none"> <li>• Shop measurement</li> <li>• Using ruler</li> <li>• Using conversion charts</li> <li>• Using a micrometer and caliper</li> </ul>		Textbook Chapter 66 review ASE questions page 1358-1359

Week	Activity, Assignment, and/or Topic	Class Activities	Quiz	Homework/Exams
	<b>Introduction Automatic Transmission</b>			
		<ul style="list-style-type: none"> <li>• Using a dial indicator</li> <li>• Using a temperature unit</li> <li>• Using a digital multimeter</li> </ul>		
Week 5	<u><b>Chapter 66 Automatic Transmissions Fundamentals</b></u> <ul style="list-style-type: none"> <li>• Basic Automatic Transmission</li> <li>• Hydraulic system</li> <li>• Parking pawl</li> <li>• Automatic transmission power flow</li> <li>• Electronic transmission control</li> <li>• Continuously variable transmission</li> <li>• Complete transmission assembly</li> <li>• Highway history</li> </ul>	<u><b>Open activity workbook</b></u>  <u><b>Answer pages 437-437</b></u>  <u><b>Chapter 66</b></u>  <u><b>Demonstration and worksheets</b></u> <ul style="list-style-type: none"> <li>• Torque converter</li> <li>• Planetary gear</li> <li>• Drum/clutch assembly</li> <li>• Band and devices assembly</li> <li>• Pump assembly</li> <li>• Valve body assembly</li> <li>• Electronic unit</li> </ul>		Textbook Chapter 66 review ASE questions pages 1358-1359
Week 6 part 2				
Week 7	<u><b>Chapter 67 Automatic Transmission Service</b></u> <ul style="list-style-type: none"> <li>• Automatic transmission identification</li> <li>• Automatic transmission diagnosis</li> </ul>	<u><b>Chapter Activity Workbook</b></u>  <u><b>Answer pages 439-444</b></u>		Text Chapter 67 review ASE questions pages 1376-1377



Week	Activity, Assignment, and/or Topic	Class Activities	Quiz	Homework/Exams
Week 8	<p><b>Introduction Automatic Transmission</b></p> <ul style="list-style-type: none"> <li>• Automatic maintenance</li> <li>• Major transmission service</li> <li>• Automatic transmission and transaxle diagnosis</li> </ul>	<p><b><u>Demonstration and worksheets</u></b></p> <ul style="list-style-type: none"> <li>• Transmission and worksheets</li> <li>• Preliminary checks</li> <li>• Electrical connections</li> <li>• Shop testing</li> <li>• Road testing</li> <li>• Pressure test</li> <li>• Air test</li> <li>• Maintenance</li> <li>• Adjustments</li> <li>• Transmission removal</li> </ul>		
Week 9	<b><u>Review Chapter 66-57</u></b>	<b><u>Lab activity review</u></b>		<b>Midterm-exam</b>
Week 10	Review transmission worksheets 1 & 2.	<b><u>Provide live demonstrations of different types of power-trains.</u></b>	video	
Week 11	<p><b><u>Chapter 68 Transaxle and Front Drive Diagnosis and Repair</u></b></p> <ul style="list-style-type: none"> <li>• Diagnose common transaxle and drive axle problems.</li> <li>• Remove and install a transaxle assembly.</li> <li>• Replace CV-Joint on front drive axles.</li> </ul>			
Week 12	<b><u>Chapter 69 Case Diagnosis, service and Repair</u></b>	<b><u>Chapter 69 open activity workbook answer pages 451-453 demonstration and worksheets</u></b>		Textbook Chapter 69 review ASE questions page

Week	Activity, Assignment, and/or Topic Introduction Automatic Transmission	Class Activities	Quiz	Homework/Exams
		<ul style="list-style-type: none"> <li>• Troubleshoot shafts</li> <li>• Check universal joint</li> <li>• Remove and replace drive shaft.</li> </ul>		<b>Videos</b>
Week 13	<b><u>Chapter 72</u></b> <ul style="list-style-type: none"> <li>• Major parts transaxle</li> <li>• Operation of manual and automatic trans</li> </ul>	<b><u>Open activity workbook chapter 72</u></b>  Answer pages 475-482  Discussion  Types of power-trains	videos	Textbook Chapter 72 review ASE questions pages 1459-1460
Week 14	<b><u>Chapter 73 transaxle drive diagnosis and repair</u></b>	<b><u>Demonstrations with: Questions examples live demonstrations</u></b>		Preparation for ASE exam Chapter 73 pages 1474-1475
Week 15	<b><u>Preparation for final exam and worksheets</u></b>			
Week 16	<b><u>Transmission worksheets reviews demonstrations</u></b>			

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