

El Camino College

COURSE SYLLABUS

Fall 2015

| Course Information | | |
|---------------------------|--|---------------------------------|
| Course Title and Section: | ATEC-33-7270 | Credit Hours: 8 |
| Length of Course: | 16 Weeks | Contact Hours: 4 |
| Lecture/Lab Hours: | 5 hours lecture & 10 hours lab | Room: 132 lecture 130 lab |
| Class Meeting Times: | Lecture: Monday, Tuesday, Wednesday, & Thursday 2:00p-3:10p Lab: Monday, Tuesday, Wednesday, & Thursday 3:20p-5:50p | |
| Instructor: | Edward Matykiewicz | |
| Email: | ematykiewicz@elcamino.edu | |
| Phone: | (310) 660-3593 or Ext: 3593 | |
| Office: | | |
| Office Hours: | Monday through Thursday 1:00pm-2:00pm | |

Catalog Description

This course covers the study of automatic transmissions, manual transmissions, clutch, drive line and drive axle construction and operation. Laboratory activities stress drive train diagnosis, repair, overhaul procedures and the proper use of tools utilized in the field.

Prerequisites

None

Course Objectives

- Provide overview of automotive transmissions and driveline, theories of operation, & service skills consistent with automotive industry standards for work in automotive service industry.
- Summarize driveline systems training designed to develop critical thinking skills, allowing the student to competently understand how automotive driveline systems function as a whole.

- Conduct systematic inquiries with students on current industry business practices.
- Enhance students' reading, mathematical, writing, and communication skills necessary to compete successfully in the automotive service market.
- Develop in students an understanding of automotive industry business practices and ethical and professional conduct while serving the public's automotive needs.

Student Learning Outcomes

- Given an in class exam, based on readings, classroom discussions and demonstrations, the student will be able to work in the Automotive Shop safely and pass the Automotive Safety Exam with 100% accuracy.
- The student will inspect, test and evaluate operation of a manual transmission using manufacturer testing procedures and specifications.
- The student will disassemble, inspect, measure and evaluate the parts of a manual transmission, then reassemble and test the transmission using manufacturer procedures and specifications.
- The student will disassemble, inspect, measure, and evaluate the parts of an automatic transmission, then reassemble and test the automatic transmission using manufacturer procedures and specifications.
- The student will inspect, test, and evaluate operation of an automatic transmission using manufacturer testing procedures and specifications.

Weeks One and Two

Course Overview, Equipment & Safety Policies, Jobs in the Automotive Industry, Measurement, Service Information, and Lubrication Fluids

- Define the terms normally used to describe shop equipment.
- Use tools & equipment in a safe manner that they're designed for.
- Describe the different possible types of hazards in working in the automotive industry.
- Describe the differences between different types hazardous waste.
- Describe different kinds of automotive repair facilities.
- Understand how education provides a clear career path.
- Describe how to obtain various jobs in the automotive industry.
- Describe the common measuring devices/measurements used in transmission inspection.
- Understand the components, operation, and power flow of the drivetrain.
- Examine/Identify the condition, type, and amount of the fluid used in transmissions, transfer cases and differentials.
- Describe how to exchange the fluid from transmissions, transfer cases, and differentials.
- Compare service information to vehicle information to retrieve proper transmission identification.
- Describe the different types of vehicle identification that are used in the automotive industry.
- Understand different types of wire diagrams used in the diagnostic process.

Weeks Three and Four

Drive Line and Differential

- Explain how universal joints function.
- List the different driveshaft measurements used to diagnose vibration problems.
- Compare the different types of differentials to find service information.

- List the components of a differential and their function.
- Identify the different measurements used to verify correct assembly of the differential.
- Explain the function of a constant velocity shaft.
- Identify the different processes used in rebuilding a constant velocity shaft.

Weeks Five and Six **Drive Line and Differential**

- List the process for inspection of the ring gear for runout.
- Identify tooth contact patterns.
- Identify different ways to adjust pinion and ring gear contact.
- Define how to service different types of front wheel drive wheel bearings.
- Explain how to inspect universal joints.
- Explain how to measure driveshaft angle.

Weeks Seven and Eight **Drive Line and Midterm Exams**

- Explain the function of the driveshaft run out.
- Describe how to measure axle flange runout and shaft end play.
- Identify how to measure final turning torque of the differential assembly.
- Identify the components of a limited slip differential.
- Explain the operation of an electronic differential.

MIDTERM EXAM

Weeks Nine and Ten **Brakes, Manual Transmissions & Automatic Transmissions**

- Explain the function of the manual transmission.
- Identify the parts used in common manual transmissions.
- List the components found in common manual transmissions and describe how they function.
- Compare the different types of clutches and clutch linkages.
- Describe the function of throw out bearing.
- Define gear ratios inside a manual transmission.

Weeks Eleven and Twelve **Speed Sensors and Automatic Transmission Operation**

- Explain the purpose of a speed sensor.
- Compare the different types of speed sensors.
- Test the functions of an electronically controlled transmission using a scan tool.
- Describe the basic parts of an automatic transmission.
- Describe the process used to rebuild common automatic transmissions.

Weeks Thirteen and Fourteen **Automatic Transmission Operation & Hydraulic Operation**

- Explain the different types of gear sets used in an automatic transmission.
- Describe power flow through the gear set in an automatic transmission.
- Understand the function, inspection, disassembly, and assembly of a clutch pack.
- Discuss the how to inspect and rebuild a pump assembly in an automatic transmission.
- Identify the different types of pumps used in automatic transmissions.

- Explain the purpose and process of a pressure test.

Weeks Fifteen and Sixteen
PROJECT PRESENTATIONS & FINAL EXAM

Required Texts

Automatic Transmissions and Transaxles Classroom Manual, 5th edition (2011), by Jack Erjavec. Delmar Cengage Learning, % Maxwell Drive Clifton Park, NY 12065.

ISBN-13: 978-1-4354-8103-9

ISBN-10: 1-4354-8103-8

Automatic Transmissions and Transaxles Shop Manual, 5th edition (2011), by Jack Erjavec. Delmar Cengage Learning, % Maxwell Drive Clifton Park, NY 12065.

ISBN-13: 978-1-4354-8104-6

ISBN-10: 1-4354-8104-6

Manual Transmissions and Transaxles Classroom Manual, 5th edition (2011), by Jack Erjavec. Delmar Cengage Learning, % Maxwell Drive Clifton Park, NY 12065.

ISBN-13: 978-1-4354-2685-6

ISBN-10: 1-4354-2685-1

Manual Transmissions and Transaxles Shop Manual, 5th edition (2011), by Jack Erjavec. Delmar Cengage Learning, % Maxwell Drive Clifton Park, NY 12065.

ISBN-13: 978-1-4354-2835-5

ISBN-10: 1-4354-2835-8

Required Materials

- safety eyewear
- basic hand tools
- hook and pick set
- pocket screw driver
- one-inch, three-ring binder
- college-ruled notebook

Methods of Evaluation/Grade Scale

| | |
|-------------|---|
| A – 90-100% | Excellent execution or competency. Minimal room for further development. |
| B – 80-89% | Above average execution or competency. Moderate room for further development. |
| C – 70-79% | Satisfactory execution or competency. Ample room for further development. |
| D – 60-69% | Substandard execution or competency. Significant room for further development. |
| F – 0-59% | The student's performance was inadequate relative to the established expectations for the course. |

| | | |
|--|--------------------|-------------------------|
| Quiz | 60 points | 4% |
| Class Writing Assignment | 290 points | 19% |
| Mid-term | 125 points | 8% |
| Homework | 310 points | 21% |
| Project | 100 points | 6% |
| Lab exercises & participation | 500 points | 34% |
| Final | 125 points | 8% |
| Total | 1510 points | 100% grade total |

Methods of Assessment

A student's grade will be based on multiple measures of performance:

- Grades from written quizzes and examinations
- Grades from practical examination of competency skills
- Completion of course assignments
- Class writing assignment
- Class participation and leadership
- Demonstrated skills competency in performing laboratory assignment
- Ability to internalize information and perform task requiring learned skills

Methods of Instruction

In this class, we will utilize various methods of instructions, including:

- Lectures
- Multimedia demonstrations
- In-class discussions based on assignments
- Computer-based training
- Lab-based learning
- Quizzes
- Class participation and leadership
- Writing assignments
- Homework assignments
- Reading assignments

Statement of Active Pursuit

No food. No sleeping. No phone use. Leaving during class to use your phone – and coming and going in and out of the classroom during the class session in general – is unacceptable and will not

be tolerated. Inattentiveness to the course material and other forms of inappropriate class behavior will result, at minimum, in a reduced grade. Students will be notified at the start of class when the break in class time will be given.

No Show Policy

If a student registered for the course before the start time of the first class period but 1) did not attend the first two classes, or 2) attended only one of the first three classes and failed to notify the instructor of his or her intentions to continue the class, the student will be removed from the course.

Academic Integrity

Plagiarism: El Camino College places a high value on the integrity of its student scholars. When an instructor determines that there is evidence of dishonesty in any academic work (including, but not limited to cheating, plagiarism, or theft of exam material), disciplinary action appropriate to the misconduct as defined in BP 5500 may be taken. A failing grade on an assignment in which academic dishonesty has occurred and suspension from class are among the disciplinary actions for academic dishonesty (AP 5520). Students with any questions about the Academic Honesty or discipline policies are encouraged to speak with their instructor in advance.

Cheating: Cheating of any kind is also a serious breach of academic integrity.

Penalties for Plagiarism and Cheating: In the first instance of academic integrity violation, the instructor will assign a grade of zero/F to the assignment and counsel the student accordingly. If a second violation occurs, the instructor will contact the Department Chair and Dean to determine a course of disciplinary action.

Accommodations

It is the policy of the El Camino Community College District to encourage full inclusion of people with disabilities in all programs and services. Students with disabilities who believe they may need accommodations in this class should contact the campus Special Resource Center (310) 660-3295, as soon as possible. This will ensure that students are able to fully participate.

Student Conduct

Students are expected to conduct themselves in a manner which is considerate of the rights of others and which will not impair the educational mission of the College. Misconduct for which students are subject to College Discipline (e.g. expulsion) may include the following: (1) all forms of dishonesty such as stealing, forgery, (2) obstruction or disruption of teaching, research, administration, disciplinary proceeding, (3) physical or verbal abuse, threats, intimidation, harassment, and/or other conduct that threatens or endangers the health or safety of any person, and (4) carrying or possession of weapons, ammunition or other explosives.

HOMEWORK

Homework will be assigned for each class session. Student should plan on 2 to 4 hours of homework per week. Homework will consist of reading assignments, review questions, and ASE Certification-type questions from the required text. You are expected to complete the reading assignments and homework **before** they are covered in class. See course outline for homework schedule from text. Homework from text will be due at the **start** of each class session five minutes

after the scheduled class start time. There will also be worksheets and other activities assigned as necessary; assigned worksheets and activities will be due the next class session. Homework assignments will be collected for credit.

Attendance

Be on time. If you are late, and do not call before the class start time, you may be asked to leave and will not receive credit for the assignment that day. Attendance is expected for all class meetings. If you are sick or have a personal emergency, **e-mail the instructor**. If you do not contact me, an unexcused absence will be recorded. There will be only **two** excused absences per semester. Absences will affect your grade and may impact whether you receive a passing grade for the class. Any student on the roster who does not attend the first two class sessions and does not contact the instructor may be dropped without notice. **If you attend the first few class sessions but then stop coming to class, it is YOUR responsibility to drop the class.**

Late Work & Make Up Work Policy

Late assignments (those that are submitted after 6:05pm on the due date) will **not** be accepted and cannot be made up after the assignment has been collected and discussed in class.

Makeup Exams

If a student knows he or she will miss an upcoming exam, he or she must notify the instructor **before** the exam date in order to schedule a makeup exam. Makeup exams will only be allowed if the instructor has been notified prior to missing the exam. In case of illness, jury duty, or other exceptional circumstances, a makeup exam may be offered only if the student brings the instructor an official note from a doctor, court official, or other authority.

QUIZZES/EXAMS

Exams will consist of written and hands-on portions; be prepared to work in the laboratory for the hands-on portion of each exam. One make-up exam is allowed if a student is absent for an exam due to illness or personal emergency. The student must make arrangements with the instructor for a make-up exam; it is the student's responsibility. In case of illness, jury duty, or other exceptional circumstances, a makeup exam may be offered only if the student brings the instructor an official documentation from a doctor, court official, or other authority. If no arrangements are made to make up the exam, the grade will be zero. **There is no make-up allowed for the final exam.**

Extra Credit

None

| Week 1 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-------------------|------------------------------------|-----------------------------------|---|---|--------|
| Objectives | Syllabus Shop tour Equipment | Automotive Service Industry | Measurements | Power train as a whole | |
| Due Today | | Safety Glasses | Auto Trans Ch. 1 <i>Multiple Choice</i> | Man. Trans. Ch. 1 & 2 <i>Multiple Choice</i> Man. Trans. Shop Ch. 1&2 <i>Multiple Choice</i> | |
| In Class Topic | Safety | Jobs in Auto | Measurement Devices | Power train layout/inspection | |
| Mandatory | | | Auto Trans Ch. | Man. Trans. Ch. 1 & 2 | |

| | | | | | |
|-------------------|--|--|---|--------------------------|--|
| Reading Due Today | | | 1 | Man. Trans. Shop Ch. 1&2 | |
|-------------------|--|--|---|--------------------------|--|

| Week 2 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|--|---|---|-------------------------|--------|
| Objectives | Fluids Identification | Service information | Electrical fundamentals | Circuits | |
| Due Today | | | Man. Trans. Ch. 10 <i>Multiple Choice</i> Man. Trans. Shop Ch. 10 <i>Multiple Choice</i> | | |
| In Class Topic | Fluid Inspection/ Transmission Identification | All data / VIN information/ Vici sticker | Wire diagrams | Electrical Measurements | |
| Mandatory Reading Due Today | | | Man. Trans. Ch. 10 Man. Trans. Shop Ch. 10 | | |

| Week 3 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|-----------|---|---------------------------------------|---|--------|
| Objectives | No school | U joints | Drive line Phasing | Differential Identification | |
| Due Today | No school | Man. Trans. Ch. 5 & 6 <i>Multiple Choice</i> Man. Trans. Shop Ch. 5&6 <i>Multiple Choice</i> | | | |
| In Class Topic | No school | <i>Demo:</i> universal joints | <i>Demo:</i> driveshaft angle/ runout | Differential Identification/ Service information | |
| Mandatory Reading Due Today | No school | Man. Trans. Ch. 5 & 6 Man. Trans. Shop Ch. 5&6 | | | |

| Week 4 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|---|---|---|--|--------|
| Objectives | Differential operation | Differential Tear down | Differential Tear down | Differential Tear down | |
| Due Today | Man. Trans. Ch. 7 <i>Multiple Choice</i> Man. Trans. Shop Ch. 7 <i>Multiple Choice</i> | | | | |
| In Class Topic | Measure backlash/ Total turning torque/ CV shaft rebuild | Inspect ring gear & measure runout/ CV shaft removal | Measure pinion depth/ Driveshaft angle | Removal of pinion bearings/ Driveshaft runout measurement | |
| Mandatory Reading Due Today | Man. Trans. Ch. 7 Man. Trans. Shop Ch. 7 | | | | |

| Week 5 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|---|--|--|---------------------------------|---------------|
| Objectives | Differential inspection | Differential inspection | Differential measurement | Differential Final inspection | |
| Due Today | Man. Trans. Ch. 8 <i>Multiple Choice</i> Man. Trans. Shop Ch. 8 Multiple Choice | | | | |
| In Class Topic | Measure differential shims/ U joint inspection removal | Measure differential backlash/ Wheel bearing inspection | Tooth contact patterns/ Axle flange runout and shaft end play | Final turning toque measurement | |
| Mandatory Reading Due Today | Man. Trans. Ch. 8 Man. Trans. Shop Ch. 8 | | | | |

| Week 6 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|--|---|---|--|---------------|
| Objectives | Differential operation | Differential Tear down | Differential Tear down | Differential Tear down | |
| Due Today | | | | | |
| In Class Topic | Measure backlash/Total turning torque/ CV shaft rebuild | Inspect ring gear and measure runout/ CV shaft removal | Measure pinion depth/ Driveshaft angle | Removal of pinion bearings/ Driveshaft runout measurement | |
| Mandatory Reading Due Today | | | | | |

| Week 7 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|---|--|--|----------------------------------|---------------|
| Objectives | Differential inspection | Differential inspection | Differential measurement | Differential Final inspection | |
| Due Today | | | | | |
| In Class Topic | Measure differential shims/ U joint inspection removal | Measure differential backlash/ Wheel bearing inspection | tooth contact patterns/ axle flange runout and shaft end play | Final turning toque measurement, | |
| Mandatory Reading Due Today | | | | Study for midterm Exam | |

| Week 8 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|-------------------------------|-----------------------------|------------------|---|---------------|
| Objectives | Midterm exams | Midterm exams | Midterm exams | manual transmission | |
| Due Today | Lab binder | | | Man. Trans. Ch. 4 <i>Multiple Choice</i> Man. Trans. Shop Ch. 4 <i>Multiple Choice</i> | |
| In Class Topic | Practical midterm exam | Written midterm exam | Review midterm | Power flow through the gears | |
| Mandatory Reading Due Today | | | | Man. Trans. Ch. 4 Man. Trans. Shop Ch. 4 | |

| Week 9 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|--|--------------------------------|------------------------------------|---|---------------|
| Objectives | manual transmission Inspection | manual transmission Inspection | manual transmission Inspection | manual transmission Inspection | |
| Due Today | | | | Man. Trans. Ch. 3 <i>Multiple Choice</i> Man. Trans. Shop Ch. 3 <i>Multiple Choice</i> | |
| In Class Topic | Service information/ Measurement of end play | Disassemble Trans | Shifter linkage/ Disassemble Trans | Fly wheels, Pressure plates, Throw out bearings | |
| Mandatory Reading Due Today | | | | Man. Trans. Ch. 3 Man. Trans. Shop Ch. 3 | |

| Week 10 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|---------------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------|
| Objectives | manual transmission Inspection | manual transmission Inspection | manual transmission reassemble | manual transmission reassemble | |
| Due Today | | | | | |
| In Class Topic | Gear ratios/ power flow through gears | Bearing & shim inspection | Synchro rings operation | Synchro rings inspection | |
| Mandatory Reading Due Today | | | | | |

| Week 11 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|--------------------------------|---|------------------|-----------------|---------------|
| Objectives | manual transmission reassemble | Speed sensors | Speed sensors | Speed sensors | |
| Due Today | | Man. Trans. Ch. 11 <i>Multiple Choice</i> Man. Trans. Shop Ch. 11 <i>Multiple Choice</i> | | | |
| In Class Topic | Vacuum operation | Hall effect | Pulse generator | scan tool data | |
| Mandatory Reading Due Today | | Man. Trans. Ch. 11 Man. Trans. Shop Ch. 11 | | | |

| Week 12 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|---|----------------------------|-----------------------------------|--------------------------|---------------|
| Objectives | Automatic Transmission | Automatic Transmission | Automatic Transmission | Automatic Transmission | |
| Due Today | Auto. Trans. Ch. 3&5 <i>Multiple Choice</i> Auto. Trans. Shop Ch. 3&5 <i>Multiple Choice</i> | | | | |
| In Class Topic | Auto trans. operation | Auto trans. identification | Transmission end play measurement | Transmission Disassemble | |
| Mandatory Reading Due Today | Auto. Trans. Ch. 3&5 Auto. Trans. Shop Ch. 3&5 | | | | |

| Week 13 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|-------------------------|---|-------------------------|---------------------------------------|---------------|
| Objectives | Automatic Transmission | Automatic Transmission | Automatic Transmission | Automatic Transmission | |
| Due Today | | Auto. Trans. Ch. 8 <i>Multiple Choice</i> Auto. Trans. Shop Ch. 8 <i>Multiple Choice</i> | | | |
| In Class Topic | Clutch pack measurement | Power flow through the gear set | Clutch pack disassemble | Clutch pack reassemble pressure check | |
| Mandatory Reading Due Today | | Auto. Trans. Ch. 8 Auto. Trans. Shop Ch. 8 | | | |

| Week 14 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|---|---------------------|---------------------|--------------------------|---------------|
| Objectives | Hydraulic Operation | Hydraulic Operation | Hydraulic Operation | Thanksgiving No Class | |
| Due Today | Auto. Trans. Ch. 6 &7 <i>Multiple Choice</i> Auto. Trans. Shop Ch. 6 &7 <i>Multiple Choice</i> | | | | |
| In Class Topic | Pressure test | Fluid inspection | Pump measurement | | |
| Mandatory Reading Due Today | Auto. Trans. Ch. 6 &7 Auto. Trans. Shop Ch. 6 &7 | | | | |

| Week 15 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|------------------------|--|-----------------------------------|---------------------------------|---------------|
| Objectives | Transmission assemble | Transmission assemble | Dyno testing | Dyno testing | |
| Due Today | | Auto. Trans. Ch. 9 <i>Multiple Choice</i> Man. Trans. Shop Ch. 9 <i>Multiple Choice</i> | | Final Project Binder due | |
| In Class Topic | Measure thrust washers | Sprag clutches | Transmission end play measurement | | |
| Mandatory Reading Due Today | | Auto. Trans. Ch. 9 Auto. Trans. Shop Ch. 9 | | | |

| Week 16 | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----------------------------|--|--|------------------|----------------------------------|---------------|
| Objectives | Exam | Exam | Exam | Exam review | |
| Due Today | Final Project Hands on final exam part 1 | Final Project Hands on final exam part 2 | Final Exam | Sign off on final exam | |
| In Class Topic | | Final exam | | Review exam & course evaluations | |
| Mandatory Reading Due Today | | | | | |

CRITICAL DATES

| | |
|---|----------------------------------|
| Last Day to Drop Without Notation on Permanent Record | Friday, September 4, 2015 |
| Last Day to Drop for an Enrollment Fee Refund | Friday, September 4, 2015 |
| Last Day to Challenge Residency Stat for Current Semester | Friday, September 4, 2015 |
| Labor Day Holiday (Campus Closed) | Monday, September 7, 2015 |
| Last Day to Apply for Degrees and Certificates (Fall) | Friday, October 9, 2015 |

Veterans Day Holiday (Campus Closed)
Last Day to Drop with a "W"
Thanksgiving Holiday (Campus Closed)

Last Day of Semester

Wednesday, November 11, 2015
Friday, November 13, 2015
Thursday, November 26 –
Sunday, November 29, 2015
Friday, December 11, 2015

SAFETY

Safety is paramount! Never perform any unsafe shop practice. Never operate any equipment or use any tool unless you have gone over the safety practices related to that particular piece of equipment. Immediately inform the instructor or shop foreman of any unsafe conditions in the classroom, in the shop or with a vehicle. Do not allow your fellow students to perform any unsafe shop practices. Shop safety practices and material use will be reviewed prior to going into the shop. Points covered will include tool safety, chemicals, and potential hazards when working on a vehicle. **SAFETY VIOLATIONS WILL NOT BE TOLERATED.** Safety violations may result in your grade being lowered or removal from the class, as deemed by the instructor.

LAB ACTIVITIES

The class will be divided into teams and each team will select a team leader. The team leader will be responsible for his or her team's performance during lab activities, assuring that shop safety practices are followed, tools and equipment are properly put away, and the assigned work area is cleaned after the activities. Each team member must complete all of the assigned lab activities. Lab sheets for the week are the responsibility of each individual student to print. Printing can be done in the library, a public library, or a store with printing services. Students may not print their papers in the automotive lab.

Professional Attitude & Workmanship

Be respectful of others and their vehicles. Always use floor mats, seat covers, and fender covers. When servicing, troubleshooting, or repairing a vehicle, you are expected to make quality repairs, returning the vehicle to factory specifications. Carefully and completely perform each task. This includes verifying the repair has been made and the vehicle is safe to drive and in good working order, cleaning up your work area, and returning any tools and equipment to their proper location(s). Quality workmanship is required. Do not take shortcuts or be hasty when servicing, troubleshooting, or repairing vehicles. Always follow the manufacturer prescribed procedures. This course is designed to be approximately 1/2 lecture, 1/2 shop and lab activities. Some sessions will be all classroom, others all shop/lab, and some will be split. Be prepared for shop/lab activities at each class meeting. Discuss bringing in your own vehicle with the instructor. Relevant work may be permitted by the instructor on a case-by-case basis.

Tools & Equipment

SAFETY GLASSES ARE REQUIRED!!! You are expected to treat tools and equipment with the highest level of professionalism. These items are expensive and must be used by a large number of students each semester. Any abuse, misuse, or lack of care for tools or equipment will result in the loss of use. In regard to tool & equipment usage, you are expected to:

- Use them in accordance with safety guidelines
- Use them only for designed purposes
- Return them to the assigned location in the shop, tool room, or boxes at the end of each lab session (they are to be clean and properly put back in their case)
- Sweep and mop your work area after each lab session
- Wash shop vehicles as needed

Shop Clothing/ Food & Beverages

Your apparel should be professional. You are expected to wear appropriate shop clothing. When working in the shop, you **MUST WEAR SAFETY GLASSES AT ALL TIMES**, work boots/shoes (must enclose entire foot), and a shop type shirt and pants. Shorts are not acceptable. For safety, all jewelry must be removed and long hair must be tied back. Food and beverages are not allowed in the classroom or shop with the exception of water.

Computer Usage

Use of Automotive/Advanced Transportation desktop and laptop computers is restricted to course related work. Any abuse, misuse, or inappropriate use will result in loss of access to the computers. Any and all use must comply with El Camino College STUDENT CONDUCT STANDARDS and computer usage standards. Students may use computers for course work other than automotive depending on availability.

E-mail Policy

1. **Students must use the e-mail account provided by El Camino College as their official means of email communication for all business related to this course.** Any email that does not come directly from your El Camino College e-mail (*username@elcamino.edu*) may be filtered by spam or junk mail filters, may get deleted, or may get a delayed response. This means if you choose to forward your El Camino College e-mail account to some other e-mail account (such as *username@comcast.net*, or *username@yahoo.com*, or *username@gmail.com*), then do **not** send a response to the instructor from that third party account. All responses should come directly from your El Camino College account.
2. **The subject line of all e-mail to the instructor must begin with the course number AND section number followed by the topic.** The course number and section for this course is: **ATEC-33-7270**. Here are some examples:
 - Subject: ATEC-33-7270, Missed class - When is quiz #2?
 - Subject: ATEC-33-7270, When will my Lab 3 grade be posted?
 - Subject: ATEC-33-7270, Question on assignment 12
 - Subject: ATEC-33-7270, Final Exam DateE-mail without a subject may not be read and will probably be deleted.
3. **The body of the e-mail must include at least one complete sentence AND be “signed” with your full first and last name.** When asking for help, please do your best to be specific about the question(s) and always “sign” your e-mail at the bottom by typing your full first and last name. If you are requesting a phone call back, include your phone number with area code.

AUTOMOTIVE STUDENT POLICY

- Students will arrive at their assigned classrooms at the scheduled start time of the class.
- Operation of any shop equipment without safety training is grounds for removal from the course.

- Before any vehicle can be inspected, serviced, diagnosed, or repaired, an El Camino College Repair Order must be completed including the ***signature of the registered owner***.
- No electronic recording devices are allowed without special permission from the instructor.
- Use of indecent or abusive language by students towards an instructor or fellow student will not be tolerated. Any student observed using such language will be dismissed from class for the remainder of the day. Repeated violation will result in disciplinary action up to and including dismissal from the automotive program.
- Students and instructors will make sure that areas in which they work are cleaned at the end of each class.
- Students will not solicit automotive repair work for personal gain (money).
- Student vehicle parking is restricted to the designated student parking lot. Students will not park their vehicles in the areas located on the entrance side of the Automotive Technology area unless authorized by the instructor. Vehicles found in violation of parking restrictions will be ticketed and/or towed.
- If you **leave class early** or **do not sign out** at the end of the day, you will lose points from the days activities. If leaving early **causes you to miss over two hours** of class time, it will automatically be considered an **absence** (see Attendance rules above).
- Report to the instructor any defective/inoperable equipment.
- Respect property belonging to other students or to the college.
- Prevent waste of materials.
- Students will supply their own set of hand tools for performing basic operations in the lab. Specialty tools are available through a check-out system from the tool room.
- Students are urged to have identification marks on all of their tools and equipment.
- Tools will be taken from the tool room using a tag checkout system. **A PICTURE I.D. IS REQUIRED TO CHECK OUT ANY TOOLS/EQUIPMENT FROM THE TOOL ROOM.**
- Tools must be cleaned before returning them to the tool room.
- All student projects must be removed from the automotive lab before the end of the semester. Projects left at the end of the semester will be disposed of.

Minimum tool list

1. Combination wrench set; metric/SAE
2. Socket set; 3/8" drive ratchet
3. 3/8" drive universal
4. 3/8" drive extensions (3", 6", 12")
5. 3/8" drive metric/SAE 6 point sockets,
6. Standard screwdrivers (3 total), 2", 4", & 6"
7. Phillips screwdriver (3 total) **2** - No. 2 tip long and short & **1** - No. 3 tip long
8. Combination pliers 6"
9. Diagonal side cutters 6"
10. Needle nose pliers 6"
11. Allen wrench set (US & metric)
12. Torx driver set
13. Hammer, Ball peen
14. Rubber mallet
15. Tire pressure gauge
16. Feeler gauges Standard and metric

SAFETY GLASSES ARE REQUIRED FOR ALL AUTO TECH CLASSES

EL Camino College

COURSE SYLLABUS

Fall 2015

ATEC-33-7270

I have read and understand all of the regulations, requirements, and grading procedures of this course.

I acknowledge that the progression of the course outline presented by the instructor is a guideline and that actual course progression may differ.

I must strictly observe El Camino College's and the instructor's attendance requirements, safety regulations, shop rules, and student policies or be terminated from the course.

Signature

Date