

Spring 2013  
AUTO 150  
AUTOMOTIVE ELECTRONICS II

Instructor: David Martinez

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Semester begins: January 14<sup>th</sup>, 2013

Ends: May 10<sup>th</sup>, 2013

TEXTBOOK AND WORKBOOK:

Modern Automotive Technology by James E. Duffy  
Scientific Calculator

COURSE DESCRIPTION:

This course is designed for technicians or students, certified or not, who want to service the automotive electronic circuitry. The course provides a solid core of electronics based on microprocessor technology. Students will diagnosed the various systems that include: engine computer control, transmission computer control, suspension antilock brake system, and automotive instrumentation. Upon completing this course, students will be prepared to take the Automotive Service Excellence ASE examination.

RESPONSIBILITIES:

Each student is required to comply with the schedule established by Imperial Valley College and The Automotive Program. Students should attend class each day class is in session. If for any reason a student is absent, she or he is responsible for making up any missed work. It is recommended that students call the office to inform the instructor if they are ill and or bring a doctor's released note.

## GRADING SYSTEM:

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 type questions. 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.

### Percentages

25% Completed Assignments

25% Quizzes

25% Mid-term exam

25% Final Exam

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100 %

### Grading Scale

100-90% A

89-80% B

79-70% C

69-60% D

59-50% F

STUDENT LEARNING OUTCOMES: IVC as an Institution has adopted five Student Learning Outcomes (SLO'S). They are interconnected with each other. The will be inherent throughout this course:

1. Communication
2. Skills
3. Critical Thinking Skills
4. Information Literacy

	<p>and resistance wire</p> <ul style="list-style-type: none"> <li>- Thermistors, block resistors, ballast resistors, and multi-switch resistors</li> <li>- PTC resistors and photo resistors</li> </ul> <p>Class Activity</p> <ul style="list-style-type: none"> <li>- Resistance values and different resistors</li> <li>- Diodes</li> <li>- Transistors</li> <li>- Circuit protection</li> <li>- Coils</li> </ul>	<ul style="list-style-type: none"> <li>- Fixed resistors</li> <li>- Adjustable resistors</li> <li>- Other electronic resistors</li> </ul>	And worksheets
5 <sup>th</sup> Week	<p><u>Part II Operation, Application and Component Characteristic</u></p> <ul style="list-style-type: none"> <li>- Diodes, Zener Diodes, photo diode and photo cell</li> <li>- Photo-transistor and types transistors</li> <li>- Piezo Crystal, Liquid crystal, fiber, optics and solar cell</li> <li>- Circuit breaker, fuses and fuse link</li> <li>- Testing diodes and LEDS</li> <li>- Reviews for Mid-Term Exam</li> </ul> <p>Class Activity</p> <ul style="list-style-type: none"> <li>- Diodes</li> <li>- Transistors</li> <li>- Circuit protection</li> <li>- Coils</li> </ul>	<p>Class Activity Worksheets for:</p> <ul style="list-style-type: none"> <li>- Diodes</li> <li>- Transistors</li> <li>- Piezo Crystal</li> <li>- LEDS</li> </ul>	Handouts and Worksheets
6 <sup>th</sup> Week	<p><u>Transistors</u></p> <ul style="list-style-type: none"> <li>- Transistor type (NPN) and (PNP)</li> <li>- Transistor Operation and Coils</li> <li>- Transistor Application</li> </ul> <p>Mid-Term on Electronic components</p>	<ul style="list-style-type: none"> <li>- Circuits</li> <li>- Resistors</li> <li>- Diodes</li> <li>- Transistors</li> <li>- LEDS</li> <li>- Worksheets. textbook and video</li> </ul>	
7 <sup>th</sup> Week	<p><u>Computers, Sensors, and Actuators</u></p> <ul style="list-style-type: none"> <li>-Complete review</li> <li>-Inputs, processing, and output</li> <li>-Sensors: Coolant, TPS, Map, O2 air flow and air</li> <li>-Temperature Sensors</li> </ul>	<p><u>Class Activities</u></p> <ul style="list-style-type: none"> <li>-Worksheets</li> <li>-Sensor/Computer worksheets</li> <li>-Circuits/Diagrams</li> </ul>	

			questions Page 510
13 <sup>th</sup> Week	<u>Charging System</u> -Charging System Function -Types of charging systems	Chapter 32 Videos Worksheets	Homework Chapter 32 Answer review questions Page 546
14 <sup>th</sup> Week	Preparation for ASE Exam		
15 <sup>th</sup> Week	<u>Final Exam</u>		