De Anza College
AUTOMOTIVE TECHNOLOGY 60
Automotive Electrical Systems, 9 Units
Green Sheet

Fall, 2014
Section #  00221 06:00pm-10:15pm T, Th.
Instructor: Michael McCart
Office Phone # 408-864-8376 (during office hours)
Website: http://www.deanza.edu/faculty/mccartmichael/
E-mail mccartmichael@deanza.edu (best way to communicate)
Class meetings: September 22–December 9
Classroom: G8
Office hours Instructor’s office hours will be 5-6 PM, M, T, W, Th. in E14A or G8.
Automotive website http://www.deanza.edu/autotech/

Advisories: Automotive Technology 50A and 50B; English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent

Hours: Nine hours lecture per week (equal to one-hundred-eight hours lecture per quarter).

Important Dates:
Review the De Anza College website http://www.deanza.edu/calendar/falldates.html
Final Exam Tuesday, December 9, 6:15-8:15pm

Student learning outcomes

Demonstrate the ability to diagram and construct simple electrical circuits, calculating and measuring voltage, amperage, and resistance using Ohm's Law and a digital multimeter.

Develop a testing sequence to diagnose inoperative charging, cranking, and battery circuits.

Disruptive Behavior
A. De Anza College will enforce all policies and procedures set forth in the Standards of Student Conduct (see catalog). Any student disrupting a class may be asked to leave that class. After administrative review, the instructor may drop the student from the class.
B. Repeated cell phone interruptions will not be tolerated. Turn cell phones off during class and keep them in your backpacks.
C. Smoking in designated areas only.

Attendance Students will be dropped after two or more absences.

IMPORTANT NOTICE
NONE OF THE EXAMINATIONS OR THE LABORATORY EVALUATIONS MAY BE MADE UP UNLESS PRIOR AUTHORIZATION IS ARRANGED WITH THE INSTRUCTOR. OTHER LATEWORK WILL BE LOWERED EVERY CLASS IT IS LATE ONE WHOLE GRADE. IN CLASS ASSIGNMENTS CAN NOT BE MADEUP.
Auto 60
We will cover principles of electricity, electronics, cranking, and charging systems. This course will include testing, diagnosis and repair of these systems. We will answer many questions of how we utilize electricity. First we will define what electricity is then hone our mathematic skills in solving circuits and finally applying our skills to real circuits.

Student requirement
Bring yourself to class with your desire to participate.

Required equipment
B. Scientific calculator (not your cell phone)
C. Safety glasses for classroom lab demonstrations and at all times when in the shops

Course objectives
A. Know electrical safety
B. Comprehends simple electrical circuits and ohm’s law
C. Use analogical reasoning to solve series, parallel and series-parallel circuits
D. Describe battery construction and diagnosis
E. Critique battery testing methods
F. Recognize starting and charging systems components
G. Analyze Starting and charging system problems
H. Understand lights, horn, blower motor and accessory circuits
I. Recognizes on-board diagnostic and computer control

Sections
Safety Chapter 1
Circuits and ohm’s law Chapters 4 and 5
Circuit testing and test equipment Chapters 6 and 7
Electronic fundamentals Chapter 12
Batteries, starters and alternators Chapters 15-20
Wiring repair and schematics Chapters 8 and 9
Lighting, horn, wipers, blower motor and accessory circuits Chapters 21, 23 and 24
On-board diagnosis Chapter 13 and 27

Required reading prior to Tuesday’s class
Week 1 Chapter 1
Week 2 Chapters 4 and 5
Week 3 Chapters 6 and 7
Week 4 Chapters 12, 15 and 16
Week 5 Chapters 17, 18, 19 and 20
Week 7 Chapters 8 and 9
Week 9 Chapters 21, 23 and 24
Week 10 Chapters 13 and 27
Quizzes are on Thursday
  Week 1  Math review (first night)
  Week 2  Safety test
  Week 3  Chapters 4, 5, 6 and 7
  Week 8  Chapters 8, 9

Tests
  Week 6  Midterm
  Week 12  Final

Worksheets
  1 Series circuits
  2 Parallel circuits
  3 Parallel-series
  4 Ohm’s Law
  5 Resistor color
  6 DVOM and LED
  7 Low amp probe
  8 Vantage
  9 Circuit testing DVOM
  10 Batteries
  11 Starters
  12 Charging system
  13 Circuit tracing
  14 Connector and wiring
  15 Computer & Diagnosis

Grading

<table>
<thead>
<tr>
<th>Course</th>
<th>Points</th>
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<tbody>
<tr>
<td>Math review</td>
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<tr>
<td>A6 pretest</td>
<td>10</td>
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<tr>
<td>Safety test</td>
<td>25</td>
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<td>Quizzes 2 2 at 50 points</td>
<td>100</td>
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<td>Worksheets 15 at 15 points</td>
<td>225</td>
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<td>Midterm</td>
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<td>Performance</td>
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<td><strong>Total</strong></td>
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### Grade definitions are as follows:

Evaluative Symbols, Percentages and Grade Points

<table>
<thead>
<tr>
<th>Points</th>
<th>Letter grade</th>
<th>Percentage</th>
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<tr>
<td>576-600</td>
<td>A+ Excellent</td>
<td>96-100%</td>
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<tr>
<td>540-575</td>
<td>A Excellent</td>
<td>90-95.9%</td>
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<td>520-539</td>
<td>A- Excellent</td>
<td>86.6-89.9%</td>
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<td>500-519</td>
<td>B+ Good</td>
<td>83.3-86.5%</td>
<td>3.3</td>
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<td>480-499</td>
<td>B Good</td>
<td>80-83.2%</td>
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<td>460-479</td>
<td>B- Good</td>
<td>76.6-79.9%</td>
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<td>440-459</td>
<td>C+ Satisfactory</td>
<td>73.3-76.5%</td>
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<td>420-439</td>
<td>C Satisfactory</td>
<td>70-73.2%</td>
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<td>390-419</td>
<td>D+ Passing, less than satisfactory</td>
<td>65-69.9%</td>
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<td>D Passing, less than satisfactory</td>
<td>60-64.9%</td>
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<td>340-359</td>
<td>D- Passing, less than satisfactory</td>
<td>56.6-59.9</td>
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<td>Below 339</td>
<td>F Failing</td>
<td>Below 56.6</td>
<td>0.0</td>
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*This schedule is subject to change without notice* It is intended to be a general guide during the quarter. The schedule and procedures for this course are subject to change at the discretion of the instructor.