Winter 2015

**Section # 00203** 06:00pm-10:15pm MW
Instructor: Michael McCart
Office Phone #: 408-864-8376 (during office hours)
E-mail mccartmichael@deanza.edu (best way to communicate)
Class meetings: Jan. 5 – Mar. 25
Classroom: G8
Office hours Instructor’s office hours will be 5-6 PM, MTWTh in office E14A/G8.
Automotive website [http://www.deanza.edu/autotech/](http://www.deanza.edu/autotech/)

Requisites: 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).

**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.

**Important Dates:**

- **Holidays (College closed)**
  - Martin Luther King’s Birthday
  - George Washington’s Birthday
- **Final Exam**  
  Wednesday, March 25, 6:15-8:15pm

**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. There will be no eating, drinks, or chewing tobacco or gum in this classroom.

D. 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.
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
D. 3 ring binder for workbook

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
Circuits and ohm’s law
Chapter 1 and supplemental material
Circuit testing and test equipment
Chapters 4 and 5
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 Monday’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 Wednesday
Week 1 Math review (first night)
Week 1 A6 pretest
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 circuits
- 4. Ohm’s Law
- 5. Resistor color
- 6. DVOM and LED
- 7. Low amp probe
- 8. Vantage
- 9. Circuit testing DVOM
- 10. Batteries
- 11. Charging system
- 12. Starters
- 13. Circuit tracing
- 14. Connector and wiring
- 15. Computer & Diagnosis

## Grading

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<th>Points</th>
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<th>Percentage</th>
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<td>576-600</td>
<td>A+ Excellent</td>
<td>96-100%</td>
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<td>540-575</td>
<td>A Excellent</td>
<td>90-95.9%</td>
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<tr>
<td>520-539</td>
<td>A- Excellent</td>
<td>86.6-89.9%</td>
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<tr>
<td>500-519</td>
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<td>83.3-86.5%</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>
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<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>
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<td>65-69.9%</td>
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<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.