

**Clackamas Community College**  
Online Course/Outline Submission System

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### Section #1 General Course Information

**Department:** Automotive Technology: Auto Mechanics

**Submitter**

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**Course Prefix and Number:** AM - 244

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**# Credits:** 7

**Contact hours**

Lecture (# of hours):

Lec/lab (# of hours): 154

Lab (# of hours):

Total course hours: 154

For each credit, the student will be expected to spend, on average, 3 hours per week in combination of in-class and out-of-class activity.

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**Course Title:** Advanced Electrical Systems

**Course Description:**

Includes an in-depth study of systems that affect engine performance and information on computerized diagnostic equipment. Covers diagnosis/repair of accessory systems, supplemental restraint systems and advanced diagnosis of electrical/electronic systems.

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**Type of Course:** Career Technical Preparatory

Is this class challengeable?

**Yes**

Can this course be repeated for credit in a degree?

**No**

Is general education certification being sought at this time?

**No**

Does this course map to any general education outcome(s)?

**No**

Is this course part of an AAS or related certificate of completion?

**Yes**

**Name of degree(s) and/or certificate(s):** Automotive Technology AAS, Under Hood Technician certificate

Are there prerequisites to this course?

**Yes**

**Pre-reqs:** AM-129, Automotive Electrical Systems

**Have you consulted with the appropriate chair if the pre-req is in another program?**

**No**

Are there corequisites to this course?

**No**

Are there any requirements or recommendations for students taken this course?

**No**

Are there similar courses existing in other programs or disciplines at CCC?

**No**

Will this class use library resources?

**Yes**

**Have you talked with a librarian regarding that impact?**

**No**

Is there any other potential impact on another department?

**No**

Does this course belong on the Related Instruction list?

**No**

**GRADING METHOD:**

A-F or Pass/No Pass

**Audit: Yes**

When do you plan to offer this course?

✓ **Winter**

Is this course equivalent to another?

If yes, they must have the same description and outcomes.

**No**

Will this course appear in the college catalog?

**Yes**

Will this course appear in the schedule?

**Yes**

Student Learning Outcomes:

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

Perform tasks from the following NATEF major categories:

**VI. ELECTRICAL/ELECTRONIC SYSTEMS**

A. General: Electrical System Diagnosis

B. Battery Diagnosis and Service

F. Gauges, Warning Devices, and Driver Information Systems Diagnosis and Repair

G. Horn and Wiper/Washer Diagnosis and Repair

H. Accessories Diagnosis and Repair

**VIII. ENGINE PERFORMANCE**

A. General: Engine Diagnosis

B. Computerized Controls Diagnosis and Repair

C. Ignition System Diagnosis and Repair

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***This course does not include assessable General Education outcomes.***

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Major Topic Outline:

1. Orientation.
2. Safety.
3. Review of Digital Multi-Meter basics.
4. Introduction to Module H-116 Wire Harness Troubleshooting.
5. Advanced Features of the DMM (Digital Multi-Meter); Analog Oscilloscope Fundamentals; DSO (Digital Storage Oscilloscope); GMM (Graphing Multi-Meter).
6. Advanced Starting and Charging Systems Diagnosis.
7. Electrical Instrumentation.
8. Electrical Accessories.
9. Restraint Systems: Theory, Diagnosis.
10. Ignition System Diagnosis.
11. Engine Condition Diagnosis.

Does the content of this class relate to job skills in any of the following areas:

- |                                      |           |
|--------------------------------------|-----------|
| 1. Increased energy efficiency       | <b>No</b> |
| 2. Produce renewable energy          | <b>No</b> |
| 3. Prevent environmental degradation | <b>No</b> |
| 4. Clean up natural environment      | <b>No</b> |
| 5. Supports green services           | <b>No</b> |

Percent of course: 0%

First term to be offered:

**Next available term after approval**

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