



## AUTO 2600

**Division:** Career and Technical Education

**Department:** Automotive Technology

**Course:** AUTO 2600

**Title:** Automotive Electrical And Electronics II

**Catalog Description:**

This course covers the theory, operation, and diagnosis of automotive batteries, starting systems, charging systems, lighting systems, instrumentation, and automotive accessories.

**General Education Requirements:** N/A

**Semesters Offered:** TBA

**Credit/Time Requirement:** Credit: 5; Lecture: 4; Lab: 4

**Clock/Hour Requirements:** 120

**Offered for Non-Credit:** No

**Justification:**

This course is required for Automotive Service Excellence (ASE) certification. It is approved by the advisory committee for an AAS degree in Automotive Technology.

**Student Learning Outcomes:**

Upon successful completion of this course, students will be able to safely perform the tasks listed in the current edition of ASE Certification for Automotive Training Programs.

**Content:**

- Safety
- Battery construction
- Chemical action
- Maintenance free batteries
- Hybrid batteries
- Recombination batteries
- Battery ratings
- Direct current motors and the starting system
- Starter drives
- Cranking motor circuits
- Charging systems
- AC generator circuits
- AC generator regulation

- Lighting circuits
- Conventional analog circuits
- Instrumentation and indicator lights
- Electrical accessories
- Review of the body computers
- Advanced lighting circuits and electronic
- Instrumentation
- Chassis electronic control systems

**General Education Outcomes:**

**Applied Education Outcomes:**

2) Students will become aware of industry specific certification and develop skills sufficient to acquire the same.

Students will perform advanced electrical and electronic system identification and testing procedures which will help them prepare for future ASE certification in A6 Electrical/Electronic Systems. A student's ability to perform the above will be evaluated through instructor observation of their ability to complete a ASE specific list of hands on tasks in simulations and on-car diagnosis.

**Key Performance Indicators:**

In Class:

- Student's shall be required to complete chapter assignments (60%) and pass a final test (40%). In addition, students are required to perform shop tasks (P1 tasks 100%, P2 tasks 90%, P3 tasks 80% to pass the course) as outlined in the current edition of ASE Certification For Automobile Training Programs.

(all percentages are approximate)

Following class:

- Course evaluation will be demonstrated by the following methods:
  - student feedback per ASE requirements
  - students passing ASE tests
  - students transferring to other post secondary institutions
  - students performance in subsequent courses

**Representative Text and/or Supplies:**

*Automotive Electricity and Electronics*, current edition, Thomson/Delmar Learning.  
by Barry Hollembeak

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**Maximum Class Size: 14**

**Signatures:**

I hereby submit this course syllabus:

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Brent Reese, BS, Associate Professor

I hereby find this course consistent with the goals and resources of the Automotive Technology Department:

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Brent Reese, BS, Associate Professor, Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

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Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

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Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

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Michelle Olsen, MLS, Campus Librarian (Richfield Campus)