



**COWLEY COLLEGE
& Area Vocational Technical School**

COURSE PROCEDURE FOR

**ELECTRICAL II
AMS3118 6 Credit Hours**

Student Level:

This course is open to students on the college level in either the freshman or sophomore year and to area high school vocational students.

Catalog Description:

AMS 3118 - ELECTRICAL II (6 hrs)

This course will enable the student to gain basic understanding and hands on experience utilizing industry standard procedures in the diagnosis and repair of Electrical/Electronic Systems. Topics presented throughout the course cover complex vehicle multiplexing systems, battery, starting, charging, and lighting systems, as well as driver information systems.

Prerequisites:

Student must have enrolled and successfully passed AMS 3117 Electrical I or equivalent, or instructor approval.

Controlling Purpose:

This course is designed to help the student increase their knowledge concerning entry-level skills contained in the sequenced competencies, for success, after graduation from the Automotive Technology Program.

Learner Outcomes:

Upon completion of this course the student will be able to diagnose and repair successfully related problems specific to the automotive electrical system.

The learning outcomes and competencies detailed in this course outline or syllabus meet or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Groups project for this course as approved by the Kansas Board of Regents.

Units Outcomes and Criterion Based Evaluation Key for Core Content:

The following defines the minimum core content not including the final examination period. Instructors may add other content as time allows.

Evaluation Key:

A = All major and minor goals have been achieved and the achievement level is considerably

- above the minimum required for doing more advanced work in the same field.
- B = All major goals have been achieved, but the student has failed to achieve some of the less important goals. However, the student has progressed to the point where the goals of work at the next level can be easily achieved.
- C = All major goals have been achieved, but many of the minor goals have not been achieved. In this grade range, the minimum level of proficiency represents a person who has achieved the major goals to the minimum amount of preparation necessary for taking more advanced work in the same field, but without any major handicap of inadequacy in his background.
- D = A few of the major goals have been achieved, but the student's achievement is so limited that he is not well prepared to work at a more advanced level in the same field.
- F = Failing, will be computed in GPA and hours attempted.
- N = No instruction or training in this area.

UNIT 1: Lighting Systems Diagnosis and Repair						
Outcomes: The student will gain an understanding of lighting systems and repair.						
A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Diagnose the cause of brighter than normal, intermittent, dim, or no light operation; determine necessary action.
						Inspect, replace, and aim headlights and bulbs.
						Inspect and diagnose incorrect turn signal or hazard light operation; perform necessary action.

UNIT 2: Gauges, Warning Devices, and Driver Information Systems Diagnosis and Repair						
Outcomes: The student will demonstrate an understanding of the gauges, various warning devices, and methods of diagnosis and repair.						
A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Inspect and test gauges and gauge sending units for cause of intermittent, high, low, or no gauge readings; determine necessary action.
						Inspect and test connectors, wires, and printed circuit boards of gauge circuits; determine necessary action.
						Diagnose the cause of incorrect operation of warning devices and other driver information systems; determine necessary action.
						Inspect and test sensors, connectors, and wires of electronic instrument circuits; determine necessary action.

UNIT 3: Horn and Wiper/Washer Diagnosis and Repair

Outcomes: The student will demonstrate an understanding of the horn, wiper/washer system, and common repair procedures.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Diagnose incorrect horn operation; perform necessary action.
						Diagnose incorrect wiper operation; diagnose wiper speed control and park problems; perform necessary action.
						Diagnose incorrect washer operation; perform necessary action.

UNIT 4: Accessories Diagnosis and Repair

Outcomes: The student will gain knowledge of the accessories and common repair procedures.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Diagnose incorrect operation of motor-driven accessory circuits; determine necessary action.
						Diagnose incorrect heated glass operation; determine necessary action.
						Diagnosis electric lock operation; determine necessary action.
						Diagnose incorrect operation of cruise control systems; determine necessary action.
						Diagnose supplemental restraint system (SRS) concerns; determine necessary action. (Note: Follow manufacturer's safety procedures to prevent accidental deployment.)
						Disarm and enable the airbag system for vehicle service.
						Diagnose radio static and weak, intermittent, or no radio reception; determine necessary action.
						Remove and reinstall door panel.
						Diagnose body electronic system circuits using a scan tool; determine necessary action.
						Check for module communication errors using a scan tool.
						Diagnose the cause of false, intermittent, or no operation of anti-theft system.

Projects Required:

As assigned

Textbook:

Contact Bookstore for current textbook.

Materials/Equipment Required:

Students are required to furnish their own Personal Protection Equipment i.e. Safety Glasses.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy

Course Time Frame:

The U.S. Department of Education, Higher Learning Commission, and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching, and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

Refer to the following policies:

[402.00 Academic Code of Conduct](#)

[263.00 Student Appeal of Course Grades](#)

[403.00 Student Code of Conduct](#)

Disability Services Program:

Cowley College, in recognition of state and federal laws, will accommodate a student with a documented disability. If a student has a disability, which may impact work in this class which requires accommodations, contact the Disability Services Coordinator.