

AUTO 411A: AUTOMOTIVE ELECTRICAL REVIEW

Originator

dredman

Co-Contributor(s)**Name(s)**

Anderson, Dorothy

Justification / Rationale

This new course will enhance the learner's essential skills for employment and advancement within the automotive service industry.

Effective Term

Spring 2023

Credit Status

Noncredit

Subject

AUTO - Automotive Technology

Course Number

411A

Full Course Title

Automotive Electrical Review

Short Title

ELECTRICAL REVIEW

Discipline**Disciplines List**

Automotive Technology

Modality

Face-to-Face
Hybrid

Catalog Description

This course offers an electrical review for those who have had some electrical exposure but need a refresher because they are trying to pass the Automotive Service Excellence (ASE) exam, better their position at their current job or gain employment in the automotive repair industry. This will enhance the learner's essential skills for employment and advancement within the automotive service industry.

Schedule Description

This course offers an electrical review for those who have had some electrical but need a refresher because they are trying to pass the Automotive Service Excellence ASE exam, better their position at their current job or gain employment in the automotive repair industry. Advisory: AUTO 301

Non-credit Hours

8

In-class Hours

8

Total Course Units

0

Total Semester Hours

8

Override Description

Noncredit override.

Prerequisite Course(s)

Advisory: AUTO 301

Required Text and Other Instructional Materials**Resource Type**

Web/Other

Open Educational Resource

Yes

Year

2021

Description

Automotive manufacturer electrical training materials will be provided. (No cost to the learner)

Resource Type

Instructional Materials

Open Educational Resource

Yes

Year

2021

Description

The instructor will provide supplemental materials.

Class Size Maximum

21

Entrance Skills

Provide brief descriptions of the components.

Requisite Course Objectives

AUTO 301-Provide a brief description pertaining to major components.

Entrance Skills

Identify major automotive components.

Requisite Course Objectives

AUTO 301-Identify major automotive components.

Course Content

1. Electrical theory as applied to the modern automobile.
2. Safety concerns unique to automotive electrical circuits, including high voltage electrical.
3. Function and operation a digital multimeter (DMM).
4. Research techniques of technical service bulletins, diagnostic forums and service information related to electrical malfunctions.

Course Objectives

Objectives	
Objective 1	Describe the different types of automotive electrical circuits.
Objective 2	Define voltage, amperage, and resistance.
Objective 3	Trace power flow in a horn circuit given an electrical diagram.
Objective 4	List the best places in a circuit to conduct electrical tests and describe what each test will determine.

Student Learning Outcomes

Upon satisfactory completion of this course, students will be able to:	
Outcome 1	Demonstrate proficiency in basic electrical knowledge as determined by passing manufacturer's automotive electrical exam.

Methods of Instruction

Method	Please provide a description or examples of how each instructional method will be used in this course.
Collaborative/Team	Learners will work in teams to locate and repair electrical system malfunctions on an electronic circuit board.
Lecture	Presentation of theory principles of automotive electrical.
Laboratory	Each learner will perform electrical troubleshooting and diagnosis of an electrical system malfunction.
Discussion	Learners will participate in classroom discussions.

Methods of Evaluation

Method	Please provide a description or examples of how each evaluation method will be used in this course.	Type of Assignment
Written homework	Readings and home work from the instructor-provided, course-related materials.	In and Out of Class
Student participation/contribution	The lecture will be a two-way interactive discussion requiring input from each learner.	In and Out of Class
Tests/Quizzes/Examinations	Learners must successfully complete required assessment material relevant to course content.	In and Out of Class

Assignments
Other In-class Assignments

- List 5 safety procedures including required PPE diagnosing and servicing electrical systems.
- Explanation of the three types of electrical failures.
- How to interpret digital multimeter readings.
- Development of a study-plan for a manufacturer electrical exam.
- Quiz and review of vehicle electrical system diagnosis.

Other Out-of-class Assignments

- Proper use and interpretation of electrical test equipment.
- Execution of individual study-plans in preparation for manufacturer electrical system exam.
- Successfully complete a manufacturer electrical system exam.

Grade Methods

Pass/No Pass Only

Distance Education Checklist

Include the percentage of online and on-campus instruction you anticipate.

Online %

50

On-campus %

50

Lab Courses**How will the lab component of your course be differentiated from the lecture component of the course?**

The lab activities will be based on learning activities related to diagnosis and repair of vehicle automotive electrical system malfunctions.

From the COR list, what activities are specified as lab, and how will those be monitored by the instructor?

The facilitator will supervise all lab content, guiding the learner in productivity and understanding.

How will you assess the online delivery of lab activities?

Laboratory activities will not be delivered in the online setting, only in person.

Instructional Materials and Resources**If you use any other technologies in addition to the college LMS, what other technologies will you use and how are you ensuring student data security?**

None.

Effective Student/Faculty Contact**Which of the following methods of regular, timely, and effective student/faculty contact will be used in this course?****Within Course Management System:**

Discussion forums with substantive instructor participation
Online quizzes and examinations
Regular virtual office hours
Timely feedback and return of student work as specified in the syllabus
Weekly announcements

External to Course Management System:

Direct e-mail
Posted audio/video (including YouTube, 3cm mediasolutions, etc.)
Synchronous audio/video

Briefly discuss how the selected strategies above will be used to maintain Regular Effective Contact in the course.

Regular effective contact will be practiced through online lecture, discussion board postings, email communications, regular announcements, prompt grading and feedback of assignments, and virtual office hours. This contact between the facilitator and learner on a regular basis will enhance learner confidence and understanding and promote critical thinking and analyzation of subject matter.

If interacting with students outside the LMS, explain how additional interactions with students outside the LMS will enhance student learning.

Group discussions, e-mail correspondence, voicemail.

Other Information**Provide any other relevant information that will help the Curriculum Committee assess the viability of offering this course in an online or hybrid modality.**

With the uncertainty of the teaching environment, enabling the lecture portion of this course to be delivered in an online setting, while keeping the hands-on portion face-to-face, will ensure learners can access needed training to ensure knowledge and experience is achieved to gain employment in the automotive field.

MIS Course Data**CIP Code**

47.0604 - Automobile/Automotive Mechanics Technology/Technician.

TOP Code

094840 - Alternative Fuels and Advanced Transportation Technology

SAM Code

C - Clearly Occupational

Basic Skills Status

Not Basic Skills

Prior College Level

Not applicable

Cooperative Work Experience

Not a Coop Course

Course Classification Status

Other Non-credit Enhanced Funding

Approved Special Class

Not special class

Noncredit Category

Short-Term Vocational

Funding Agency Category

Not Applicable

Program Status

Program Applicable

Transfer Status

Not transferable

General Education Status

Y = Not applicable

Support Course Status

N = Course is not a support course

Allow Audit

No

Repeatability

Yes

Repeatability Limit

NC

Repeat Type

Noncredit

Justification

Noncredit courses are repeatable until students achieve the outcomes and objectives of the course.

Materials Fee

No

Additional Fees?

No

Approvals**Curriculum Committee Approval Date**

3/17/2022

Academic Senate Approval Date

3/24/2022

Board of Trustees Approval Date

4/22/2022

Chancellor's Office Approval Date

5/06/2022

Course Control Number

CCC000631398