AUTO 410A: NOISE, VIBRATION, AND HARSHNESS

Originator
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Co-Contributor(s)

Name(s)
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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
410A

Full Course Title
Noise, Vibration, and Harshness

Short Title
NVH

Discipline

Disciplines List
Automotive Technology

Modality
Face-to-Face
Hybrid

Catalog Description
This course offers knowledge and skills related to vehicle noise, vibration, and harshness (NVH) customer concerns. This will enhance the learner's essential skills for employment and advancement within the automotive service industry.

Schedule Description
This course offers knowledge and skills related to vehicle noise, vibration, and harshness customer concerns. Advisory: AUTO 301

Non-credit Hours
16

In-class Hours
15

Out-of-class Hours
1

Total Course Units
0

Total Semester Hours
16

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
Manufacturer noise, vibration, and harshness (NVH) material will be provided by the instructor. (No cost to the learner)

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. Theory and common causes of noise, vibration, and harshness (NVH).
2. Safety concerns unique to diagnosis and repair of noise, vibration, and harshness (NVH) concerns.
3. Function and operation of noise, vibration, and harshness (NVH) diagnostic equipment.
4. Research techniques of technical service bulletins, diagnostic forums and service information related to noise, vibration, and harshness (NVH) concerns.
5. Role playing scenarios involving customer and technician interaction related to understanding noise, vibration, and harshness (NVH) concerns and explaining normal vehicle operation.

Course Objectives

	Objectives
Objective 1	List safety procedures and required personal protection equipment (PPE) when diagnosing and repairing a noise, vibration, and harshness (NVH) malfunction.
Objective 2	Explain common causes of a noise, vibration, and harshness (NVH) concern.
Objective 3	Locate and follow manufacturer service information procedures related to a noise, vibration, and harshness (NVH) concern.
Objective 4	Determine if the noise, vibration, and harshness (NVH) customer concern is normal or caused by a malfunctioning component.

Student Learning Outcomes

	Upon satisfactory completion of this course, students will be able to:
Outcome 1	Discover the root cause of a customer concern involving a vehicle noise, vibration, or unwanted harshness (NVH).

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 identify safety procedures and personal protection equipment (PPE) within the service information related to noise, vibration, and harshness (NVH).
Lecture	Presentation of theory and causality of automotive noise, vibration, and harshness (NVH) concerns.
Laboratory	Each learner will navigate noise, vibration, and harshness (NVH) repair procedures from the service information.
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 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.	In and Out of Class
Other	Out-of-class hours will be accounted for electronically through the learning management system.	Out of Class Only

Assignments

Other In-class Assignments

1. List 5 safety procedures including required PPE when using an oscilloscope.
2. Explanation of common causes of noise, vibration, and harshness (NVH).
3. Diagnostic tips and techniques for noise, vibration, and harshness (NVH).
4. How to interpret oscilloscope read-outs.
5. Research concerning the harmonics of noise, vibration, and harshness (NVH).
6. Development of a study-plan for a manufacturer noise, vibration, and harshness (NVH) exam.
7. Quiz and review of vehicle noise, vibration, and harshness (NVH) concerns.

Other Out-of-class Assignments

1. Proper use and interpretation of noise, vibration, and harshness (NVH) diagnostic equipment.
2. Execution of individual study-plans in preparation for manufacturer noise, vibration, and harshness (NVH) exam.
3. Successfully complete a manufacturer noise, vibration, and harshness (NVH) 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 noise, vibration, and harshness (NVH).

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, 3cmediasolutions, 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
CCC000631397