

AUTO 340: CNG FUNDAMENTALS & SAFETY

Originator

dredman

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

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Justification / Rationale

The Automotive Faculty are reviewing and/or updating this course to assure compliance with local, State, and Federal regulations; support consistency within the curriculum; practice relevance regarding automotive industry and community; and to make improvements that will strengthen the learning environment this course creates thus benefiting the learners.

Effective Term

Fall 2022

Credit Status

Noncredit

Subject

AUTO - Automotive Technology

Course Number

340

Full Course Title

CNG Fundamentals & Safety

Short Title

CNG FUNDAMENTALS/SAFETY

Discipline**Disciplines List**

Automotive Technology

Modality

Face-to-Face

100% Online

Hybrid

Catalog Description

This course provides lecture/discussion on compressed natural gas (CNG) vehicle safety and operation. The course is designed to introduce the service technician to safety, operation, and basic practices and procedures unique to gaseous fuel vehicles.

Schedule Description

Introduction to safety, basic components and operation for compressed natural gas (CNG) vehicles.

Non-credit Hours

72

Lecture Units

0

Lab Units

0

In-class Hours

36

Out-of-class Hours

36

Total Course Units

0

Total Semester Hours

72

Override Description

Noncredit courses do not have lecture and lab. The out of class hours were adjusted to provide the same total as the equivalent credit course.

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

Web/Other

Open Educational Resource

Yes

Description

Materials provided by the instructor.

Resource Type

Web/Other

Description

Handouts provided by the instructor

Resource Type

Web/Other

Description

NFPA 52 Vehicular Fuel Systems Code, 2015 Edition

Class Size Maximum

21

Course Content

1. Compressed Natural Gas (CNG) safety precautions & procedures.
2. Review of gaseous fuels fundamentals.
3. Practice CNG Safety precautions and procedures.

Course Objectives

	Objectives
Objective 1	Upon successful completion of this course, learners will be able to: List shop and vehicle safety practices relevant to compressed natural gas (CNG) vehicles.
Objective 2	Upon successful completion of this course, learners will be able to: describe CNG components and describe their operation.

Student Learning Outcomes

	Upon satisfactory completion of this course, students will be able to:
Outcome 1	Identify safety procedures and equipment related to work on compressed natural gas (CNG) vehicles.
Outcome 2	List the basic components and their functions for a compressed natural gas (CNG) vehicle.

Methods of Instruction

Method	Please provide a description or examples of how each instructional method will be used in this course.
Collaborative/Team	Work in a team setting while performing safety and lab tasks, researching information and group based activities.
Technology-based instruction	Diagnostic equipment-based activities.
Lecture	Each class is half lecture covering multiple aspects of course content.
Discussion	Participate in classroom discussions.
Demonstration, Repetition/Practice	Demonstrate their ability to correctly perform a given task not limited to reports, research projects, interactive role-play and group activities.

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 from provided materials. Homework from provided materials: multiple-choice questions, fill in the blank and essay questions to be graded each week.	Out of Class Only
Student participation/contribution	Lab/Internet activities and student may participate in role play activities.	Out of Class Only
Mid-term and final evaluations	Used to evaluate students' knowledge and understanding of the information presented. Examples of these are not limited to quizzes, exams, presentations, research, or projects.	In and Out of Class
Group activity participation/observation	Student will be observed in lab/Internet, group activities, information research, collaborative assignments, and other activities assigned.	In and Out of Class
Laboratory projects	Student will participate in lab/Internet based activities to complete their NATEF standards job sheets.	In Class Only
Reading reports	Turned in by report, written, presentation; however, the student is required to research information pertaining to the assignment.	Out of Class Only
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. Lecture notes.
2. Problem solving participation and discussion.
3. Hands on/Internet activities.

Other Out-of-class Assignments

1. Readings from provided material.
2. Homework from required text: multiple-choice questions, fill in the blank and essay questions to be graded each week.
3. Completion of two SP2 safety tests.
4. Assigned readings and written summaries from selected instructor handouts.
5. Written summaries and analysis of assigned websites.
6. Must complete a course project consisting an essay describing, analyzing and summarizing a selected topic, including out of class research and fieldwork.
7. Must develop teamwork skills through lab activities and assigned special projects.

Grade Methods

Pass/No Pass Only

Distance Education Checklist

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

Online %

100

What will you be doing in the face-to-face sections of your course that necessitates a hybrid delivery vs a fully online delivery?

Discussions, lab tasks, and lecture.

Instructional Materials and Resources

If used, explain how specific materials and resources outside the LMS will be used to enhance student learning.

Resources from manufacturers are all professional and exclusive websites that focus on the subject matter.

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

Telephone contact/voicemail

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.

Interaction between instructor and learner will help to enhance learning and understanding of subject material.

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

47.0614 - Alternative Fuel Vehicle 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 are comfortable they have achieved the skills and knowledge required to meet the objectives and outcomes of the course.

Materials Fee

No

Additional Fees?

No

Approvals**Curriculum Committee Approval Date**

05/03/2022

Academic Senate Approval Date

05/12/2022

Board of Trustees Approval Date

05/20/2022

Chancellor's Office Approval Date

05/23/2022

Course Control Number

CCC000611535

Programs referencing this courseCompressed Natural Gas Essentials Certificate of Completion (<http://catalog.collegeofthedesert.eduundefined/?key=278>)Compressed Natural Gas Installation Essentials Certificate of Completion (<http://catalog.collegeofthedesert.eduundefined/?key=303>)Compressed Natural Gas Inspection Certificate of Completion (<http://catalog.collegeofthedesert.eduundefined/?key=304>)CNG Essentials Certificate of Completion (<http://catalog.collegeofthedesert.eduundefined/?key=361>)CNG Inspection Certificate of Completion (<http://catalog.collegeofthedesert.eduundefined/?key=362>)CNG Installation Essentials Certificate of Completion (<http://catalog.collegeofthedesert.eduundefined/?key=363>)