

AUTO 340A: CNG COMPONENT FUNCTION & OPERATION

New Course Proposal

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Originator

zbecker

Co-Contributor(s)

Name(s)

Redman, Douglas

Justification / Rationale

CNG (Compressed Natural Gas) is an advanced topic in Alternate Fuels. Training is aimed at, and appropriate for, auto technicians already working in the field. Many have already completed certificates and degrees. Offering a non-credit option is appropriate for this audience.

Effective Term

Fall 2020

Credit Status

Noncredit

Subject

AUTO - Automotive Technology

Course Number

340A

Full Course Title

CNG Component Function & Operation

Short Title

CNG COMP FUNC & OPERATION

Discipline

Disciplines List

Automotive Technology

Modality

Face-to-Face

Catalog Description

This course provides classroom lecture/discussion and hands-on training on compressed natural gas (CNG) vehicle components function and operation. This equips technicians to better service and repair CNG vehicles.

Schedule Description

This course provides classroom lecture/discussion and hands-on training on compressed natural gas (CNG) vehicle components function and operation. Prerequisite: AUTO 340

Non-credit Hours

36

Lecture Units

0

Lab Units

0

Lab Semester Hours

0

In-class Hours

18

Out-of-class Hours

18

Total Course Units

0

Total Semester Hours

36

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.

Prerequisite Course(s)

AUTO 340

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

Web/Other

Description

2006 Honda Civic GX Service Manual 61SNA06

Resource Type

Web/Other

Description

Handouts provided by the instructor

Class Size Maximum

21

Entrance Skills

Students should be able to describe CNG components and their operation as well as relevant CNG safety practices.

Requisite Course Objectives

AUTO 340-Upon successful completion of this course, students will be able to: describe CNG components and describe their operation operation.

AUTO 340-Upon successful completion of this course, students will be able to: List shop and vehicle safety practices relevant to compressed natural gas (CNG) vehicles.

Course Content

1. Compressed Natural Gas (CNG) ignition systems component function and location.
2. Compressed Natural Gas (CNG) fuel systems component function and location.
3. Compressed Natural Gas (CNG) emissions systems component function and location.

Course Objectives**Objectives**

Objective 1 Understand function and operation of CNG vehicle ignition components.

Objective 2 Understand function and operation of CNG vehicle fuel system components.

Objective 3 Understand function and operation of CNG vehicle emission system components.

Objective 4 Comply with shop and vehicle safety practices relevant to CNG vehicles.

Student Learning Outcomes

Upon satisfactory completion of this course, students will be able to:

Outcome 1 List the function and operation of key ignition, fuel and emission system components of a 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	Student will work in a team setting while performing NATEF tasks, researching information and group based activities.
Observation	Student will be observed activities in lab, group activities, information research, collaborative assignments, and other activities assigned.
Lecture	Each class is half lecture covering multiple aspects of course content.
Discussion	Student will participate in classroom discussions.
Demonstration, Repetition/Practice	Each student will demonstrate their ability to correctly identify function and operation of CNG systems not limited to laboratory assignments, 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
Self-paced testing, Student preparation	Student may participate in role play activities and be required to do a visual presentation.	Out of Class Only
College level or pre-collegiate essays	A research report submitted or completed, not limited to a, written, presentation, however the student is required to research information pertaining to the assignment.	Out of Class Only
Student participation/contribution	Lab activities and student may participate in role play activities.	Out of Class Only
Group activity participation/observation	Student will be observed activities in lab, group activities, information research, collaborative assignments, and other activities assigned.	In and Out of Class
Laboratory projects	Student will participate in lab based activities to complete their NATEF standards job sheets.	In Class Only
Tests/Quizzes/Examinations	Students must successfully complete required assesment 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. Lecture notes.
2. Component operation and function activities: readings, participation and discussion.
3. Hands on activities.

Other Out-of-class Assignments

1. Readings from provided materials.
2. Homework from provided materials: 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. Hands-on lab worksheets matching each course objective.
7. Must develop teamwork skills through lab activities and assigned special projects.

Grade Methods

Pass/No Pass Only

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

Allow Audit

Yes

Repeatability

Yes

Repeatability Limit

NC

Repeat Type

Noncredit

Justification

Noncredit courses are repeatable until students are comfortable they have achieved the skills and knowledge to meet the outcomes and objectives of the course.

Materials Fee

No

Additional Fees?

No

Approvals**Curriculum Committee Approval Date**

10/17/2019

Academic Senate Approval Date

10/24/2019

Board of Trustees Approval Date

11/13/2019

Chancellor's Office Approval Date

01/10/2020

Course Control Number

CCC000611536

Programs referencing this courseCompressed Natural Gas Essentials Certificate of Completion (<http://catalog.collegeofthedesert.eduundefined?key=278/>)