# MASTER COURSE OUTLINE

A. AUTO 1341 Fuel Systems I

B. COURSE DESCRIPTION:

This course covers the fundamentals of theory, principles, diagnosis, adjustments, and repair of complete automotive fuel and emissions control systems. This course, along with other program courses, satisfies the task requirements set forth in Section I of the ASEEF (Automotive Service Excellence Education Foundation).
**(4 Cr – 2 lect, 2 lab)**

C. **Core Theme: People and the Environment

D. RIVERLAND INSTITUTIONAL LEARNING OUTCOMES:

This course addresses following Riverland Institutional Learning Outcome(s):
☐ ILO 1: critical thinking *(Core Theme Goal 2)*
☐ ILO 2: awareness of the larger global community *(Core Theme Goal 7 or 8)*
☒ ILO 3: ethical, engaged citizenship *(Core Theme Goal 9 or Goal 10)*
☐ ILO 4: communication and collaboration *(Discipline Goal 1 and by any learning outcome(s) involving communication or collaboration)*

E. MAJOR CONTENT AREAS:

- Automotive engine design and operation
- Gasoline and diesel factors of combustion
- Pollution, emissions, and emission controls
- Intake and exhaust systems
- Fuel delivery systems
- Fuel injection components, operations, and diagnosis

F. GOAL TYPE, OBJECTIVES, AND OUTCOMES:

| **GOAL TYPE** | **OBJECTIVES**<br>**Students will be able to** | **OUTCOMES**<br>**The student will successfully** |
|---|---|---|
| **People and the Environment | articulate and defend the actions they would take on various environmental issues. | 1. describe the effects of pollution on the environment. |
| CS | identify ways to exercise the rights and responsibilities of citizenship. | 1. describe the ethical responsibility involved in performing vehicle repair. |
| CS | understand the role of a world citizen and the responsibility world citizens | 1. advocate responsible maintenance of emission control systems. |

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|---|---|---|
| | share for their common global future. | |
| CS | obtain a basic understanding of automotive fuel systems. | 1. identify the parts and explain the operation of a fuel system. |
| CS | gain an understanding of automotive emission control systems. | 1. identify the parts and explain the operation of an evaporative emission recovery system. |

G. SPECIAL INFORMATION:

This course may require use of the Internet, the submission of electronically prepared documents and the use of a course management software program. Students who have a disability and need accommodations should contact Accessibility Services at the beginning of the semester. This information will be made available in alternative format, such as Braille, large print, or current media, upon request.

The student will need access to and use of a laptop computer capable of running required software.

H. COURSE CODING INFORMATION:

Course Code S/Class Maximum 25; Letter Grade

Revision date: 03/09/11; 11/29/17; 10/23/23
AASC Approval date: 12/12/17; 12/11/23

| ***Riverland Community College Disciplines** | **MnTC Goal Number** |
|---|---|
| Communication (CM) | **1** |
| Natural Sciences (NS) | **3** |
| Mathematics/Logical Reasoning (MA) | **4** |
| History and the Social & Behavioral Sciences (SS) | **5** |
| Humanities and Fine Arts (HU) | **6** |

| ****Riverland Community College Core Themes** | **MnTC Goal Number** |
|---|---|
| Critical Thinking (CT) | **2** |
| Human Diversity (HD) | **7** |
| Global Perspective (GP) | **8** |
| Ethical and Civic Responsibility (EC) | **9** |
| People and the Environment (PE) | **10** |

*These five MnTC Goals have been identified as Riverland Community College Disciplines.
** These five MnTC Goals have been identified as Riverland Community College Core Themes.

NOTE: The Minnesota Transfer Curriculum “10 Goal Areas of Emphasis” are reflected in the five required discipline areas and five core themes noted in the Riverland Community College program of study guide and/or college catalog.