Course Title: Introduction to Hybrid Electric Vehicle

Catalog Description: Introduction to Hybrid Electric Vehicle discusses basic hybrid electric vehicle safety procedures, common hybrid electric component fundamentals, and current hybrid vehicle design. It provides an introduction to hybrid electric vehicle test equipment and procedures.

Prerequisites or Necessary Entry Skills/Knowledge: AUTO 1100 and AUTO 1111

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)

- Goal 1: Communication: By meeting the following competencies:
- Goal 2: Critical Thinking: By meeting the following competencies:
- Goal 3: Natural Sciences: By meeting the following competencies:
- Goal 4: Mathematics/Logical Reasoning: By meeting the following competencies:
- Goal 5: History and the Social and Behavioral Sciences: By meeting the following competencies:
- Goal 6: The Humanities and Fine Arts: By meeting the following competencies:
- Goal 7: Human Diversity: By meeting the following competencies:
- Goal 8: Global Perspective: By meeting the following competencies:
- Goal 9: Ethical and Civic Responsibility: By meeting the following competencies:
- Goal 10: People and the Environment: By meeting the following competencies:

Topics to be Covered
- Hybrid vehicle components
- Hybrid safety protocols
- Hybrid vehicle maintenance and repair

Student Learning Outcomes
- Define series and parallel power flow
- Identify common hybrid vehicle powertrain sub-systems
- Describe Hybrid vehicle components and identify different manufacturers’ Hybrid Technology
- Identify advantages of Hybrid vehicle technology
- Identify and perform safe high voltage service disconnect procedures
<table>
<thead>
<tr>
<th>Identify Hybrid vehicle repair tools</th>
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<tr>
<td>Analyze high voltage cables</td>
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<td>Perform insulation checks</td>
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<tr>
<td>Evaluate high voltage batteries</td>
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<td>Perform power law calculations</td>
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<td>Analyze scan data</td>
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<td>Comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations</td>
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*The required outcomes follow the Auto Service Technician (AST) model of the National Automotive Technical Education Foundation (NATEF) certification program.

| Is this course part of a transfer pathway: | Yes ☐ No ☒ |

Revised Date: 6/2021