

# MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

## COURSE OUTLINE

**DEPT. AUTO**

**COURSE NUMBER: 1120**

**NUMBER OF CREDITS: 3**

**Lecture: 1 Lab: 2 OJT 0**

<b>Course Title:</b>
Air Conditioning

<b>Catalog Description:</b>
Air Conditioning identifies and defines the theory, principles, diagnosis, testing, and repairs of the air conditioning and heater system operations.

<b>Prerequisites or Necessary Entry Skills/Knowledge:</b>
TRAN 1100

**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:

<b>Topics to be Covered</b>
Air conditioning fundamentals
Air conditioning systems
Testing and repairing of air conditioning systems
Computer controlled air conditioning systems

<b>Student Learning Outcomes</b>
Identify heating, ventilation and air conditioning (HVAC) components and configuration.
Inspect and replace A/C compressor drive belts, pulleys, and tensioners; determine necessary action.
Identify hybrid vehicle A/C system electrical circuits and the service/safety precautions.

Inspect A/C condenser for airflow restrictions; determine necessary action.
Inspect engine cooling and heater systems hoses and pipes; determine necessary action.
Inspect A/C-heater ducts, doors, hoses, cabin filters, and outlets; identify the source of A/C system odors, and determine necessary action
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
*The required outcomes follow the Auto Service Technician (AST) model of the Board of the National Institute for Automotive Service Excellence (ASE)

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

Revised Date: 04/2022