

SOUTHEAST COMMUNITY COLLEGE
ADVANCED TECHNOLOGY & SKILLED TRADES DIVISION
JOHN DEERE TECH
COURSE SYLLABUS
September 10, 2025

I. CATALOG DESCRIPTION

Course Number: JDAT2441
Course Title John Deere AMS & HVAC
Prerequisite(s): JDAT2320, JDAT2340

Catalog Description: Operation, theory, testing, and repairs of precision farming tools to include Global Positioning Systems as used for Ag Management Solutions. Included are parallel tracking (guidance systems), yield mapping/monitoring, field documentation (acre counters, fuel consumption, periodical maintenance of machine, etc.), map-based seeding, Accudepth (tillage machines). This class will also cover theory, operation, and repair of John Deere air conditioning, heating, and ventilation systems including operation of recovery/recycling equipment from R-12 to R134A refrigerant is also covered. Operation and repair of climate control systems as used on John Deere Agricultural equipment is included.

Credit Hours: 6
Class Hours: 38
Lab Hours: 158
Total Contact Hours: 196

II. COURSE OBJECTIVES: *Course will:*

- A. Cover basic AMS fundamentals.
- B. Cover testing and adjustments.
- C. Cover setting up and running equipment.
- D. Cover basic air conditioning operation.
- E. Cover testing and adjustment of components.
- F. Cover air conditioning diagnostics.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

A. STUDENT LEARNING OUTCOMES: *Student will be able to:*

1. Explain the definition of precision agriculture
2. Explain potential benefits of precision agriculture
3. Explain the scope of precision farming and know the precision farming cycle
4. Perform system testing and adjusting
5. Demonstrate precision farming skills for equipment sales and support
6. Exhibit skills on AMS systems
7. Explain basic HVAC fundamentals
8. Explain basic HVAC components
9. Explain refrigerants and refrigerant oil
10. Explain service equipment function and purpose
11. Perform system inspection and diagnosis
12. Perform system testing and adjusting
13. Perform system preparation for service

14. Charge A/C systems with gauges

15. Identify new product changes

B. GENERAL EDUCATION LEARNING OUTCOME:

GELO #3: Critical Thinking & Problem Solving

1. Collect, identify, interpret and analyze data.

2. Synthesize information to arrive at reasoned solutions to problems.

3. Evaluate the validity of arguments, alternatives, data, outcomes, and/or impacts of actions.

IV. CONTENT/TOPICAL OUTLINE

A. Fundamentals and orientation

B. System operations

C. System inspection/diagnosis

D. System testing and adjusting

E. Heating, ventilation and air conditioning basic fundamentals

F. Heating and air conditioning components

G. Refrigerant and refrigerant oil

H. Service equipment

I. System inspection, diagnosis, and testing

V. INSTRUCTIONAL MATERIALS

Required text(s): John Deere Fundamentals of Service, Precision farming essentials
John Deere Fundamentals of Service/Air Conditioning.

Other material(s): Required tool set
Safety glasses (regulation Z87)
Leather shoes/work boots
John Deere uniform
Colored pencils
Notebook
Writing instruments
RACF identification and password

VI. METHODS OF PRESENTATION/INSTRUCTION

A. Methods of presentation typically include a combination of the following:

1. Lecture
2. Small and large group discussion
3. Video presentations
4. Demonstrations
5. Project boards
6. Flip charts
7. Handouts
8. Observations
9. Field trips

VII. METHODS OF EVALUATION

A. Methods of evaluation typically include a combination of the following:

1. Notebook (if required)
2. Quizzes
3. Tests
4. Presentations

5. Demonstrations

Grading will follow the SCC Standard Grade Scale Policy. See **Course Information Document** for specific details on how the course grades are calculated.

VIII. SPECIFIC COURSE REQUIREMENTS:

- A. Students must complete all tests, projects, assignments, and notebook (if required).
- B. Students must earn a final grade of 70% (2.0) or higher.
- C. Program safety rules will be followed. See the **Course Information Document** for any additional safety rules established by the instructor.
- D. Safety belts will be worn at all times, on or in any motorized vehicle, if equipped.
- E. Attendance and participation. See **Course Information Document** for attendance and participation policy.