

Engaging Industry and Education to Solve Ag Technology Workforce Issues



MINNESOTA STATE

Northern Agricultural Center of Excellence



CASE

*Curriculum for Agricultural
Science Education*

AgCentric, Northern Center of Ag Excellence

One of eight Centers of Excellence, part of MN State College and University System

Mission

- We Develop And Support Excellence In Agriculture, Food, and Natural Resources Programs And Career Pathways In Partnership With K-12, Government, Other Academic Institutions, And The Industry. [AGCENTRIC](#)

Curriculum for Agricultural Science Education - CASE

Who: CASE designs inquiry-based agricultural curriculum for middle and high school classrooms, offers lifetime certification, training and support for teachers, and prepares students for college and career readiness. CASE is an initiative of the National Council for Agricultural Education.

Vision: To connect education and industry through purposeful curricula and transformative professional development.

Mission: To impact student career readiness by empowering teachers with improved instructional practices and relevant curricula sustained by professional development. [CASE4Learning](#)

Project Overview

- Equipment Maintenance and Technology course
- Prepare Agricultural Technicians
- Curriculum Development
- Professional Development
- **Education and Industry Partnerships**



Agricultural Equipment Maintenance and Technology Curriculum

- National scope
- Year Long Course
- Aligned to Standards
- College Articulation
- Student Assessment
- Industry Credential/Certification



Partner Roles

- **Industry**
 - Identify the careers and technical skills
 - Standards
 - Certifications and Credentialing needs
 - Education support (financial and in-kind)
- **Post-Secondary**
 - Technical skill and application
 - Prep for Industry
 - Lesson Development
- **Secondary**
 - Base knowledge and technical skills
 - Prep for post-secondary and/or industry
 - Lesson Development
- **Curricular and Professional Development**
 - Develop a teacher prep program
 - Connect secondary, post-secondary, and industry
 - Pedagogy and Professional Development Planning

Partner Recruitment

- Industry Associations
 - Association of Equipment Manufacturers
 - Associate Equipment Dealers
- Post-Secondary Programs
 - Technical Education Instructors
- Secondary Programs
 - Ag Mechanics instructors
 - Secondary programs with local need

Curriculum Development Committee

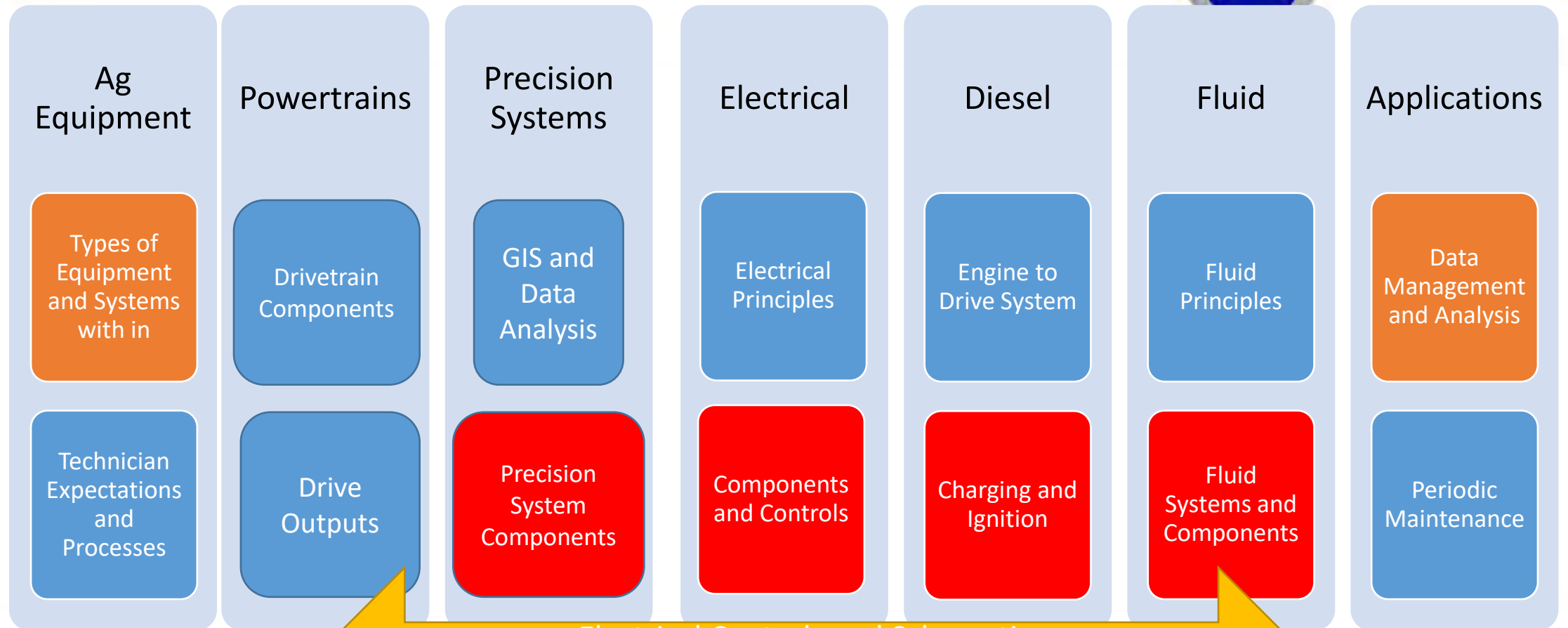


The screenshot displays a web interface for the Curriculum Development Committee, organized into three main sections:

- Session 1: Road Map** (Icon: Road):
 - Enter Contact Information
 - Project Timeline
 - Topic Brainstorm
- Session 2: Concepts** (Icon: Head with gears):
 - Lesson Development Philosophy
 - Ag Power and Technology Course Outline
 - Mechanical Systems in Agriculture Outline
- Session 3: Objectives** (Icon: Wrench and screwdriver):
 - Activities, Projects, and Problems
 - Performance Objective Template
 - CASE Ag Engineering Pathway Map
 - Submit Completed Performance Objectives Here

- AgCentric
- Secondary Schools
- CASE
- Industry
 - Association of Equipment Manufacturers
 - Equipment Dealers Association
 - Equipment Dealers

Curricular Implementation Scaffolded Content(Applying Knowledge)



Electrical Controls and Schematics
Diagnostic Process and Troubleshooting
Voltage Drop and Pressure Drop

Name _____

CASE

Work/Repair Order Template

Customer Information

| | | | |
|--------------------|--|------|--|
| Name (Last, First) | | Date | |
| Equipment | | | |
| Serial Number | | | |
| Drive Time/Mileage | | | |

Complaint (Concern)

What is the customer's complaint? How did you verify the complaint?

Cause

What are the symptoms of the component failure? What is the root cause?

Key Part(s)

| Part Number | Part Name | Quantity |
|-------------|-----------|----------|
| | | |
| | | |
| | | |

Correction

What steps did you take to repair the problem?

Confirm

What steps did you take to confirm operation? What was the outcome?

Name _____

CASE

Work/Repair Order Evaluation Rubric

| Areas with Room for Improvement | Criteria | Areas that Meet or Exceed Expectations |
|---------------------------------|--|--|
| | Grammar The work/repair order uses proper grammar throughout the document. | |
| | Concisely Written The student wrote the work/repair order concisely, using only necessary wording and jargon. | |
| | Correct Terminology The work/repair order uses the correct terminology to communicate parts, failures, and procedures during diagnosis and correction. | |
| | Professional The order is professional and appropriate to file with employers and provide to the customer. The complaint, cause, key part, correction, and confirm and all communicated clearly. | |

Professional Development Implementation



- Professional Development
 - Teacher Certification
 - Industry Connections
 - Learning Community

Industry Support

- Curriculum content development
 - What concepts and skills are needed.
- Professional Development Attendance
 - Scholarships
- Teacher Certification
- Classroom Resources

Industry Connections

- Teachers are connected with industry partners during the professional development
- Materials and Equipment
 - Listed in the curriculum and sent to the industry partners
- Field trips
 - Integrated into the curriculum
 - Written for the Industry partner
 - Tried and tested to fit industry and educational needs

Industry Support – Wider Network



AED Foundation



AEDF HIGH SCHOOL RECOGNITION PROCESS

- 1 HAVE AN ARTICULATION AGREEMENT IN PLACE WITH A LOCAL AEDF ACCREDITED COLLEGE (DUAL CREDITS RECOMMENDED).
- 2 PROVIDE ADVISORY BOARD LISTS FOR BOTH THE HIGH SCHOOL AND AEDF ACCREDITED COLLEGE.
- 3 PROVIDE A VIRTUAL TOUR OF PROGRAM LAB.
- 4 SUBMIT A LETTER OF RECOMMENDATION FROM THE SPONSORING ACCREDITED COLLEGE AS WELL AS A SUPPORTING LETTER FROM AN AED DEALER MEMBER.
- 5 SUBMIT A SUMMARY OF THE PROPOSED RECOGNIZED PROGRAM TO BE APPROVED.

DID YOU KNOW? CURRENTLY, 15 SCHOOLS ARE RECOGNIZED ACROSS NORTH AMERICA!
HEAD TO AEDFOUNDATION.ORG TO LEARN HOW YOUR SCHOOL CAN BE NEXT!



For more information on The AED Foundation's Recognized High School Programs, visit aedfoundation.org or contact the Foundation's Vice President of Education and Programming, Liz McCabe, at lmccabe@aednet.org.



Recognized High School Program

Industry Certification

- Industry Standards Alignments
- Exam questions
- LMS platform
- 3rd Party certification/credential



Current Impact

- 6 CASE Institutes
- 73 Certified Teachers
 - 17 States
 - 2 Post Secondary Teachers
- 1000+ students
- Draft Certification Exam



Future Goals

Technical Applications

- Prepare 80 teachers/year
- Expose 2000 students a year to technician careers
- 4 Regional Sites
 - Midwest
 - Northeast
 - West
 - South

New Modular Courses

- **Safety (In Development)**
- **Small Gas Engines (Piloted)**
- Robotics and Automation
- EV Technologies

Teacher Opportunities

Summer 2024 Professional Development

- 8 Day Training
 - 5 Days in Person
 - 3 Days Virtual
- Locations were announced November 1st on the CASE website. [CASE4Learning Website](#)



AEMT Curriculum

- To request a copy of the curriculum
 - [AEMT Curriculum Request](#)
- Remember
 - Scholarship support to do the Professional Development
 - Support to build industry partnerships
 - For materials, field experiences, potential financial support
 - Access to learning communities.

Contact Me

Judy Barka

judy.barka@clcmn.edu