



AGRIBUSINESS SCIENCE & TECHNOLOGY

Associate in Applied Science (AAS) Program Code: 10-006-2 Total Credits: 61-62

Mid-State's Agribusiness Science & Technology program prepares students to be owners or employees of a farm business in all sectors of the agriculture industry or work in businesses that support the agriculture industry. The program includes dairy and livestock management and traditional crop production. You'll learn to develop a nutrient management plan, calculate cost of production, and develop a long-term facility and equipment plan as well as a farm business plan. Hands-on experiences include taking soil samples; identifying diseases, insects, and weeds that impact profitability; and working with livestock nutrition and management. Graduates obtain a private pesticide applicators certificate.

Estimated tuition and fees: mstc.edu/programcosts

ACADEMIC ADVISOR

To schedule an appointment with an academic advisor, call 715.422.5300. Academic advisors will travel to other campuses as necessary to accommodate student needs. For more information about advising, visit mstc.edu/advising.

NEW STUDENT CHECKLIST

Complete the following steps to prepare for your New Student Advising appointment with your academic advisor:

- Submit a Mid-State application at mstc.edu/apply.
- Send official transcripts to:
Mid-State Technical College
Student Services
1001 Centerpoint Drive
Stevens Point, WI 54481
- Complete the Free Application for Federal Student Aid (FAFSA) at fafsa.gov. Mid-State's Financial Aid team is available to assist with your FAFSA application and to answer your financial aid questions. Contact Financial Aid or schedule an appointment at mstc.edu/financial-aid.
- Set up student MyCampus account at mstc.edu/mycampus-assistance.
- Schedule a New Student Advising appointment at mstc.edu/advising.



mstc.edu • 888.575.6782 • TTY: 711



ADAMS CAMPUS
401 North Main
Adams, WI 53910

MARSHFIELD CAMPUS
2600 West 5th Street
Marshfield, WI 54449

**STEVENS POINT
DOWNTOWN CAMPUS**
1001 Centerpoint Drive
Stevens Point, WI 54481

WISCONSIN RAPIDS CAMPUS
500 32nd Street North
Wisconsin Rapids, WI 54494

CAREER PATHWAY • BEGIN AT ANY POINT

HIGH SCHOOL STUDENT

COLLEGE TRANSFER

RETURNING ADULT

CREDIT FOR PRIOR LEARNING AND EXPERIENCE

CREDIT FOR PRIOR LEARNING AND EXPERIENCE

- Certifications and Licenses
- High School Credit
- Military Experience
- National/Standardized Exams
- Transfer Credit
- Work and Life Experience

Learn about Credit for Prior Learning at mstc.edu/cpl.

CERTIFICATE

AG DIESEL ENGINES AND EQUIPMENT

Certificate • 5 Credits

INTRODUCTION TO AGRICULTURE BUSINESS

Certificate • 8 Credits

AGRONOMY EQUIPMENT BASICS

Certificate • 5 Credits

INTRODUCTION TO AGRICULTURE TOPICS

Certificate • 10 Credits

For more information and additional opportunities, visit mstc.edu/career-accelerator.

TECHNICAL DIPLOMA

AGRONOMY TECHNICIAN

Technical Diploma • 27 Credits

FARM OPERATION

Technical Diploma • 27 Credits

Start Your Career

- Grower
- Field Worker
- Irrigator

Start Your Career

- Production Agriculturalist
- Herdsman
- Livestock Breeder

ASSOCIATE IN APPLIED SCIENCE (AAS)

AGRIBUSINESS SCIENCE & TECHNOLOGY

Associate in Applied Science (AAS) • 61-62 Credits

Start Your Career

- Agronomy Technician
- Herdsman
- Production Agriculture Manager

BACHELOR'S DEGREE

BACHELOR'S DEGREE OPTIONS

For those interested in continuing their education, Mid-State offers transfer agreements with various four-year colleges and universities. For more information and additional opportunities, visit mstc.edu/transfer.

OTHER OPTIONS

RELATED PROGRAMS

- Arborist Technician
- Utility Tree Trimmer

SAMPLE FULL-TIME CURRICULUM OPTION

Term		13-14 credits
10006105	Agribusiness Financial Analysis	2
10080105	Intro to Soil Science	3
10091102	Intro to Animal Science	3
10093101	Integrated Pest Management ☑	2
10804107	College Mathematics ☑	3
	-OR-	
10804118	Intermediate Algebra with Applications ☑	4
Term		17 credits
10070103	Basic Agriculture Electrical, Mechanical, and Irrigation Systems	3
10093102	Intro to Precision Agriculture	3
10091103	Animal Nutrition	4
10801195	Written Communication ☑ -OR-	
10801136	English Composition 1 ☑	3
10806114	General Biology	4
Term		14 credits
10006104	Intro to Agriculture Engineering Technology	3
10006007	Agriculture Internship -OR-	
10006110	Agriculture Capstone	2
10090101	Agriculture Business Management	3
10093104	Principles of Crop Management	3
10801196	Oral/Interpersonal Communication ☑ -OR-	
10801198	Speech ☑	3
Term		17 credits
10003101	Agricultural Diesel Engine Systems	3
10006101	Agricultural Computations	3
10006102	Agribusiness Equipment & Facilities	2
10006103	Introduction to Food Science	3
10809166	Intro to Ethics: Theory & Application ☑	3
10809198	Intro to Psychology ☑ -OR-	
10809188	Developmental Psychology ☑	3
Total credits 61-62		

☑ This course has options available to receive credit for prior learning (CPL) or work experience. Visit the website at mstc.edu/cpl or contact your advisor for details.

Please Note:

- This curriculum sequence is only for student planning. Actual student schedules will vary depending on course availability.
- Program completion time may vary based on student scheduling and course availability. For details, go to mstc.edu/schedule.

SAMPLE PART-TIME CURRICULUM OPTION

Term		6 credits
10080105	Intro to Soil Science	3
10091102	Intro to Animal Science	3
Term		7 credits
10091103	Animal Nutrition	4
10093102	Intro to Precision Agriculture	3
Term		6 credits
10090101	Agriculture Business Management	3
10093104	Principles of Crop Management	3
Term		8 credits
10006101	Agricultural Computations	3
10006102	Agribusiness Equipment & Facilities	2
10003101	Agricultural Diesel Engine Systems	3
Term		7 credits
10006105	Agribusiness Financial Analysis	2
10093101	Integrated Pest Management ☑	2
10801195	Written Communication ☑ -OR-	
10801136	English Composition 1 ☑	3
Term		10 credits
10070103	Basic Agriculture Electrical, Mechanical, and Irrigation Systems	3
10801196	Oral/Interpersonal Communication ☑ -OR-	
10801198	Speech ☑	3
10806114	General Biology	4
Term		8-9 credits
10006104	Intro to Agriculture Engineering Technology	3
10006007	Agriculture Internship -OR-	
10006110	Agriculture Capstone	2
10804107	College Mathematics ☑	3
	-OR-	
10804118	Intermediate Algebra with Applications ☑	4
Term		9 credits
10006103	Introduction to Food Science	3
10809166	Intro to Ethics: Theory & Application ☑	3
10809198	Intro to Psychology ☑ -OR-	
10809188	Developmental Psychology ☑	3
Total credits 61-62		

MULTIPLE MEASURES

Multiple Measures Writing (MMW): High school GPA of 2.6 and successful completion of 2.0 credits of high school writing courses with a "C" or better

Multiple Measures Math 1 (MMM_1): High school GPA of 2.6 and successful completion of 1.0 credits of high school math (Algebra 1 or equivalent) with a "C" or better

Multiple Measures Science 1 (MMS_1): High school GPA of 2.6 and successful completion of 1.0 credits of high school lab science course with a "C" or better

Multiple Measures Reading (MMR): High school GPA of 2.6 and successful completion of 2.0 credits of high school literature courses with a "C" or better

Multiple Measures Math 2 (MMM_2): High school GPA of 2.6 and successful completion of 2.0 credits of high school math including Algebra 1 and Algebra 2 with a "C" or better

Multiple Measures Science 2 (MMS_2): High school GPA of 2.6 and successful completion of 1.0 credits of high school chemistry with a "C" or better

Past high school and college transcripts are used in making course placement decisions.

COURSE DESCRIPTIONS

Agribusiness Equipment & Facilities

10006102.....2 credits

Examines arrangement and design of efficient farm buildings and equipment as well as construction requirements. Farmstead planning includes mapping of present facilities as well as evaluating usefulness and planning long and short-range goals for farmstead changes to improve economics, safety, efficiency and aesthetics. Environmental factors and animal wellness needs are identified, including space, ventilation, nutrition, and care. Also examines the appropriate use and care of feed, fertilizer, planting and harvesting equipment, and dairy and livestock equipment and facilities. Possible equipment/facility changes are discussed and business expansion is analyzed.

Agribusiness Financial Analysis

10006105.....2 credits

This course provides the student opportunities to develop necessary business skills for operating a successful farm business. These skills involve analyzing, evaluating, creating and decision-making. These skills will be used with balance sheets, Income & Expense projections, cash flow needs, budget creation, benchmarking, cost of production, inventories, credit needs and history along with loan decisions.

Agricultural Computations

10006101.....3 credits

Deals with the application of quantitative tools to support agribusiness management decisions. These management decisions are executed using spreadsheet and data analysis (e.g., Microsoft Excel) while using elementary mathematical tools in an agricultural economics context. This course is designed to prepare students for upper-level agribusiness courses as well as real-world situations in agriculture.

Agricultural Diesel Engine Systems

10003101.....3 credits

Students learn the different uses of diesel engines in an agricultural setting. This course also provides an introduction to fuel systems, exhaust systems, and electrical systems. Use of technical service resources and precision measuring is stressed.

Agriculture Business Management

10090101.....3 credits

Examines the farm business as a complex set of enterprises that all need to be managed effectively to be successful and sustainable. Students learn to develop a business plan, set short- and long-term goals, identify and implement alternatives for reaching goals. Includes strategies and tools to monitor success. Students also learn to organize and maintain farm business records as well as how to interpret and analyze the records to make sound farm management decisions.

Agriculture Capstone

10006110.....2 credits

This project-based course gives students the opportunity to demonstrate technical competency of agribusiness classroom study. The project simulates many of the tasks students are expected to perform as an agricultural professional. A capstone research paper and portfolio will be due at the end of this course.

Prerequisite: Instructor approval.

Agriculture Internship

10006007.....2 credits

This course provides an opportunity for students to apply concepts of agribusiness classroom study with specific off-campus real-life agricultural experiences at local employers. An organized plan of experiences built around agriculture competencies is planned, supervised, and evaluated by the instructor and cooperating business supervisor.

Prerequisites: Admission to the Agribusiness and Science Technology or Agronomy Technician program and completion of at least 12 credits of agriculture course work in the areas of 10006, 10070, 10080, 10090, 10091, or 10093.

Animal Nutrition

10091103.....4 credits

Includes classification and function of nutrients, deficiency symptoms, characterization of feedstuffs, and formulation of diets for domestic animals. They are also able to successfully understand the digestive processes of mono-gastric and ruminant animals.

Basic Agriculture Electrical, Mechanical, and Irrigation Systems

10070103.....3 credits

Students learn the fundamentals of electrical systems related to agricultural equipment and facilities. This course also builds an understanding of the AC electrical circuits used in today's agricultural businesses. Students use digital multi-meters to diagnose common electrical problems found in agricultural electrical circuits, equipment, and motors. Topics discussed include safety precautions, Ohm's law, generators, batteries, electric motors, water heaters, overcurrent protection, conductor sizing, and national electrical code requirements.

COURSE DESCRIPTIONS

College Mathematics ☑

108041073 credits

This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.

Prerequisite: High School GPA of 2.6 and MMM_1 or Accuplacer Arithmetic of 250 and QAS 234 or ACT Math score of 17 or Pre-Algebra 10834109 with a "C" or better

Developmental Psychology ☑

10809188.....3 credits

Studies human development throughout the lifespan and explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive, and psychosocial changes that affect the individual from conception to death. Application activities and critical thinking skills enable students to gain an increased knowledge and understanding of themselves and others.

Prerequisite: High School GPA of 2.6 and MMR and MMW or Accuplacer Reading Skills of 236 and Writing of 237 or ACT of 15 Reading/16 English

English Composition 1 ☑

108011363 credits

Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.

Prerequisite: High School GPA of 2.6 and MMW or Accuplacer Writing of 262 or ACT English score of 20 or completion of College Reading and Writing 1 10831104 with a "C" or better

General Biology

10806114 4 credits

Introduces general biological concepts and principles. Emphasis is on cell structure and function, genetics, evolution, and taxonomical relationships. Consideration is also given to diversity among the various kingdoms.

Prerequisite: High School GPA of 2.6 and MMS_1 or Accuplacer Reading Skills of 249 or ACT Reading score of 15

Integrated Pest Management ☑

10093101.....2 credits

An effective and environmentally sensitive approach to pest management. Learners explore various approaches in integrated pest management (IPM) and gather information on the life cycles of pests and their interactions with the environment. This information in combination with available pest control methods are used to identify the most economical pest management options, with the least possible hazard to people, property, and environment.

Intermediate Algebra with Applications ☑

10804118 4 credits

This course offers algebra content with applications. Topics include properties of real numbers; order of operations; algebraic solution for linear equations and inequalities; operations with polynomial and rational expressions; operations with rational exponents and radicals; and algebra of inverse, logarithmic, and exponential functions.

Prerequisite: High School GPA of 2.6 and MMM_1 or Accuplacer Arithmetic of 263 and QAS 234 or ACT Math score of 19 or QAS of 245 or Pre-Algebra 10834109 with a "C" or better

Intro to Agriculture Engineering Technology

10006104.....3 credits

Studies engineering concepts and principles as they apply to farm power and machinery, electrical energy and processing, structures and environment, irrigation and drainage, and food engineering. Students are exposed to techniques in design, planning, construction, and performance evaluation.

Intro to Animal Science

100911023 credits

Introduces the basics of livestock management. Examines management of dairy, beef, sheep, and other common livestock with concentration on nutrition, feedstuff's classification, reproduction, genetics, animal behavior, animal health, and sustainable agriculture practices. Includes basic husbandry and care procedures for animals. A livestock management plan will be created and analyzed.

Intro to Ethics: Theory & Application ☑

108091663 credits

Provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives are used to analyze and compare relevant issues. Students critically evaluate individual, social, and/or professional standards of behavior, and apply a systemic decision-making process to these situations.

Prerequisite: High School GPA of 2.6 and MMR and MMW or Accuplacer Reading Skills of 236 and Writing of 237 or ACT of 15 Reading/16 English

Intro to Precision Agriculture

100931023 credits

Explores agricultural applications of GPS, yield monitoring systems, and mapping. Students learn to interpret maps generated by precision agriculture equipment. Learners experience setup, calibration and operation of equipment/software designed to support the production crop industry.

COURSE DESCRIPTIONS

Intro to Psychology ☑

10809198**3 credits**

This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

Prerequisite: High School GPA of 2.6 and MMR and MMW or Accuplacer Reading Skills of 236 and Writing of 237 or ACT of 15 Reading/16 English

Intro to Soil Science

10080105**3 credits**

Designed to provide students with fundamental knowledge of soil and soil composition. Includes study of soil types, formation factors, physical properties, biological properties, and basic soil chemistry. Units covering tillage, conservation, pH, soil management, plant nutrients, and fertilizer sources are also included. Students gain the skills required to interpret soil test reports and soil survey maps and recognize qualities of various soil types. Students perform soil sampling, residue measurements, compaction assessments, and soil loss determinations per crop rotation guidelines.

Introduction to Food Science

10006103**3 credits**

Offers students unique opportunities to learn where their food supply comes from, how the food is produced, and how consumption is met on a global basis. Applying science principles to food production will enhance the student's ability to understand the phenomena of food production.

Oral/Interpersonal Communication ☑

10801196**3 credits**

Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Prerequisite: High School GPA of 2.6 and MMR and MMW or Accuplacer Reading Skills of 236 and Writing of 237 or ACT of 15 Reading/16 English

Principles of Crop Management

10093104**3 credits**

The basic principles and concepts of sound agronomic practices are discussed for corn, soybeans, small grains, and forage crops grown in Wisconsin. All sound agronomy practices are emphasized for each crop area as it relates to cultural and other specific inputs of crop production, environmental factors, and sustainable systems.

Speech ☑

10801198**3 credits**

Explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, structuring evidence and support, delivery techniques, and other essential elements of speaking successfully, including the listening process, form the basis of this course. Includes informative, persuasive, and occasion speech presentations.

Prerequisite: High School GPA of 2.6 and MMR and MMW or Accuplacer Reading Skills of 253 and Writing of 262 or ACT of 21 Reading/19 English or completion of College Reading and Writing 1 10831104 with a "C" or better

Written Communication

10801195**3 credits**

Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

Prerequisite: High School GPA of 2.6 and MMW or Accuplacer Writing of 262 or ACT English score of 20 or completion of College Reading and Writing 1 10831104 with a "C" or better