AI DATA SPECIALIST

Associate in Applied Science (AAS)
Program Code: 10-156-4
Total Credits: 62

Graduates of the AI Data Specialist program gain the core skills needed to work confidently with data and machine learning technologies. They learn to collect, clean, and transform data from multiple sources; build and evaluate predictive models; and design AI solutions for applications such as image recognition, natural language processing, and business intelligence. Students also develop strong programming, analytics, and problem-solving abilities, along with an understanding of the ethical considerations essential to responsible AI development and decision-making.

Students experience hands-on, career-focused learning using industry tools and technologies. They work with Python, SQL databases, cloud platforms, and big-data environments while exploring real AI applications through projects in computer vision, predictive analytics, and NLP. Coursework is paired with practical experiences such as building dashboards, deploying machine learning models, and using industrial data acquisition equipment. The program culminates in an AI/data capstone and internship, giving students the chance to design and implement AI solutions in real business or industrial settings—building confidence, skills, and a strong professional portfolio.

This program is a shared program with Waukesha County Technical College (WCTC). Students will be able to complete the full program locally through a mix of online classes at WCTC and both in-person and online classes at Mid-State. Graduates will receive their degree from WCTC.

To learn more about this program, visit **mstc.edu/programs**.

ACADEMIC ADVISOR

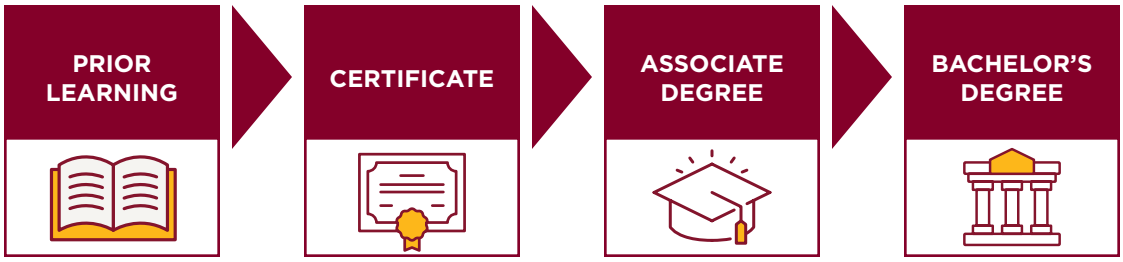
To schedule an appointment with an academic advisor, call 715-422-5300. Academic advisors will travel to other campuses as necessary to accommodate student needs. For more information about advising, visit **mstc.edu/advising.**

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
  500 32nd Street North
  Wisconsin Rapids, WI 54494
- 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**.

CAREER PATHWAY



Career pathways help you build your education step by step. Each stage offers one or more credentials that are recognized by employers and lead to real jobs—and you can keep building toward your career goals as you go.

Begin at any point.

Prior Learning

Credit for Prior Learning

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

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

High School Credit

- High School Dual Credit
- Mid-State Fast Track

Learn about High School Credit at **mstc.edu/dc**.

Certificate

- AI Technician (28 Credits)
- Foundations of AI (19 Credits)
- Foundations of Data Analytics (12 Credits)

Associate Degree

- AI Data Specialist (62 Credits)
  Start Your Career: AI Data Technician, AI Support Analyst, Machine Learning Data Specialist, Manufacturing Data Analyst, Smart Manufacturing Data Technician

Bachelor's Degree

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

Other Options

Related Programs: IT Network Specialist, IT Cybersecurity Specialist, IT Software Developer

OUTCOMES

Employers will expect you, as an AI Data Specialist graduate, to be able to:

- Communicate with stakeholders.
- Acquire data from a variety of common data sources.
- Transform data to meet business and technical needs.
- Evaluate machine learning models.
- Implement AI solutions.
- Examine the various applications of AI in industry.
- Navigate the ethical implications of various types of AI solutions.

TECHNICAL SKILLS ATTAINMENT

The Wisconsin Technical College System (WTCS) has implemented a requirement that all technical colleges measure outcomes attained by students. This requirement is called Technical Skills Attainment (TSA). The main objective of TSA is to ensure graduates have the technical skills needed by employers. Faculty will let students know when and how the TSA is being assessed in the program.

ADMISSIONS PROCEDURES

The AI Data Specialist program is a shared offering with Waukesha County Technical College (WCTC). Financial aid should be filed through WCTC using FAFSA code 005294.

STUDENT HANDBOOK

Visit **mstc.edu/studenthandbook** to view Mid-State's student handbook, which contains information about admissions, enrollment, appeals processes, services for people with disabilities, financial aid, graduation, privacy, Mid-State's Student Code of Conduct, and technology.

ADDITIONAL COURSES AS NEEDED

The following courses may be recommended or required if the student does not achieve minimum placement scores.

College Reading and Writing 1
10831104
3 credits
Provides learners with opportunities to develop and expand reading and writing skills to prepare for college-level academic work. Students will employ critical reading strategies to improve comprehension, analysis, and retention of texts. Students will apply the writing process to produce well-developed, coherent, and unified written work.

Pre-Algebra
10834109
3 credits
Provides an introduction to algebra. Includes operations on real numbers, solving linear equations, percent and proportion, and an introduction to polynomials and statistics. Prepares students for elementary algebra and subsequent algebra-related courses.

MULTIPLE MEASURES

Students can place into courses using high school GPA and completed classes. Placement can be determined in the following ways:

- **Multiple Measures Writing (MMW)**
  High school GPA of 2.6 & successful completion of 2.0 credits of high school writing courses with a "C" or better
- **Multiple Measures Reading (MMR)**
  High school GPA of 2.6 & successful completion of 2.0 credits of high school literature courses with a "C" or better
- **Multiple Measures Math 1 (MMM_1)**
  High school GPA of 2.6 & successful completion of 1.0 credit of high school math (Algebra 1 or equivalent) with a "C" or better
- **Multiple Measures Math 2 (MMM_2)**
  High school GPA of 2.6 & successful completion of 2.0 credits of high school math including Algebra 1 and Algebra 2 with a "C" or better
- **Multiple Measures Science 1 (MMS_1)**
  High school GPA of 2.6 & successful completion of 1.0 credit of high school lab science course with a "C" or better
- **Multiple Measures Science 2 (MMS_2)**
  High school GPA of 2.6 & successful completion of 1.0 credit of high school chemistry with a "C" or better

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

SAMPLE FULL-TIME CURRICULUM OPTION

AI Data Specialist• 62 Total Credits

Term 7 Credits

Course Number	Course Name	CPL	Credits
10156119	Data Concepts	No	2
10605133	Intro to Operation Tech	No	2
10804133	Mathematics and Logic	No	3

Term 7 Credits

Course Number	Course Name	CPL	Credits
10156107	Data Modeling	No	2
10156109	Intro to SQL	No	2
10156114	Business Applications of AI	No	3

Term 9 Credits

Course Number	Course Name	CPL	Credits
10152101	Python Programming	No	1
10156102	Advanced SQL	No	3
10156110	Data Visualization & Reporting	No	2
10801136	English Composition I	Yes	3

Term 4 Credits

Course Number	Course Name	CPL	Credits
10150190	Network Fundamentals	No	2
10156113	Python Data Manipulation	No	2

Term 6 Credits

Course Number	Course Name	CPL	Credits
10804189	Introductory Statistics	Yes	3
10809198	Intro to Psychology	Yes	3

Term 7 Credits

Course Number	Course Name	CPL	Credits
10156111	Intro to Data Analytics	No	2
10664158	Operational Tech Applications	No	2
10801197	Technical Reporting	No	3

Term 7 Credits

Course Number	Course Name	CPL	Credits
10156112	Predictive Analytics	No	2
10156115	Computer Vision	No	2
10664150	Industrial Data Acquisition	No	3

Term 1 Credits

Course Number	Course Name	CPL	Credits
10890108	Employment Success	No	1

SAMPLE FULL-TIME CURRICULUM OPTION • CONTINUED

AI Data Specialist• 62 Total Credits

Term 10 Credits

Course Number	Course Name	CPL	Credits
10156117	Big Data Engineering	No	3
10156118	AI/Data Capstone	No	4
10809143	Microeconomics	No	3

Term 2 Credits

Course Number	Course Name	CPL	Credits
10156116	Natural Language Processing	No	2

Term 2 Credits

Course Number	Course Name	CPL	Credits
10107123	Internship IT	No	2

Please Note

- Credit for Prior Learning (CPL) options are available for some courses. You can visit **mstc.edu/cpl** or contact your academic advisor for details.
- 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**.
- Get the latest updates online at **mstc.edu**.

SAMPLE PART-TIME CURRICULUM OPTION

AI Data Specialist• 62 Total Credits

Term 4 Credits

Course Number	Course Name	CPL	Credits
10156119	Data Concepts	No	2
10605133	Intro to Operation Tech	No	2

Term 5 Credits

Course Number	Course Name	CPL	Credits
10156109	Intro to SQL	No	2
10156114	Business Applications of AI	No	3

Term 3 Credits

Course Number	Course Name	CPL	Credits
10152101	Python Programming	No	1
10156110	Data Visualization & Reporting	No	2

Term 4 Credits

Course Number	Course Name	CPL	Credits
10156107	Data Modeling	No	2
10156113	Python Data Manipulation	No	2

Term 6 Credits

Course Number	Course Name	CPL	Credits
10804133	Mathematics and Logic	No	3
10804189	Introductory Statistics	Yes	3

Term 5 Credits

Course Number	Course Name	CPL	Credits
10156102	Advanced SQL	No	3
10156111	Intro to Data Analytics	No	2

SAMPLE PART-TIME CURRICULUM OPTION • CONTINUED

AI Data Specialist• 62 Total Credits

Term 2 Credits

Course Number	Course Name	CPL	Credits
10156112	Predictive Analytics	No	2

Term 6 Credits

Course Number	Course Name	CPL	Credits
10156117	Big Data Engineering	No	3
10801136	English Composition I	Yes	3

Term 4 Credits

Course Number	Course Name	CPL	Credits
10150190	Network Fundamentals	No	2
10156116	Natural Language Processing	No	2

Term 5 Credits

Course Number	Course Name	CPL	Credits
10664158	Operational Tech Applications	No	2
10801197	Technical Reporting	No	3

Term 5 Credits

Course Number	Course Name	CPL	Credits
10156115	Computer Vision	No	2
10664150	Industrial Data Acquisition	No	3

Term 1 Credits

Course Number	Course Name	CPL	Credits
10890108	Employment Success	No	1

Term 7 Credits

Course Number	Course Name	CPL	Credits
10156118	AI/Data Capstone	No	4
10809198	Intro to Psychology	Yes	3

Term 3 Credits

Course Number	Course Name	CPL	Credits
10809143	Microeconomics	No	3

Term 2 Credits

Course Number	Course Name	CPL	Credits
10107123	Internship IT	No	2

Advanced SQL
10156102
3 credits
Learn various advanced SQL topics for SQL Server, including temporary tables, triggers, advanced stored procedures and user-defined functions. Develop skills in optimization, indexing and other performance-tuning tools and techniques. Explore advanced database design, implement windowing functions, perform data integration using triggers and merge statements, and create and parse JSON and XML.
Prerequisites: 156-109 with a minimum grade of C or 152-115 with a minimum grade of C

AI Data Capstone
10156118
4 credits
Demonstrate mastery of program knowledge by working with a team to create a proof-of-concept AI solution or a data solution for a business problem. Learn to complete a project as a virtual team using industry-standard tools. Due to the nature of this course, you must be registered for this course a minimum of 2 weeks prior to the first day of class.
Prerequisites: 156-115 with a minimum grade of C and 156-112 with a minimum grade of C and (152-150 with a minimum grade of C or 152-101 with a minimum grade of C) and (156-106 with a minimum grade of C or 156-116 with a minimum grade of C)

Big Data Engineering
10156117
2 credits
Explore big data architecture and systems. Build data pipelines with industry standard languages to ingest structured and unstructured data. Utilize the big data system to perform data mining and machine learning.
Prerequisites: 156-112 with a minimum grade of C and 156-102 with a minimum grade of C and 156-113 with a minimum grade of C

Business Applications of AI
10156114
3 credits
Learn about the field of artificial intelligence through the lens of various industry verticals. This course explores the various types of AI, how different industries leverage AI solutions, ethical uses of AI, and the benefits and risks of using AI to solve business problems.

Computer Vision
10156115
2 credits
Explore various use cases of computer vision. Use common, pre-built machine learning algorithms to perform basic image processing and classification.
Prerequisites: 156-113 with a minimum grade of C and 156-114 with a minimum grade of C

Data Concepts
10156119
2 credits
Gain an introduction to foundational concepts in data, information, and data presentation/reporting. Learn basic spreadsheet concepts in Excel, including table creation, formulas, functions and cell formatting. Explore the basics of relational databases and queries in Microsoft Access. Learn the basics of data presentation through Excel pivot tables, charts and Access reports.

Data Modeling
10156107
2 credits
Discover concepts of relational databases through data modeling. Learn about entities, attributes, relationships and the different types of keys in a database, and create conceptual, logical and physical data models for a variety of data types. Get an in-depth explanation of relational and dimensional models, and use Microsoft Access to query data.
Prerequisites: 156-108 (may be taken concurrently) with a minimum grade of C or 156-119 (may be taken concurrently) with a minimum grade of C

Data Visualization & Reporting
10156110
2 credits
Learn to create and manage reports in a variety of reporting tools, and explore the uses of data visualizations. Learn to implement self-service BI solutions and query a variety of data sources. Tools used include SQL Server Reporting Services, Power BI and Excel.
Prerequisite: 156-109 with a minimum grade of C

Employment Success
10890108
1 credit
Students in this course will focus on skills that enable them to transition to professional life. As a result of participation, students will be able to develop a resume, prepare to interview effectively and present themselves in a professional manner in person and online. Strengths and personality assessments, practice interviews, keeping a job and career management are included in the curriculum.

English Composition 1
10801136
3 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 Accuplacer Reading 253 or ACT English score of 20 or ACT Reading 21 or completion of College Reading and Writing 1 10831104 with a "C" or better

Industrial Data Acquisition
10664150
3 credits
Explore industrial protocols and communication methods used to move data from sensors, instrumentation and other industrial devices to the edge or the cloud. Gain an introduction to Supervisory Control And Data Acquisition (SCADA) systems, and study legacy and current industrial data communication protocols.
Prerequisites: 605-133 with a minimum grade of C and 152-101 with a minimum grade of C and 150-190 with a minimum grade of C

Internship IT
10107123
2 credits
Gain a broader educational experience through work in this IT internship experience. Your instructor/coordinator will work closely with the worksite supervisor toward common educational objectives and goals. To complete an internship, please contact Career Connections at 262-695-7848 or internshipdepartment@wctc.edu to verify that you have met the prerequisites.
Prerequisite: Approval of Co-op Ed Office

Intro to Data Analytics
10156111
2 credits
Learn to draw business insights from data. Explore descriptive and diagnostic data analytics. Identify trends and patterns within data using Power BI. Perform statistical analysis with Excel to determine causes and correlations.
Prerequisites: 804-189 with a minimum grade of C and 156-110 with a minimum grade of C

Intro to Operational Tech
10605133
2 credits
Study programming, data organization and communication capabilities of popular Programmable Logic Controller (PLC) platforms from Rockwell Automation and Siemens.

Introduction 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 SQL
10156109
2 credits
Gain an introduction to Structured Query Language (SQL) through real-world scenarios. Learn SQL, including joins, aggregate functions, subqueries and the basics of security and permissions. Revisit database design and use table creation/data management commands.
Prerequisites: 156-108 (may be taken concurrently) with a minimum grade of C or 156-119 (may be taken concurrently) with a minimum grade of C

Introductory Statistics
10804189
3 credits
Students taking Introductory Statistics display data with graphs, describe distributions with numbers, perform correlation and regression analyses, and design experiments. They use probability and distributions to make predictions, estimate parameters, and test hypotheses. They draw inferences about relationships including ANOVA. Algebra knowledge and foundational skills in mathematics are important for success in this course.
Prerequisite: High School GPA of 2.6 and MMM_2 or Accuplacer QAS 241 or ACT Math score of 19 or Pre-Algebra 10834109 or College Math 10804107 with a "C" or better

Mathematics and Logic
10804133
3 credits
Students will apply mathematical problem solving techniques. Topics will include symbolic logic, sets, algebra Boolean algebra, and number bases.
Prerequisites: (834-110 (may be taken concurrently) with a minimum grade of C or 804-107 with a minimum grade of C or 804-123 with a minimum grade of C or ASSET-Elementary Algebra with a score of 45 or Accuplacer Elementary Algebra55 or ACT-Math with a score of 21 or ALEKS Math Placement with a score of 30 or COMPASS-Algebra Skills with a score of 46 or GED Math - 2014 Series with a score of 175 or Next-Gen Accuplacer QR Algebra with a score of 260)

Microeconomics
10809143
3 credits
Examine the behavior of individual decision makers, primarily consumers and firms. Topics include choices of how much to consume and to produce, the functioning of perfectly and imperfectly competitive markets, the conditions under which markets may fail, and arguments for and against government intervention. Apply the fundamental tools of economics to real-world problems.

Natural Language Processing
10156116
2 credits
Explore the applications of natural language processing. Utilize machine learning models to perform sentiment analysis.
Prerequisite: 156-112 with a minimum grade of C

Network Fundamentals
10150190
2 credits
Learn the fundamentals of local area networking, defining networks with the OSI Model and understanding wired and wireless networks. Gain an understanding of the Internet Protocol, implementing TCP/IP and working with networking services. Additional topics include wide area networks, network infrastructures, network security and desktop operating system basics.

Operational Tech Applications
10664158
2 credits
Explore Industrial robots and vision systems as well as the methods to extract data from these systems.
Prerequisites: 605-133 with a minimum grade of C or 605-188 with a minimum grade of C

Predictive Analytics
10156112
2 credits
Gain an introduction to predictive analytics. Learn how to use standard Python libraries to prepare and load data for predictive models, create basic visualizations, and run machine learning algorithms to predict outcomes.
Prerequisite: 156-113 with a minimum grade of C

Python Data Manipulation
10156113
2 credits
Learn techniques to manipulate a variety of sources of data using standard Python libraries, including Pandas. Parse text and CSV files, extract data from a database, and clean and manipulate the data. Data will be output to either files or a database.
Prerequisite: 152-101 (may be taken concurrently) with a minimum grade of C

Python Programming
10152101
1 credit
This course introduces the Python Programming Language. Upon completion of this course, students will be able to write Python scripts that process input and output files, manipulate strings, parse text, perform calculations and write Regular Expressions. The course will include interactive lectures and outside course work.

Technical Reporting
10801197
3 credits
Prepare and present oral and written technical reports. Analyze the problems particular to technical writing, and study the methods used in assembling, developing and preparing information for technical publications. Discuss the competencies required of the qualified technical communicator.
Special Schedule Information: English Composition 1 and Technical Reporting can be taken concurrently in the same semester, but cannot be taken in the same term. English Composition 1 (801-136) must be successfully completed (C or better) before taking Technical Reporting (801-197).
Prerequisites: 801-195 with a minimum grade of C or 801-136 (may be taken concurrently) with a minimum grade of C or 801-223 (may be taken concurrently) with a minimum grade of C