ARTIFICIAL INTELLIGENCE DATA SPECIALIST

Program Number 10-156-4
Associates Degree of Applied Science • Four Terms

ABOUT THE PROGRAM

The IT-AI Data Specialist program prepares students to collect, analyze, and leverage data to drive business and organizational decision-making. Through hands-on projects, students learn to manage databases, program in Python, apply artificial intelligence techniques, and interpret complex data using modern analytics tools. The program emphasizes both technical and business applications of AI, giving graduates the skills to bridge the gap between data technology and real-world problem-solving.

Students gain experience in data concepts, AI fundamentals, computer vision, natural language processing, and predictive analytics. The curriculum also covers essential topics in math, logic, and statistics to support data-driven reasoning. Graduates are prepared for entry-level roles such as data analyst, AI technician, or business intelligence specialist, or to continue their studies in advanced IT and AI programs.

PROGRAM OUTCOMES

- Communicate with stake holders.
- 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.

CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

Lakeshore credits transfer to over 30 universities. For more information visit lakeshore.edu/future-students/transfer.

ADMISSIONS AND FIRST SEMESTER ENROLLMENT STEPS

- Submit online application.
- Complete the online Student Success Questionnaire.
- Complete Get Started at Lakeshore appointment.

**Submit high school transcripts, college transcripts, and test scores (optional, highly recommended). Official transcripts will be needed for transferring college credit(s) and for financial aid purposes.*

ACADEMIC PREPAREDNESS/FUTURE SEMESTER ENROLLMENT STEPS

If applicable, complete program-specific academic preparedness requirements and enrollment steps prior to enrolling in occupational or core courses. Students will be notified if there is a program waitlist. View the college's program webpage for details.

APPROXIMATE COSTS

$152.85 per credit tuition (WI resident) plus $9.17 per credit student activity fee. Material fee varies depending on course. Other fees vary by program. Visit https://lakeshore.edu/paying-for-college/tuition-and-fees for details.

FINANCIAL AID

This program is eligible for financial aid. Visit lakeshore.edu/Financial-Aid or talk with your College Recruiter about how to apply for aid.

RELATED PROGRAMS

- Applied AI in Business and Data Certificate

SPECIAL NOTE

Accelerate your learning, earn credit for what you know, and get personalized support to reach your goals. The full CBE definition may be found at lakeshore.edu/CBE.

CONTACT

Lakeshore College Recruiter
920.693.1366 • Recruitment@lakeshore.edu

Catalog No.	Class Title	Credit(s)
	Term 1	
10150114	Networking 1*	3
10152235	Introduction to Python*	3
10156101	Data Concepts*	3
10152234	Programming Introduction*	3
10804189	Introductory Statistics	3
		15
	Term 2	
10156102	Computer Vision with Python*	3
10156103	Natural Language Processing with Python*	3
10156205	SQL Programming & Advanced Queries*	3
10152240	Python for Data Science & Analytics*	3
10801136	English Composition 1	3
		15
	Term 3	
10156100	Business Applications of AI*	3
10156202	Database Management & Administration*	3
10156204	Operational Technologies & Industrial Automation*	3
10156200	Big Data Engineering & Architecture*	3
10801196	Oral/Interpersonal Communication	3
		15
	Term 4	
10196188	Project Management*	3
10156203	Industrial Data Acquisition & Control*	3
10156201	Data Specialist Capstone*	3
10809166	Introduction to Ethics	3
10809198	Introduction to Psychology	3
		15

TOTAL 60

*CBE delivery only

Curriculum and program acceptance requirements are subject to change. Program start dates vary; check with your Academic Counselor for details. The tuition and fees are approximate based on 2025-2026 rates and are subject to change prior to the start of the academic year.

LAKESHORE COLLEGE

BIG DATA ENGINEERING AND ARCHITECTURE...explores big data architecture and systems, focusing on the design and implementation of data pipelines using industry-standard languages. Students will learn to ingest structured and unstructured data, utilize big data systems for data mining, and apply machine learning techniques within a big data environment. PREREQUISITE: 10156101 Data Concepts

BUSINESS APPLICATIONS OF AI...explores artificial intelligence (AI) through a business lens, focusing on how AI technologies are applied in different industries. Students will analyze real-world AI use cases, assess business benefits, and examine ethical considerations.

COMPUTER VISION WITH PYTHON...introduces students to computer vision techniques and their applications. Students will learn Python programming necessary for image processing, object detection, and classification. Students will also implement machine learning models for visual data interpretation. PREREQUISITE: 10156101 Data Concepts or 10152232 Intro to Database Design & Dev

DATA CONCEPTS...introduces students to the foundational principles of data, including how data is stored, structured, and analyzed. Students will explore relational databases, data querying, and visualization techniques. Hands-on projects using SQL and reporting tools will reinforce key concepts.

DATA SPECIALIST CAPSTONE...provides students with the opportunity to apply their knowledge and skills to a real-world information systems project. Students will work in teams to design, develop, and implement a complete information system. PREREQUISITES: 10152240 Python for Data Science & Analytics and 10156202 Database Management & Administration

DATABASE MANAGEMENT AND ADMINISTRATION...covers the fundamental principles and practices of database administration, including installation, configuration, security, backup, and recovery. It also delves into the concepts and techniques of data warehousing, focusing on collecting and storing data from multiple sources to support business intelligence and decision-making. Students will learn to design, implement, and manage both transactional databases and data warehouses. PREREQUISITE: 10156101 Data Concepts

ENGLISH COMPOSITION I...is designed for learners to develop knowledge and skills in all aspects of the writing process. Planning, organizing, writing, editing, and revising are applied through a variety of activities. Students will analyze audience and purpose, use elements of research, and format documents using standard guidelines. Individuals will develop critical reading skills through analysis of various written documents. Discuss reading and writing academic course support with your Counselor.

INDUSTRIAL DATA ACQUISITION AND CONTROL...explores industrial protocols and communication methods used to move data from sensors, workstations, 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. PREREQUISITE: 10156101 Data Concepts

INTRO TO PSYCHOLOGY...introduces students to a survey of the multiple aspects of human behavior. It involves a survey of the theoretical foundations of human functioning in such areas as learning, motivation, emotions, personality, deviance and pathology, physiological factors, and social influences. It directs the student to an insightful understanding of the complexities of human relationships in personal, social, and vocational settings. Discuss reading academic course support with your Counselor.

INTRODUCTION TO ETHICS: THEORY AND APP...provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and/or professional standards of behavior, and apply a systematic decision-making process to these situations. Discuss reading academic course support with your Counselor.

INTRODUCTION TO PYTHON...write, test, and debug Python programs using structured logic, control flow, functions, and standard libraries. Students will build basic applications while learning Python syntax, modular coding practices, and core programming structures.

INTRODUCTORY STATISTICS...prepares students to 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. Discuss math and reading academic course support with your Counselor.

NATURAL LANGUAGE PROCESSING WITH PYTHON...focuses on Natural Language Processing (NLP) techniques for text-based AI applications. Students will build on their Python knowledge to process and analyze text data, train machine learning models, and develop NLP-powered applications. PREREQUISITE: 10156101 Data Concepts or 10152232 Intro to Database Design & Dev

NETWORKING 1...is a lecture/hands-on course designed to introduce students to network fundamentals. Topics covered include: OSI Reference Model; LAN and WAN topologies; cabling systems; access methods; protocols; Internet working devices (e.g. hubs, bridges, routers, switches, etc.); and basic network design.

OPERATIONAL TECH AND INDUSTRIAL AUTOMATION...explores industrial robots and vision systems as well as the methods to extract data from these systems. Students will study programming, data organization and communication capabilities of popular Programmable Logic Controller (PLC) platforms from Rockwell Automation and Siemens. PREREQUISITE: 10156101 Data Concepts

ORAL/INTERPERSONAL COMM...provides students with the skills to develop speaking, verbal and nonverbal communication, and listening skills through individual speeches, group activities, and other projects. Discuss reading academic course support with your Counselor.

PROGRAMMING INTRODUCTION...develop problem-solving and logical thinking skills by learning to design, plan, and implement basic computer programs. Students will construct flowcharts, write pseudocode, and code solutions using fundamental concepts such as variables, data types, conditionals, loops, arrays, and functions.

PROJECT MANAGEMENT...equips learners with essential tools, techniques, and strategies to plan, execute, and manage projects across industries. Through hands-on activities and real-world examples, students explore topics like work breakdown structures, project scheduling, resource allocation, risk management, and progress monitoring. The course emphasizes critical thinking, communication, inclusivity, and professionalism, ensuring students are prepared for dynamic workplace environments.

PYTHON FOR DATA SCIENCE AND ANALYTICS...analyze, visualize, and interpret real-world datasets using Python libraries such as pandas, NumPy, and Matplotlib. Students will apply data science techniques to uncover insights and present findings in visual and narrative formats. PREREQUISITE: 10152235 Introduction to Python

SQL PROGRAMMING AND ADVANCED QUERIES...focuses on learning various SQL topics for server management, including temporary tables, triggers, advanced stored procedures, and user-defined functions. Develops skills in optimization, indexing, and other performance-tuning tools and techniques. Explores advanced database design, implement windowing functions, perform data integration using triggers and merge statements, and create parse JSON and XML. PREREQUISITE: 10156101 Data Concepts