

Modern Data & AI Essentials

Applied Technology Academy

A one-day, high-level introduction to the concepts, technologies, processes and roles that make up the data-driven enterprise. Participants follow the data lifecycle from collection and preparation through analytics, visualization, machine learning and AI, then look at modern data architectures and how generative AI is changing the way organizations derive value from data. No programming or hands-on technical experience is required - the goal is genuine fluency in the conversation.

LEVEL	DURATION	DELIVERY
Introductory	1 Day	Instructor-led

Course Overview

- One day - approximately 6.5 hours of instruction, demonstrations and discussion.
- Introductory: no programming or advanced technical experience required.
- Follows the data lifecycle end to end, from collection through analytics, machine learning and AI.
- Covers modern platforms and the roles involved, so participants know who does what and why.

Course Outline

- 1. The Modern Data-Driven Enterprise
 - Data science, analytics, business intelligence, machine learning and AI.
 - How the data landscape has evolved, from reporting to predictive and AI-driven decision-making.
 - Common business use cases; demonstration and discussion.
- 2. Data Collection, Preparation and Quality
 - Structured, semi-structured and unstructured data; collection and integration.
 - Cleaning, preparation and quality; preparing data for analytics and AI.
 - Data governance, privacy and responsible data use.
- 3. Analytics and Data Visualization
 - Descriptive, diagnostic, predictive and prescriptive analytics.
 - Basic statistical concepts used in analytics.
 - Principles of effective visualization and the categories of BI tooling.
- 4. Machine Learning and AI Fundamentals
 - What machine learning is and is not; supervised and unsupervised learning.
 - Classification, regression, clustering and forecasting; training data, models and model limits.
 - Traditional AI versus generative AI; large language models and Retrieval-Augmented Generation.
 - Privacy, security, bias, hallucinations and responsible AI.
- 5. Modern Data Platforms, Tools and Roles

- Traditional databases and modern data environments; warehouses, lakes and lakehouses.
- Cloud-based, distributed and scalable data processing.
- Roles including Data Analyst, Data Engineer, Analytics Engineer, Data Scientist, AI/ML Engineer, Data Architect and Data Governance, and how they work together.
- 6. Putting Data and AI to Work
- Starting with the business problem, then identifying and preparing the right data.
- Building cross-functional teams and moving from proof of concept to production.
- Measuring business value; responsible AI and governance.
- Why data and AI initiatives commonly fail.

Prerequisites

- No programming or advanced technical experience is required.
- A basic understanding of how organizations use data is expected.
- General familiarity with business or IT processes is helpful.

Who Should Attend

- Business and data analysts.
- Project and program managers.
- IT professionals.
- Technical and business leaders, product managers and functional leaders.
- Professionals supporting data, analytics, AI or digital transformation initiatives.
- Individuals considering further training in data science, analytics or AI.

What You'll Learn

By the end of this course, participants will be able to:

- explain how data science, analytics, business intelligence, machine learning and AI fit together
- describe the major stages of the data lifecycle
- recognize why data quality, preparation, governance, privacy and responsible use matter
- explain how analytics and visualization turn data into business insight
- explain fundamental machine learning and generative AI concepts, including LLMs and RAG
- describe modern data platforms and architecture concepts
- recognize common data and AI roles and how they work together
- identify the opportunities and the common failure modes in data and AI initiatives

Next Steps

- Participants leave able to take part in decisions involving analytics, modern data environments,
- machine learning, generative AI and enterprise data strategy - and better placed to choose
- deeper training in data science, analytics or AI.

Ready to enroll? Call 800.674.3550 or email Info@AppliedTechAc.com — private team cohorts, GSA MAS purchasing, military credentialing funding, VA GI Bill and VR&E and student financing available.