

Data Science

A Data Science major prepares students to collect, analyze, and interpret complex data to solve real-world business, scientific, and societal problems. Students develop strong skills in statistics, programming, machine learning, data visualization, and predictive analytics while learning to communicate insights that support data-driven decision making. Graduates are equipped to work across a wide range of industries where organizations rely on data to improve operations, identify trends, and drive innovation.

Typical Industry Sectors:

- ❖ Technology and Software Development
- ❖ Healthcare and Life Sciences
- ❖ Finance and Banking
- ❖ Manufacturing and Supply Chain
- ❖ Government and Public Sector

Entry-Level Job Title Examples:

- ❖ Data Analyst
- ❖ Junior Data Scientist
- ❖ Business Intelligence Analyst
- ❖ Machine Learning Analyst
- ❖ Data Engineer (Entry Level)
- ❖ Analytics Consultant
- ❖ Statistical Analyst
- ❖ Research Data Analyst
- ❖ Predictive Analytics Analyst
- ❖ Operations Analyst

Skills Needed (Hard):

- ❖ Programming (Python, R, SQL)
- ❖ Statistical Analysis and Modeling
- ❖ Machine Learning Fundamentals
- ❖ Data Visualization (Tableau, Power BI, or similar tools)
- ❖ Database Management and Data Wrangling

Skills Needed (Soft):

- ❖ Critical Thinking & Problem-Solving
- ❖ Analytical Reasoning
- ❖ Communication and Data Storytelling
- ❖ Attention to Detail
- ❖ Teamwork and Collaboration

Further Education/Training:

A bachelor's degree in Data Science provides excellent preparation for careers in analytics and technology, but additional certifications and specialized training can enhance career opportunities. Certifications in cloud computing (AWS, Microsoft Azure, or Google Cloud), Tableau, Microsoft Power BI, or data engineering can strengthen technical skills and marketability. Students interested in advanced machine learning, artificial intelligence, research, or leadership roles may benefit from pursuing graduate degrees in Data Science, Computer Science, Statistics, Business Analytics, or Artificial Intelligence.

Student and National Organizations to Join:

- ❖ **Association for Computing Machinery (ACM)** – The world's largest computing society, offering networking, professional development, conferences, and technical resources.
- ❖ **Data Science Association (DSA)** – Provides educational resources, networking opportunities, and industry updates for aspiring data scientists.
- ❖ **Institute of Electrical and Electronics Engineers (IEEE) Computer Society** – Offers resources, certifications, conferences, and professional connections in computing and data technologies.
- ❖ **Association for Information Systems (AIS)** – Supports students interested in data analytics, information systems, and business technology careers.
- ❖ **WKU Data Science or Computing Student Organizations** (*if available*) – Student organizations that provide networking opportunities, technical workshops, competitions, guest speakers, and career development.