

Shape the future with data-driven decisions.

BACHELOR OF SCIENCE IN DATA SCIENCE & ANALYTICS

FULLY ONLINE



United States
International
University-Africa

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PROGRAM DESCRIPTION

The Bachelor of Science in Data Science and Analytics (online) program prepares professionals with essential knowledge in statistics, mathematics, computer science, and data science. This foundation enables them to analyze, interpret, and derive insights from complex datasets, aiding organizations in data-driven decision-making. As industries generate vast data, the program addresses challenges through statistical and computational methods, training graduates to design and build data-driven systems for effective decision support.

PROGRAM LEARNING OUTCOMES

Upon successful completion of the program the student will be able to:

- Solve analytical problems based on sound data science principles.
- Develop analytical models and demonstrate their power and limitations.
- Apply programming and computational tools to analyze and visualize data sets.
- Use machine algorithms to mine data.
- Apply data science techniques to organization's data management.

ADMISSION REQUIREMENTS

Kenya Certificate of Secondary Education (KCSE) or its equivalent with a minimum aggregate of C+ (Plus) and a minimum grade of C+ in Mathematics.

CAREER OPPORTUNITIES

- Data Scientists
- Data Architects
- Data Engineer
- Machine Learning Engineer
- Business Intelligence (BI) Developer
- Data Analysts
- Machine Learning Scientist
- Statisticians
- Web & Social Media Analyst
- Data mining Specialist

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| DEGREE REQUIREMENTS | 150 UNITS |
| GENERAL EDUCATION | 39 UNITS |
| SIGNATURE COURSES | 15 UNITS |

STRATEGIES FOR UNIVERSITY SUCCESS 3 UNITS

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| SUS 1010 | Strategies for University Success | |
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RESEARCH METHODS 3 UNITS

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| GRM 2000 | Introduction to Research Methods | |
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COMMUNITY SERVICE OR COMMUNITY PROJECT 3 UNITS

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| CMS 3700 | Community Service | |
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THE SENIOR EXPERIENCE 3 UNITS

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| SEN 4800 | Integrated Senior Seminar | |
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FUNDAMENTALS OF INFORMATION LITERACY 3 UNITS

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| FIL 1010 | Fundamentals of Information Literacy | |
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LANGUAGE STUDIES 12 UNITS

ENGLISH LANGUAGE 6 UNITS

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| ENG 1106 | Composition I (WI) | |
| ENG 2206 | Composition II (WI) | |

FOREIGN LANGUAGE 6 UNITS

Students must have credit for a foreign language or must take a two-course foreign language sequence of one language.
 USIU-Africa offers courses in Arabic (ARB1000), French (FRN1000), Japanese (JPN1000), Spanish (SPN1000), Swahili (SWA1000), Chinese (CHI1000) and Kenya Sign Language (KSL1000).

DISCIPLINARY GENERAL EDUCATION ELECTIVES 6 UNITS

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| IST 1020 | Introduction to Information Systems | |
| MTH 1109 | College Algebra | |

SCHOOL-BASED GENERAL EDUCATION ELECTIVES 6 UNITS

Students are required to pick 2 electives from the other Schools. The electives are as follows:

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| BUS 1010 | Introduction to Business Organizations | 3 Units |
| SOC 1101 | Introduction to Sociology | 3 Units |

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| ENV 2001 | Sustainable Resource Management | 3 Units |
| PHL 3310 | Ethics and Value Theory | 3 Units |
| MGT 3010 | Principles of Management Practice | 3 Units |
| NSC 3304 | Biology and Environment | 3 Units |

CORE COURSES 111 UNITS

LOWER LEVEL CORE COURSES 57 UNITS

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| DSA 1060 | Introduction to Data Science | 3 Units |
| DSA 1080 | Programming for Data Science | 3 Units |
| MTH 1040 | Linear Algebra | 3 Units |
| STA 1020 | Probability and Statistics I | 3 Units |
| MTH 1110 | Calculus | 3 Units |
| APT 1050 | Database Systems | 3 Units |
| MTH 2215 | Discrete Mathematics | 3 Units |
| MTH 1050 | Differential Equations | 3 Units |
| MTH 2030 | Numerical Analysis and its Applications | 3 Units |
| STA 1040 | Statistical Computing | 3 Units |
| STA 2010 | Probability and Statistics II | 3 Units |
| MTH 2020 | Optimization Techniques | 3 Units |
| MTH 1060 | Analytical and Computational Techniques | 3 Units |
| APT 2060 | Data Structures and Algorithms | 3 Units |
| STA 2030 | Statistical Inference | 3 Units |
| STA 2060 | Stochastic Processes | 3 Units |
| DSA 2040 | Data Warehousing and Mining | 3 Units |
| DSA 2050 | Data Science Methodology | 3 Units |
| DSA 2020 | Artificial Intelligence | 3 Units |

UPPER LEVEL CORE COURSES 54 UNITS

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| STA 3010 | Statistical Modeling | 3 Units |
| STA 3020 | Multivariate Statistical Analysis | 3 Units |
| STA 3040 | Mathematical Modeling and Simulation | 3 Units |
| MTH 3010 | Mathematical Finance | 3 Units |
| DSA 3020 | Principles of Machine Learning | 3 Units |
| STA 3050 | Time Series Analysis and Forecasting | 3 Units |
| DSA 3050 | Business Intelligence and Data Visualization | 3 Units |
| DSA 3030 | Big Data Architecture | 3 Units |
| APT 3040 | Object Oriented Analysis, Design & Programming | 3 Units |
| STA 4030 | Bayesian Inference and Decision Theory | 3 Units |
| DSA 4010 | Big Data Analytics | 3 Units |
| DSA 3900 | Data Science Project Proposal | 3 Units |
| DSA 4020 | Natural Language Processing | 3 Units |
| DSA 4030 | Big Data Security and Ethics | 3 Units |
| DSA 4050 | Deep Learning and Computer Vision | 3 Units |
| DSA 4060 | Recommender Systems | 3 Units |
| DSA 4900 | Data Science Project Implementation | 3 Units |
| DSA 4910 | Data Science Internship | 3 Units |

WHY OUR ONLINE PROGRAMS

- ✔ Instructor-led
- ✔ Flexible
- ✔ Instructor presence
- ✔ Accessible & inclusive
- ✔ Global interactive learning and network
- ✔ Dual accreditation in Kenya & USA

FOR MORE INFORMATION:

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