

DATA ANALYTICS MAJOR, BACHELOR OF SCIENCE (BS)

The development of large-scale data collection in recent years has resulted in a growing gap in the work force as employers struggle to find those with the broad skillset needed to navigate in this environment while developing the narrative of meaning that underlies the data. The Bachelor of Science in Data Analytics concentrates at the undergraduate level on equipping graduates with the hybridization of programming, information systems, applied statistics, management science, data analysis and decision support skills needed by employers.

Majoring or minoring in an additional discipline is suggested as data science and analytics is used in many fields, such as science, education, medicine, government and business.

Prerequisite Courses

ENGL 201	COLLEGE COMPOSITION: ANALYSIS, RESEARCH AND DOCUMENTATION	5
MATH/HONS 161	CALCULUS I (recommended)	5
or MATH 142	PRECALCULUS MATH II	
MISC 311	INFORMATION TECHNOLOGY IN BUSINESS	4-5
or CSCD 210	PROGRAMMING PRINCIPLES I	
or CSCD 211	PROGRAMMING PRINCIPLES II	

Required Courses

DSCI 245	BUSINESS STATISTICS 1	4
DSCI 346	BUSINESS STATISTICS 2	4
DSCI 352	MIXED RESEARCH METHODS, SECURITY AND ETHICS FOR ANALYTICS	4
DSCI 353	DATA MANAGEMENT, CLEANING AND IMPUTATION	4
DSCI 445	OPTIMIZATION VIA MANAGEMENT SCIENCE	4
DSCI 449	MULTIVARIATE DATA ANALYSIS	4
DSCI 450	DATA VISUALIZATION	4
MISC 373	BUSINESS DATABASE APPLICATIONS	4
MISC 374	SPREADSHEET MODELING FOR BUSINESS APPLICATIONS	4
MISC 485	ADVANCED DATABASE APPLICATIONS DEVELOPMENT	4

Electives—choose at least three from the following or see the department advisor for a list of approved electives

CSCD 300	DATA STRUCTURES	12
CSCD 320	ALGORITHMS	
CSCD 423	RANDOMIZED ALGORITHMS AND PROBABILISTIC ANALYSIS	
DSCI 446	BUSINESS FORECASTING	
DSCI 447	DESIGN OF EXPERIMENTS	
DSCI 448	BUSINESS SIMULATION	
MISC 371	BUSINESS APPLICATIONS PROGRAM DESIGN	
MISC 372	DATA COMMUNICATION AND NETWORK FUNDAMENTALS	
MISC 486	INFORMATION SECURITY MANAGEMENT	
MISC 487	DIGITAL ENTREPRENEURSHIP	
MISC 498	SEMINAR	
or DSCI 498	SEMINAR	

Required Senior Cohort Sequence

Taken sequentially these hybrid classes are composed of online material from Microsoft Learn, Microsoft role-based certifications, community projects, supplemental material and weekly discussion sessions with the course instructor.

DSCI 481	ML-DATA SCIENCE FUNDAMENTALS	4
DSCI 483	ML-APPLIED DATA SCIENCE	4

Required Senior Capstone

DSCI 490	ANALYTICS SENIOR CAPSTONE	4
Total Credits		78-79

University Competencies and Proficiencies

English (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#newitemtext>)
 Quantitative and Symbolic Reasoning (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#mathcompproficienciestext>)
 Placement and Clearance Exams (<http://catalog.ewu.edu/archives/2021-2022/placement/>)
 Prior Learning/Sources of Credit AP, CLEP, IB (<http://catalog.ewu.edu/archives/2021-2022/prior-learning/>)

General Education Requirements (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#generaleducationrequirements>) (GER)

- Minimum Credits—180 cumulative credit hours
 - 60 upper-division credits (300 level or above)
 - 45 credits in residence (attendance) at Eastern, with at least 15 upper-division credits in major in residence at Eastern
- Minimum Cumulative GPA ≥ 2.0

Breadth Area Core Requirements (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#generaleducationcorerequirements>) (BACR)

Humanities and Arts (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#humanitiesandfineartsgcrtxt>)
 Natural Sciences (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#naturalsciencesgcrtxt>)
 Social Sciences (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#socialsciencesgcrtxt>)

University Graduation Requirements (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#universitygraduationrequirements>) (UGR)

Diversity Course List (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#cultureandgenderdiversityintheuslisttext>)
 Foreign Language (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#foreignlanguageugrtxt>) (for Bachelor of Arts)
 Global Studies Course List (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#internationalstudiesrequirementtext>)
 Minor or Certificate (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#majorminororcertificateugrtxt>)
 Senior Capstone Course List (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#capstonecourselisttext>)

All admitted students must officially Declare a Major (<https://inside.ewu.edu/center-for-academic-advising-and-retention/academic-planning-tools/declare-your-major/>) by the time they reach 90 credits (junior standing).

Application for Graduation (use EagleNET (<https://inside.ewu.edu/eaglenet/>)) must be made at least two terms in advance of the term you expect to graduate (undergraduate and post-baccalaureate).

Use the Catalog Archives (<https://catalog.ewu.edu/archives/>) to determine two important catalog years (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#activecatalogruletext>).

SOAR (<https://soar.ewu.edu/selfservice/general/home.html>) calculates based on these two catalog years.

1. The catalog *in effect at the student's first term* of current matriculation is used to determine **BACR** (Breadth Area Credit Requirements) **and UGR** (Undergraduate Graduation Requirements).
2. The catalog *in effect at the time the student declares a major or minor* is used to determine the program requirements.

Students who successfully earn a BS in Data Analytics from EWU should be able to do the following:

- analyze a variety of data types, including both structured data and unstructured data;
- build mathematical models to assist decision-making processes;
- discuss ethical issues related to data analytics;
- interpret analytic information visually to relevant audiences;
- make critical decisions to engineer data management.