DATA ANALYTICS MINOR

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Data Analytics Minor Website (https://www.jmu.edu/academics/undergraduate/minors/data-analytics.shtml)

Program Description

The minor in data analytics is designed for students majoring in a STEM field who want to gain additional technical competencies in statistical data analytic methods as it relates to their field of study. This minor will provide students with analytical and technical skills in the ethical use of data in research environments; application of statistical and probabilistic thinking to data analysis; data visualization and data management; and application of machine learning techniques to their own field of study. Although the minor is primarily intended for students majoring in one of the degree programs offered by the College of Science and Mathematics (https://catalog.jmu.edu/colleges/college-science-mathematics/), any student that meets program requirements may take the minor.

Minor Requirements

The minor in data analytics requires 18 credit hours. No more than six credits from majors and other minors may be used to double-count toward this minor.

Code	Title	Credits
Required Courses		
DATA 200	Introduction to Data	3
MATH 229	Introduction to Applied Statistics Using R [C3QR]	3
MATH 268	Data Analysis and Visualization	3
DATA/MATH 358	Introduction to Machine Learning	3
Subtotal		12
Restricted Electives		
Choose at least six credit hours from one or more of the following foci:		6
Mathematics/Statistics Focus:		
MATH 248	Computers and Numerical Algorithms	
MATH 300	Linear Algebra	
MATH 309	SAS Programming and Data Management	
MATH 322	Applied Linear Regression	
MATH 327	Categorical Data Analysis	
MATH 328	Time Series Analysis	
MATH 368	Statistical Computing	
MATH 421	Applied Multivariate Statistical Analysis	
MATH 426	Probability and Mathematical Statistics I	
Biological Sciences Focus:		
BIO 204	Viral Genome and Bioinformatics	
BIO/MATH 342	Mathematical Models in Biology	
BIO 346	Laboratory in Bacterial Pathogenomics	
BIO 454/ MATH 354	Introduction to Biometrics	
BIO 457	Biological Applications of Geographic Information Systems	
BIO 481	Genomics	
BIO 483	Bioinformatics	
Earth Sciences Focus:		
GEOL 360	GIS for the Geoscientist	
GEOL 390	Laboratory Techniques in Geology (2,2)	
GEOL 406	Paleoclimatology and Paleoceanography	
GEOL 410	Engineering Geology (2, 2)	
GEOL 440	Geophysics (3, 2)	
GEOL 489	Quantitative Methods in Geology	
Physical Sciences Focus:		
PHYS 339	Introductory Nuclear Science	
PHYS 344	Advanced Physics Laboratory I	
PHYS 345	Advanced Physics Laboratory II	
PHYS 346	Advanced Physics Laboratory III	
PHYS 386	Robots: Structure and Theory	
PHYS 390	Computer Applications in Physics	
CHEM 351	Analytical Chemistry	
CHEM 352 & 352L	Instrumental Analysis and Instrumental Analysis Laboratory	
Subtotal		6
Total Credits		**18**