

# DATA ANALYTICS, MASTER OF SCIENCE (MS)

The demand for data analysts is increasing at an annual growth rate of nearly 30%, and this trend is expected to continue for several years in the future. Data collection has increased significantly in recent years in almost all industries, and the need for data analysts with strong skills to derive actionable decisions from the massive amounts of data is currently unmet. Along with continued demand increase, data analysts' salaries are highly competitive.

The Master of Science in data analytics will provide the training and skills necessary to perform statistical analysis in any field. Types of data analysis include descriptive, diagnostic, predictive, and prescriptive, to answer the questions, "What is currently happening?", "Why did this happen?", "What do we expect to happen in the future?", and "What should we do now?", respectively. These questions can be answered through key program components of statistical modeling and visualization using software such as SAS, R, SQL, Python, Excel, and others. In addition to analytical and technical skills, highly sought soft skills are taught, such as problem solving, collaboration, communication, and presentation.

The MSDA program faculty are highly accomplished in the field and will provide 100% support from the start of the program to beyond graduation. The program is completely online with no set class times. Class recordings, resources, and assignments will be provided asynchronously with weekly due dates to help stay on track. The 33-credits of graduate work can be completed in 10 months full-time or 2 years part-time.

SRU partners with **SAS Institute, Inc.** to provide graduates with a Statistical Analysis System (SAS) Academic Specialization in Data Analytics. **SAS Institute, Inc.** is one of the most widely used software platforms in the world for performing data analytics and statistical analysis.

## Program Learning Outcomes

Upon graduation, MSDA students should be able to :

- Apply quantitative modeling techniques, such as probability, statistics, optimization, and simulation, to the solution of business and health care problems.
- Use innovative methods and technologies to successfully extract, scrub, integrate, format, visualize, and analyze big data.
- Know how to query and analyze complex databases to provide real world, real-time solutions.
- Use predictive analytics and forecasting to improve decision making in business and health care.
- Effectively communicate analysis results to assist in strategic decision making.
- Analyze and optimize the delivery, quality, and costs of health care from a data-driven perspective.
- Analyze market data to provide a competitive edge for business and more agile management practices.

## Related Links

Data Analytics, MS Program Page (<https://www.sru.edu/academics/graduate-programs/data-analytics-master-of-science/>)

Data Analytics Fact Sheet (<https://www.sru.edu/documents/programs/factsheets/graduate/fs-data.pdf>)

Professional Licensure/Certification Page (<https://www.sru.edu/students/student-consumer-information/professional-licensures/>)

## Curriculum Guide

Code	Title	Hours
STAT 603	Statistical Methods	3
CPSC 605	Data Mining and Data Analysis	3
STAT 630	Regression Methods	3
MATH 611	Optimization Models	3
STAT 656	Statistical Computing	3
MATH 678	Data Analytics Capstone I	3
CPSC 685	Big Data Analytics	3
MATH 668	Model Analysis	3
STAT 672	Forecasting and Time Series	3
STAT 660	Advanced Statistical Methods	3
MATH 688	Data Analytics Capstone II	3
<b>Total Hours</b>		<b>33</b>

## Important Curriculum Guide Notes

This Curriculum Guide is provided to help SRU students and prospective students better understand their intended major curriculum. Enrolled SRU students should note that the My Rock Audit may place already-earned and/or in progress courses in different, yet valid, curriculum categories. Enrolled SRU students should use the My Rock Audit Report and materials and information provided by their faculty advisers to ensure accurate progress towards degree completion. *The information on this guide is current as of the date listed. Students are responsible for curriculum requirements at the time of enrollment at the University.*

PASSHE - Pennsylvania State System of Higher Education Institutions

Major Code: 9MDA

## Recommended Course Sequence

### Full-Time Course Sequence

Course	Title	Hours
<b>First Year</b>		
<b>Fall</b>		
STAT 603	Statistical Methods	3
STAT 630	Regression Methods	3
CPSC 605	Data Mining and Data Analysis	3
MATH 611	Optimization Models	3
<b>Hours</b>		<b>12</b>
<b>Winter</b>		
STAT 656	Statistical Computing	3
MATH 678	Data Analytics Capstone I	3
<b>Hours</b>		<b>6</b>
<b>Spring</b>		
STAT 660	Advanced Statistical Methods	3

STAT 672	Forecasting and Time Series	3
CPSC 685	Big Data Analytics	3
MATH 668	Model Analysis	3
	<b>Hours</b>	<b>12</b>
<b>Summer</b>		
MATH 688	Data Analytics Capstone II	3
	<b>Hours</b>	<b>3</b>
	<b>Total Hours**</b>	<b>33</b>

*\*\* This document is meant to serve as a guide. Please consult with your academic adviser and refer to your curriculum guide prior to registering for courses. This plan should be reviewed, and verified, by you and your academic adviser at least once each academic year.*

## Part-Time Course Sequence

Course	Title	Hours
<b>First Year</b>		
<b>Fall</b>		
STAT 603	Statistical Methods	3
STAT 630	Regression Methods	3
	<b>Hours</b>	<b>6</b>
<b>Winter</b>		
STAT 656	Statistical Computing	3
	<b>Hours</b>	<b>3</b>
<b>Spring</b>		
STAT 660	Advanced Statistical Methods	3
STAT 672	Forecasting and Time Series	3
	<b>Hours</b>	<b>6</b>
<b>Second Year</b>		
<b>Fall</b>		
CPSC 605	Data Mining and Data Analysis	3
MATH 611	Optimization Models	3
	<b>Hours</b>	<b>6</b>
<b>Winter</b>		
MATH 678	Data Analytics Capstone I	3
	<b>Hours</b>	<b>3</b>
<b>Spring</b>		
CPSC 685	Big Data Analytics	3
MATH 668	Model Analysis	3
	<b>Hours</b>	<b>6</b>
<b>Summer</b>		
MATH 688	Data Analytics Capstone II	3
	<b>Hours</b>	<b>3</b>
	<b>Total Hours**</b>	<b>33</b>

*\*\* This document is meant to serve as a guide. Please consult with your academic adviser and refer to your curriculum guide prior to registering for courses. This plan should be reviewed, and verified, by you and your academic adviser at least once each academic year.*