

Analytics

Degree Type

Associate in Science

The Analytics program is designed to meet many of the first- and second-year Baccalaureate requirements including the computer programming, mathematics, and database skills essential to complete a 4-year degree. The transfer program has been developed in consultation with the Analytics Department at the University of New Hampshire, Manchester, in order to align program requirements for transfer purposes. Upon completion, students will be in a strong position to complete the remainder of the Bachelor of Science degree with two years of additional study. Other degrees students may wish to pursue include a B.S. in Math/Computer Science or B.S. Statistics.

The Associate in Science degree in Analytics is more than just a transfer degree. Students who complete the degree will be in a position to be employed as a junior data scientist. The 2 years of bachelor's degree completion primarily focus on the field in which (ultimately) a student might wish to concentrate his/her expertise. The associate degree alone provides an individual with all of the data analytical skills needed to begin a career. Job experience and domain expertise will allow the person to gain more ability to advance his/her career beyond simply junior and entry-level status.

This degree emulates the first two years of four-year college and university degrees in (data) analytics and prepares students to be successful in one of the disciplines that relies on data science to answer questions, drive business decisions, and conduct research.

Program Outcomes

Select a topic of research for which sufficient data exist or data can be simulated in order to answer a question involving statistical analysis, and create a reproducible research report that incorporates and illustrates competent knowledge with the following:

- Use advanced R packages and constructs and create R functions
- Develop reproducible analysis report using Markdown and generated in 3 formats: html, Word doc and pdf doc
- Apply the Cross-Industry Standard Process for Data Mining (CRISP-DM) methodology to the analysis project
- Perform linear regression and multiple linear regression on real-world data sets that are applicable to the project
- Apply statistical methods such as clustering, classification, time series analysis and/or factor analysis as applicable to the project selected and communicate results of these analyses
- Develop advanced visualizations in support of communicating results of statistical analysis as part of the final report in an aesthetically appropriate manner

First Year

Fall Semester

Item #	Title	Theory Hours	Lab Hours	Credits
FYE101G	First Year Seminar	1	0	1
CIS112G	Introduction to Object Oriented Programming	2	2	3
MATH210G	Pre-Calculus	4	0	4
	ENGL110G/111G	4	0	4-5
	Lab Science Elective (Analytics)	3	3	4
	Sub-Total Credits	14	5-7	16-17

FYE101G: Any one FYE course fulfills this requirement.

Spring Semester

Item #	Title	Theory Hours	Lab Hours	Credits
CIS148G	Introduction to Java Programming	2	2	3
BUS110G	Introduction to Business	3	0	3
	Foreign Language/Humanities/Fine Arts Elective - ARTS125G Preferred	3	0	3
MATH230G	Calculus I	4	0	4
MATH235G	Statistics for Engineers and Scientists	4	0	4
	Sub-Total Credits	16	2	17

Summer Semester Prior to Year One (if needed)

Item #	Title	Theory Hours	Lab Hours	Credits
	MATH150/152G or MATH170G	4	0	4
	Sub-Total Credits	4	0	4

Second Year

Fall Semester

Item #	Title	Theory Hours	Lab Hours	Credits
DATA210G	Elements of Data Science	3	0	3
CIS113G	Database Design and Management	2	2	3
MATH245G	Introduction to Linear Algebra	4	0	4
ENGL215G	Writing Technical Documents	3	0	3
SOCI20G	Society and Technological Change	3	0	3
	Sub-Total Credits	15	2	16

Spring Semester

Item #	Title	Theory Hours	Lab Hours	Credits
DATA220G	Data Analysis with R	3	0	3
CIS210G	Data Structures and Elementary Algorithms	3	2	4
	MATH250G or MATH235G	4	0	4
CIS177G	Introduction to Python	2	2	3
Sub-Total Credits		12	4	14

Students who started with MATH150G/152G will take MATH235G in 2nd year instead of MATH250G Calculus II;
Total MATH credits: 20

Summer Semester

Item #	Title	Theory Hours	Lab Hours	Credits
DATA225G	Analytics Capstone	2	0	2
Sub-Total Credits		2	0	2
Total Credits				65-66