DATA SCIENCE (AS)

Award: Associate of Science Degree
No. of credits required: 60
For more information: *Contact Professor Chris Jones,* cjones@harford.edu*;* stem@harford.edu*; or Admissions, 443-412-2109.*

Program Description

This program provides students with a background in computer science, mathematics, and information systems necessary for a further study of data science at the Bachelor's degree level. Data Scientists utilize computer programming and scripting, database management, data analysis, statistical interpretation, data preparation and cleaning, and quantitative analysis to solve problems as a business or data mining analyst, data or machine learning engineer, and managers in the field of data science.

Program Goals

1. Perform problem solving and computational tasks in the discipline of data science.
2. Create computer code and scripts to collect, prepare, and organize data.
3. Apply and critically evaluate data analysis techniques.
4. Interpret and communicate findings in multiple forms.
5. Assess the ethical implications to societies of data-based research and analysis.

Transfer Information

Students who plan to transfer to a four-year college or university should review the requirements of that institution. If they are significantly different than the requirements of the AS in Data Science, the student should consult with an academic advisor.

Employment Information

Data Science is an interdisciplinary field with increasing employment opportunities in areas such as business, industry, government and marketing. As of January 2025, the Bureau of Labor Statistics projects a 36% growth in employment between 2023 and 2033, with an estimated 73,100 new jobs. Students seeking careers in data science or wish to pursue further study in data science are required to possess a sound background in programming concepts, data analysis and visualization skills, and mathematics. Additionally, there is an immediate need for skilled laborers with the skills offered through this program of study. Students may find employment after completing this program of study or may elect to transfer to pursue a bachelor's or master's degree in data science.

Degree Requirements

Recommended Course Sequence

First Semester		Credits
ENG 101	English Composition (GE)	3
DSCI 101	Introduction to Data Science	3
CIS 229	Python Programming Language	4
MATH 203	Calculus I (GM)	4
Behavioral/Social Science Elective (GB) (https://catalog.harford.edu/general-education/#behavioral-social-science)		3
	Credits	**17**
Second Semester		
DSCI 102	Introductory Statistics with Programming Applications (GM)	4
Program Elective [1]		6
Arts/Humanities Elective (GAH)		3
Physical Education Elective		1
	Credits	**14**
Third Semester		
CSI 131	Computer Science I	4
ECON 101 or ECON 102	Macroeconomics (GB) or Microeconomics (GB)	3
Biological/Physical Lab Science Elective (GL) (https://catalog.harford.edu/general-education/#biological-physical-laboratory-science)		4
DSCI 103	Database Management and Database Systems	3
	Credits	**14**
Fourth Semester		
DSCI 201	Data Visualization	3
PHIL 205 or PHIL 221	Ethics (GAH) or Business Ethics (GAH)	3
Program Elective [1]		3
General Elective [2]		3
Biological/Physical Science Elective (GS) (https://catalog.harford.edu/general-education/#science)		3
	Credits	**15**
	Total Credits	**60**

[1] Students may choose a 4-credit program elective.
[2] Students may choose any transferrable course to satisfy the general elective course requirement.

Program Electives (choose to complete 60 credits)

Code	Title	Credits
CSI 132	Computer Science II	4
ECON 101	Macroeconomics (GB)	3
ECON 102	Microeconomics (GB)	3
MATH 204	Calculus II (GM)	4
MATH 206	Calculus III	4
MATH 210	Discrete Structures	3
MATH 217	Linear Algebra	4

General Education Degree Requirements

Note: The following codes identify courses which satisfy the General Education Degree Requirements:

Behavioral/Social Science (GB)
English Composition (GE)
Arts/Humanities (GAH)
Interdisciplinary and Emerging Issues (GI)
Biological/Physical Laboratory Science (GL)

Mathematics (GM)
Biological/Physical Science (GS)