

# DATA SCIENCE (AS)

**Award:** Associate of Science Degree

**No. of credits required:** 60

**For more information:** Contact Professor Chris

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## 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 check the requirements of that institution. If they are significantly different from the courses listed, the student should consult with an academic advisor.

## Employment Information

Data Science is a rapidly increasing field in the areas of business, industry, government, and marketing. As of June 2020, Glassdoor.com named Data Science one of the most promising jobs of our time, with an approximate 28% rise in the employment field through the year 2026. Students that wish to take advantage of this emerging field require the background to study more advanced programming concepts, data organization skills, and mathematics typically required by universities. Additionally, there is an immediate need for skilled laborers with the skills offered through this proposed program. Hence, prospective students may find employment after completing this proposed program of study or elect to transfer to obtain a Bachelor's or Master's degree in Data Science.

## Diversity Requirement

To satisfy the diversity requirement: Associate degree students must complete one 3-credit diversity course (D). It is recommended that students select one of the 3-credit (GB), (GAH), (GI) course electives from those that also appear on the approved list of diversity course graduation requirements.

## 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) ( <a href="https://catalog.harford.edu/general-education/#behavioral-social-science">https://catalog.harford.edu/general-education/#behavioral-social-science</a> )		3
<b>Credits</b>		<b>17</b>
Second Semester		Credits
DSCI 102	Introductory Statistics with Programming Applications (GM)	4
Program Elective <sup>1</sup>		6
Arts/Humanities Elective (GAH)		3
Physical Education Elective		1
<b>Credits</b>		<b>14</b>
Third Semester		Credits
CSI 131	Computer Science I	4
ECON 101	Macroeconomics (GB)	3
or ECON 102	or Microeconomics (GB)	
Biological/Physical Lab Science Elective (GL) ( <a href="https://catalog.harford.edu/general-education/#biological-physical-laboratory-science">https://catalog.harford.edu/general-education/#biological-physical-laboratory-science</a> )		4
DSCI 103	Database Management and Database Systems	3
<b>Credits</b>		<b>14</b>
Fourth Semester		Credits
DSCI 201	Data Visualization	3
PHIL 205	Ethics (GAH)	3
or PHIL 221	or Business Ethics (GAH)	
Program Elective <sup>1</sup>		3
General Elective <sup>2</sup>		3
Biological/Physical Science Elective (GS) ( <a href="https://catalog.harford.edu/general-education/#science">https://catalog.harford.edu/general-education/#science</a> )		3
<b>Credits</b>		<b>15</b>
<b>Total Credits</b>		<b>60</b>

<sup>1</sup>

Students may choose a 4-credit program elective.

<sup>2</sup>

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)