



# **Data Science AS**

The Data Science AS degree gives students the skills to analyze, procure, store, and process large amounts of data. The study of data science involves students dealing with data that comes from disparate sources in the modern context of the Internet, in various unstructured forms, and across academic disciplines.

## **Data Science Curriculum**

### **Curriculum**

## Program Courses

Course Code	Title	Course Outlines	Goal Areas	Credits
<b>CSCI 1040</b>	Fundamentals of Structured Query Language (SQL) <b>and</b>	<a href="#">View-CSCI 1040</a>	n/a	3
<b>CSCI 1130</b>	Introduction to Programming in Java (CS0) <b>and</b>	<a href="#">View-CSCI 1130</a>	n/a	4
<b>CSCI 2001</b>	Object Oriented Programming (CS1) <b>and</b>	<a href="#">View-CSCI 2001</a>	n/a	4
<b>CSCI 2011</b>	Programming in Python <b>and</b>	<a href="#">View-CSCI 2011</a>	n/a	1
<b>CSCI 2030</b>	Database Modeling and Design <b>and</b>	<a href="#">View-CSCI 2030</a>	n/a	4
<b>DSCI 2001</b>	Data Science I <b>and</b>	<a href="#">View-DSCI 2001</a>	n/a	4
<b>DSCI 2002</b>	Data Science II	<a href="#">View-DSCI 2002</a>	n/a	4
<b>DSCI 2009</b>	Interdisciplinary Applications in Data Science	<a href="#">View-DSCI 2009</a>	n/a	2

## Program Electives

Course Code	Title	Course Outlines	Goal Areas	Credits
<b>CSCI 1150</b>	Programming in C# for .NET <b>or</b>	<a href="#">View-CSCI 1150</a>	n/a	4
<b>CSCI 1180</b>	Introduction to Linux Operating System <b>or</b>	<a href="#">View-CSCI 1180</a>	n/a	4
<b>CSCI 2002</b>	Data Structures and Algorithms (CS2) <b>or</b>	<a href="#">View-CSCI 2002</a>	n/a	4
<b>CSCI 2010</b>	Discrete Mathematical Structures <b>or</b>	<a href="#">View-CSCI 2010</a>	n/a	4
<b>MATH 2000</b>	Discrete Mathematical Structures	<a href="#">View-MATH 2000</a>	n/a	4

## General Education Courses

Course Code	Title	Course Outlines	Goal Areas	Credits
<a href="#">ENGL 1200</a>	Gateway College Writing <b>or</b>	<a href="#">View-ENGL 1200</a>	n/a	4
<a href="#">ENGL 1201</a>	College Writing I <b>and</b>	<a href="#">View-ENGL 1201</a>	n/a	4
<a href="#">ENGL 1202</a>	College Writing II <b>or</b>	<a href="#">View-ENGL 1202</a>	n/a	2
<a href="#">ENGL 1203</a>	College Writing II with Workshop <b>and</b>	<a href="#">View-ENGL 1203</a>	n/a	2
<a href="#">COMM 1010</a>	Fundamentals of Public Speaking <b>and</b>	<a href="#">View-COMM 1010</a>	n/a	3
<a href="#">ECON 1060</a>	Principles of Macroeconomics <b>or</b>	<a href="#">View-ECON 1060</a>	n/a	3
<a href="#">ECON 1070</a>	Principles of Microeconomics <b>and</b>	<a href="#">View-ECON 1070</a>	n/a	3
MATH 1120 or				
MATH 1150				
<a href="#">MATH 1210</a>	Applied Statistics	<a href="#">View-MATH 1210</a>	n/a	4

## Natural Science - 1 lab course, 4 credits

Course Code	Title	Course Outlines	Goal Areas	Credits
<b>Natural Science (Goal Area 3) Lab Courses</b>				
<b>BIOL 1000</b>	Life Science <b>or</b>	<a href="#">View-BIOL 1000</a>	n/a	4
<b>BIOL 1001</b>	Biology I <b>or</b>	<a href="#">View-BIOL 1001</a>	n/a	4
<b>BIOL 1101</b>	Principles of Biology I <b>or</b>	<a href="#">View-BIOL 1101</a>	n/a	4
<b>BIOL 1102</b>	Principles of Biology II <b>or</b>	<a href="#">View-BIOL 1102</a>	n/a	4
<b>BIOL 1130</b>	Human Biology with a Lab <b>or</b>	<a href="#">View-BIOL 1130</a>	n/a	4
<b>BIOL 1360</b>	Biology of Women with a Lab <b>or</b>	<a href="#">View-BIOL 1360</a>	n/a	4
<b>BIOL 2100</b>	Microbiology <b>or</b>	<a href="#">View-BIOL 2100</a>	n/a	4
<b>BIOL 2111</b>	Human Anatomy and Physiology I <b>or</b>	<a href="#">View-BIOL 2111</a>	n/a	4
<b>BIOL 2112</b>	Human Anatomy and Physiology II <b>or</b>	<a href="#">View-BIOL 2112</a>	n/a	4
<b>BIOL 2360</b>	Genetics <b>or</b>	<a href="#">View-BIOL 2360</a>	n/a	4
<b>BIOL 2610</b>	General Ecology <b>or</b>	<a href="#">View-BIOL 2610</a>	n/a	4
<b>CHEM 1000</b>	Chemistry and Society <b>or</b>	<a href="#">View-CHEM 1000</a>	n/a	4
<b>CHEM 1010</b>	Introduction to Chemistry <b>or</b>	<a href="#">View-CHEM 1010</a>	n/a	4
<b>CHEM 1030</b>	Introduction to Physical Sciences <b>or</b>	<a href="#">View-CHEM 1030</a>	n/a	4
<b>CHEM 1061</b>	Principles of Chemistry I <b>or</b>	<a href="#">View-CHEM 1061</a>	n/a	4
<b>CHEM 1062</b>	Principles of Chemistry II <b>or</b>	<a href="#">View-CHEM 1062</a>	n/a	4
<b>NSCI 1000</b>	Conceptual Physics <b>or</b>	<a href="#">View-NSCI 1000</a>	n/a	4
<b>NSCI 1050</b>	Astronomy <b>or</b>	<a href="#">View-NSCI 1050</a>	n/a	4
<b>NSCI 1061</b>	Solar System Lab <b>or</b>	<a href="#">View-NSCI 1061</a>	n/a	1
<b>NSCI 1071</b>	Stars and the Universe Lab <b>or</b>	<a href="#">View-NSCI 1071</a>	n/a	1
<b>NSCI 1120</b>	Meteorology <b>or</b>	<a href="#">View-NSCI 1120</a>	n/a	4

Course Code	Title	Course Outlines	Goal Areas	Credits
<b>NSCI 1140</b>	Historical Geology <b>or</b>	<b>View-NSCI 1140</b>	n/a	4
NSCI 1201 <b>or</b>				
<b>PHYS 1000</b>	Conceptual Physics <b>or</b>	<b>View-PHYS 1000</b>	n/a	4
<b>PHYS 1030</b>	Introduction to Physical Sciences <b>or</b>	<b>View-PHYS 1030</b>	n/a	4
<b>PHYS 1050</b>	Astronomy <b>or</b>	<b>View-PHYS 1050</b>	n/a	4
PHYS 1061 <b>or</b>				
PHYS 1071 <b>or</b>				
<b>PHYS 1120</b>	Meteorology <b>or</b>	<b>View-PHYS 1120</b>	n/a	4
PHYS 1130 <b>or</b>				
<b>PHYS 1231</b>	Principles of Physics I <b>or</b>	<b>View-PHYS 1231</b>	n/a	4
<b>PHYS 1232</b>	Principles of Physics II <b>or</b>	<b>View-PHYS 1232</b>	n/a	4
<b>PHYS 1601</b>	General Physics I <b>or</b>	<b>View-PHYS 1601</b>	n/a	5
<b>PHYS 1602</b>	General Physics II	<b>View-PHYS 1602</b>	n/a	5

## MnTC Electives

Electives from Goal Areas 6-10 (7 credits)

**Total Credits Required**

**60**

## Program Overview

### 2024-2025

Data scientists require knowledge in a variety of information technology sub-fields, including algorithms, data structures, programming languages and statistical methods. While the field of Data Science is computer science centric, statistical and domain expertise is required. Accordingly, the data scientist may specialize in various fields, including business, physics, biology, finance and economics.

The Data Science AS gives students the skills to analyze, procure, store and process large amounts of data. The study of Data Science will have students dealing with data that comes from disparate sources in the modern context of the Internet, in various unstructured forms and across academic disciplines.

The Data Science AS Degree will Transfer/Articulate to:

Metropolitan State University for a Data Science BS Degree, which can be completed through NHCC's University Center.

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## Program Outcomes

Program outcomes:

After successfully completing this program, a student will be able to:

1. Empirically support business decisions and scientific research.
  2. Properly interpret and communicate statistical measures.
  3. Select relevant data for system development and analysis.
  4. Apply general analytical models to specialized areas in other disciplines.
  5. Derive meaning from data in relevant contexts.
  6. Properly assess and apply systems of algorithms, databases and third party software.
  7. Understand the role of networked systems and their topologies for data analysis.
  8. Determine appropriate resource allocations for solving data oriented problems.
  9. Explain how data is procured, stored and analyzed.
  10. Apply methods of data preparation such as parsing and normalization.
  11. Interpret statistical parameters for understanding data in context.
  12. Evaluate models of data analysis.
  13. Develop algorithmic solutions using appropriate programming structures.
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## Program Maps

Program roadmaps provide students with a guide to understand the recommended course sequence to complete their degree.

- [Data Science AS Full Time](#)
  - [Data Science AS Part Time](#)
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## Career Opportunities

Information on careers, including career descriptions, salary data, and employment outlook is available on the [Bureau of Labor Statistics website](#) and [O\\*Net Online website](#).

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## Transfer Information

If you are planning on transferring to another institution, follow the guidelines available on our transfer resources web page to help you plan the process: [Transfer Information](#)

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## Degree Information

The Associate of Science (A.S.) degree is intended for students whose primary goal is to complete the credentials for a specific career and/or prepare for transfer to complete a bachelor's degree at a college or university with whom North Hennepin Community College has an articulation agreement. The A.S. degree provides a balance of general education courses and the required scientific, professional or technical courses in the degree program.

A student shall:

- Earn a minimum of 60 semester credits as required in the program, with a grade point average of 2.00 (C) or above in courses taken at North Hennepin Community College. Specific programs

may have additional requirements or a higher minimum grade point average.

- Earn a minimum of 15 semester credits at North Hennepin Community College. A student must complete at least 50% of career specific courses at North Hennepin Community College.
- Earn 30 credits in at least 6 Minnesota Transfer Curriculum (MnTC) goal areas.
- Earn 30 professional/technical credits.
- Have four years to complete the graduation requirements as published in the catalog in effect at the time of their initial enrollment. Students taking more than four years to complete their graduation requirements may follow any catalog published during the four year period preceding their graduation.

Completion of an A.S. degree fulfills the Goal Area 2 requirement of the Minnesota Transfer Curriculum (MnTC).

**Developmental Courses** Some students may need preparatory course(s) in Math and/or English. Courses numbered below 1000 will not apply toward a degree.

**Equal Opportunity Employer and Disability Access Information** North Hennepin Community College is a member of Minnesota State Colleges and Universities system and an equal opportunity employer and educator. This document is available in alternative formats to individuals with disabilities by calling 7634930555 or through the Minnesota Relay Service at 18006273529.

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## Accreditation

North Hennepin Community College is accredited by the Higher Learning Commission ([hlcommission.org](https://hlcommission.org)), an institutional accreditation agency recognized by the U.S. Department of Education.

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