

# ADVANCED DATA SCIENCE OPTION

This option is available within the Data Science (<https://catalog.oregonstate.edu/college-departments/science/statistics/data-science-bs-hbs/>) major at the following location:

- Corvallis

The Advanced Data Science option provides data science majors with a strong foundation in advanced theoretical concepts, preparing them for graduate studies in fields like data science, statistics, and biostatistics.

**Option Code: A052**

*Upon successful completion of the program, students will meet the following learning outcomes:*

- Develop advanced mathematical skills by applying concepts from vector calculus to analyze the behavior of complex functions.
- Analyze and evaluate the efficiency of algorithms, and apply appropriate techniques to optimize algorithmic performance.
- Apply Bayesian models to analyze data and derive insightful conclusions.
- Design efficient data analysis pipelines for modern complex data.

Code	Title	Credits
Required Core		
MTH 254	VECTOR CALCULUS I	4
DS 451	METHODS OF DATA ANALYSIS FOR COMPLEX AND NETWORK DATA	3
DS 453	BAYESIAN MODELS FOR DATA SCIENCE	4
CS 325	ANALYSIS OF ALGORITHMS	4
ST 407	SEMINAR (Attendance at Consulting Practicum)	1
Electives		
Select additional electives from ST, DS, CS, MTH, BDS or others with advisor approval <sup>1</sup>		5
Total Credits		21

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A minimum of 15 upper-division credits are required in the option

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