



# Data Science and Statistics

## Minor

DSST.RICHMOND.EDU

### Data Science and Statistics (Interdisciplinary Minor)

The minor in Data Science and Statistics prepares students to address the challenges of collecting, understanding, and presenting structured and unstructured data from a variety of different domains and contexts.

The program takes an interdisciplinary approach built around five specific skills needed to achieve these goals: (1) developing proficiency in data-oriented programming, (2) understanding probability theory and statistical inference, (3) understanding which methods are appropriate for which kinds of data analysis, (4) ability to identify and address the ethical and privacy concerns regarding data analysis, and (5) gaining experience applying techniques and presenting results within the context of an application domain.

#### Requirements

The minor in Data Science and Statistics requires six units. Grade point average of coursework comprising the minor must be no less than 2.00, with no course grade below C- (1.70). Units include:

One introductory course in statistical methods:

- DSST 189: Introduction to Statistical Modeling<sup>1</sup> (*formerly MATH 209*)
- or
- BIOL 320: Experimental Design and Biostatistics
- CHEM 300: Measurement Statistics
- PSYC 200: Methods and Analysis
- RHCS 245: Digital Humanities

Three core courses:

- DSST 289: Introduction to Data Science (*formerly MATH 289*)
- DSST 389: Statistical Learning (*formerly MATH 389*)
- RHCS 345: Data and Society

Two additional units of electives, chosen from:

- BIOL 336: Eco-epidemiology with Lab
- CHEM 301: Quantitative Methods of Chemical Analysis
- CHEM 314: Physical Chemistry Laboratory I
- CHEM 315: Physical Chemistry Laboratory II
- CMSC 325: Database Systems
- CMSC 327: Machine Learning
- GEOG 260: Foundations of Geospatial Analysis
- GEOG 360: Environmental Remote Sensing
- GEOG 365: Advanced Spatial Analysis

- MATH 329: Probability
- MATH 330: Mathematical Statistics
- PSYC 300: Methods and Analyses Core Project
- PSYC 343: Psycholinguistics

Students may petition to replace an introductory statistical methods course with an additional elective; they may also petition to include other advanced courses as electives with permission of the program coordinator. Normally only one elective should be an independent study or independent research course. The minor may not be combined with the major concentration in Data Science and Statistics (in Math or Computer Science) nor can it be combined with the Business Analytics concentration.

<sup>1</sup> *Students looking to select courses specifically for the minor should consider taking MATH209 as an introduction. The other options are primarily designed to provide alternative pathways for students who have already taken, or are required to take for another major, one of the other courses on the list.*

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