

OLD DOMINION UNIVERSITY

PROPOSAL FOR A NEW INTERDISCIPLINARY MINOR

Data Science

A minor may be chosen by students to support their major, to offer greater job opportunities on graduation, or to provide recognition in a second area of study. Completion of an approved minor will meet the upper-division General Education requirement. Interdisciplinary minors require 12 credit hours of 300/400-level courses selected from at least two different disciplines with a maximum of six credits from any one discipline. Please refer to the *Undergraduate Catalog* for the complete policy on minors.

Minimum enrollment expectations for minors are five graduates in five years or the minor will be discontinued.

Proposed Action (check one): New Minor

1. Name of proposed minor: Data Science

2. Description of proposed minor or change to an existing minor:

The increased amount of available data has heightened the demand for data science savvy employees across a range of fields. The minor in data science will allow students from various majors to gain foundational knowledge in the basics of data science and to practice these skills through a choice of application areas across different domains. A minor in data science can improve students' data literacy, making them more aware and comfortable working with data.

3. Rationale for proposal: (address what the proposed minor will accomplish for students)

Students from different majors can enhance their preparation for various careers by completing the data science minor. This minor will equip students with knowledge of the way data is collected, analyzed, and applied. It will also enhance their knowledge of data applications and data interpretation, thus enriching the career path they choose. After completing two core courses, students choose two additional courses that best fits with their career goals. Students majoring in any field would be better prepared for their careers, as the use of data-based decision making is increasing across domains. The minor will provide the basic knowledge needed to understand data science tasks and students will be cognizant of the ethical issues surrounding data usage.

4. Majors likely to enroll in the minor (for new minors):

This minor is targeted at students in various majors at Old Dominion University, including mathematics, computer science, engineering, business, geography, sociology, political science, criminal justice, health services and others. The target audience includes students interested in

careers requiring either the application of data analytical tools, the ability to communicate about data, or the need to make evidence-based decisions.

5. Projected enrollment and why (for new minors):

Based on cybersecurity, business analytics and similar minors:

Year	Projected Enrollment
2023	25
2024	30
2025	35
2026	40

6. Proposed Effective Term: Fall 2023

7. Resources needed:

Minimal new resources are being committed to support the development of the data science education and research initiatives at the university. All courses will be taught by existing faculty.

8. Program requirements:

[List below all courses required for the minor, the prerequisites, and the total hours required for the minor. Submit the appropriate information through the online Course Inventory Management (CIM) process in CourseLeaf (nextcatalog.odu.edu/courseadmin) for all new courses/course changes.]

Data Science Interdisciplinary Minor Coordinator

Dr. Sampath Jayarathna, Assistant Professor, Department of Computer Science,

For completion of the Minor, students must have a minimum overall grade point average of 2.00 in all courses required for the minor exclusive of pre-requisites. At least six (6) hours of the required twelve (12) must be taken through courses offered by Old Dominion University

Three credit hours in the interdisciplinary minor may be in the major if a major course is listed as an option for the interdisciplinary minor. As such, it will be credited toward both the major and the interdisciplinary minor. Interdisciplinary minors require 12 credit hours of 300/400-level courses selected from at least two different disciplines with a maximum of six credits from any one discipline. Course substitutions may be approved by the interdisciplinary minor coordinator.

A. Required Courses: 2 courses – 6 credits

1. DASC 300. Foundations of Data Science
2. DASC 357E Ethics and Data

B. Elective Courses: 2 courses – 6 credits

BDA 401. Programming Languages for Data Sciences.
BDA 411. Intro to Machine Learning
BNAL 306. Business Analytics II
CHP/PUBH 445. Health Services Research Methods
CYSE 420. Applied Machine Learning in Cybersecurity
CS 422. Introduction to Machine Learning
CS 432. Web Science
CRJS 344. Social Science and Crime Mapping
CRJS/SOC 436. Capstone Research Project.
ECE 407. Introduction to Game Development
EXSC 420. Research Methods in Exercise Science
GAME 440. Advanced Visual Design and Digital Graphics for Games
GEOG 402 Geographic Information Systems
GEOG 425. Internet Geographic Information Systems
HPE 406. Tests and Measurement in Physical Education and Health
MSIM 480. Introduction to Artificial Intelligence
OEAS 451W. Data Collection and Analysis in Oceanography
POLS 418. Quantitative Methods
PSYC 317. Supervised Research.
SEPS 420. Fashion Research
STAT 310. Introduction to Data Analysis
STEM 382. Industrial Design

9. Description (showing new copy or revised copy) for the next *Undergraduate Catalog*:

This interdisciplinary minor in data science is focused on the analytical and ethical principles of data collection, data analysis, and the application of data in various domains. An interdisciplinary foundation is used to demonstrate the connections between phenomena studied by scientists and the impact of scientific data analysis on businesses and societies. The program includes coursework focusing on the principles of data analysis as well as coursework selected by students to apply those principles to topical domains.

10. Schedule for offering courses for new minors (include whether the minor can be completed in two years and whether it will be available through Distance Learning):

The minor in data science can be completed in two years and some courses may be available through distance learning. Course offerings are managed by individual departments, but all courses will be offered at least once per academic year, and many are offered both Fall and Spring semesters.

11. Effect on current department course schedule—for new minors:

There is no anticipated effect on current schedules.

APPROVED

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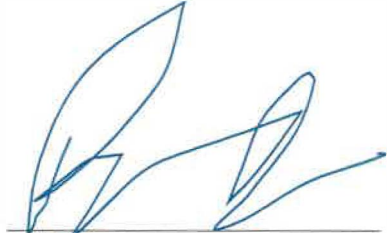
Originator of Request

 3/2/23

Department Chair

Saltuk Karahan 3/2/23

Chair, College Committee


College Dean _____ Date _____

External Department Chair(s) _____ Date _____
(If applicable)

Chair, Faculty Senate _____ Date _____
Committee A

Provost _____ Date _____

See attached for approvals of external department chairs. *Approved by email.*

Administrative Coding
Effective term: Fall 2023
College: School of Data Science
Department: "

Major Code: Registrar will assign
Degree Code: N/A