



# Multidisciplinary Studies Data Science and Analytics Track (M.S.)

*The master of science in multidisciplinary studies data science and analytics track curriculum is a partnership between Buffalo State College and SUNY Fredonia, and offered with the cooperation of faculty from economics, geography and planning, business, computer information systems, computer science, mathematics, science education, social psychological foundations, and other disciplines. In this cutting edge program, students combine programming and math/statistics courses with business intelligence and internships as they apply their learning in real-world settings.*

## ABOUT THE PROGRAM

Data science and analytics (DSA) is a fast-growing discipline leading to excellent job opportunities in a variety of fields, including business, industry, health, government, and education. Students who enroll in the multidisciplinary studies DSA track will be guided to create their best degree curriculum based on their own career aspirations.

The curriculum includes courses covering big data, statistics, machine learning, database management, data visualization, programming, and business intelligence. All students will have applied and experiential learning opportunities, be involved in research, and be required to complete an internship.

The degree program is interdisciplinary in nature. Students will have the benefit of studying from experts in the respective fields in a coordinated curriculum. The DSA curriculum will be combined with business and communication courses allowing graduates to become leaders in their profession.

## WHO SHOULD APPLY

The DSA track is designed for individuals with quantitative talent, scientific background, and an entrepreneurial mindset wanting to join the data revolution that is changing all aspects of modern life. The data being collected everywhere in our lives has been hailed as the oil of the new century. The need to understand such data has generated a demand for skilled data analysts.

## TRACK CURRICULUM

### Required Courses (18 credits)

#### Computer Science (6 credits)

- CIS 512 Introduction to Data Science and Analytics
- CIS 600 Machine Learning for Data Science

#### Mathematics and Statistics (6 credits)

- MAT 646 Introduction to Statistics for Data Science
- MAT 616 Elements of Mathematics, Programming and Computer Science for Data Science

#### Research Methods and Internship (6 credits)

- SPF 689 Research Methods
- DSA 690 Internship/Master's Project

#### Sample Electives (12 credits)

- DSA 501 Data Oriented Computing
- DSA 650 Data Strategy and Governance
- BUS 665 Introduction to Entrepreneurship for Non-Business Professionals
- GEG 584 Geospatial Programming

*Other courses available with advisement*

## ADMISSION REQUIREMENTS

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.5 (4.0 scale).
2. A two- to three-page statement of intent essay that includes educational and professional objectives and reasons for interest in a nontraditional study format.
3. [Signed principal adviser consent form](#). Students in the DSA track will be advised by Dr. Joaquín Carbonara or Dr. Barbara Sherman.
4. An interview with Dr. Kimberly Jackson, the multidisciplinary program coordinator, who will contact the student for an appointment after the completed application is received.

In addition, all applicants should review the Admission to a Graduate Program section in the Graduate Catalog ([catalog.buffalostate.edu/graduate](http://catalog.buffalostate.edu/graduate)).

## CRITERIA FOR SUCCESS

Students in this curriculum engage immediately in advanced courses in math and computer science. Certain background knowledge is necessary for success in the curriculum. It is recommended that applicants should have completed introductory-level undergraduate or equivalent coursework in computer programming, calculus, and basic statistics. If needed, the preparatory courses are available by advisement.

## CONTACT INFORMATION

For specifics about the multidisciplinary studies program and graduate study guidelines:

Dr. Kimberly Jackson  
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1300 Elmwood Avenue  
Buffalo, NY 14222  
(716) 878-5601  
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For DSA track information and admission guidance:

Dr. Joaquín Carbonara (math/statistics)  
(716) 587-2882  
[carbonjo@buffalostate.edu](mailto:carbonjo@buffalostate.edu)

Dr. Barbara Sherman (CIS)  
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