Data Science M.S.

The Department of Data Science is the newest addition to the Ying Wu College of Computing. It was founded by well-established, prominent researchers and educators with outstanding track records in Artificial Intelligence, Machine Learning, High Performance Data Analytics, Security/Privacy/Ethics in Data Science, Health Data Science, Green Data Science, and Data Visualization. The Department of Data Science was founded in 2021. The M.S. degree program in Data Science is jointly administered by the Department of Data Science and the Department of Mathematical Sciences. This degree program responds to a strong demand from employers for trained Data Scientists. Data is revolutionizing most industries and M.S. graduates in Data Science command high starting salaries.

Data Science combines powerful methods from Computer Science, Statistics, Artificial Intelligence and Machine Learning into a unique new blend of techniques for deriving valuable insights from Big Data. Data Science is an ideal choice for students who are interested in applying data processing methods to ever-larger and more varied real-world data sets, including image, video, natural language and speech data that go substantially beyond traditional text and table data to solve real-world problems. The Department of Data Science closely collaborates with the Department of Mathematical Sciences and the Department of Computer Science. Students also can get involved in state-of-the-art research projects at the NJIT Institute for Data Science, where top notch scientists work with users to develop data-driven technologies to innovate the way the world works and lives.

Master of Science in Data Science

The Master of Science (M.S.) in Data Science (DS) is intended for students who are interested in pursuing advanced studies in data science.

Admission Requirements

- **GPA**
  - Undergraduate GPA of at least 3.0 out of 4.0 is required for students with a data science, applied statistics, or computer science background.
  - Undergraduate GPA of at least 3.0 out of 4.0 is required for students without a data science, applied statistics, or computer science background. Students wishing to pursue the computing track who have an insufficient computing background will be asked to enroll in a relevant Certificate Program and obtain a GPA of at least 3.0 before being admitted to the M.S. program. Students wishing to pursue the statistics track with an insufficient mathematics/statistics background will be asked to successfully complete suitable bridge courses as per the advisor’s review.

- **Foreign students without GPA must have graduated “first class,” corresponding to a B average.**

- **International students TOEFL score:** the Institute requires a minimum score of 213 paper based or 79 online.

- **International students:** GRE required.

- **Students with a US or Canadian degree in data science, computer science, mathematical sciences, or engineering:** GRE recommended but not required.

- **Students with a US or Canadian degree not in data science, computer science, mathematical sciences, or engineering:** GRE required.

Students are expected to have good programming skills and a grasp of the fundamentals of computer science, data science, and the mathematical sciences (students should have acquired this knowledge in the undergraduate degree Bachelor of Science in Data Science, Applied Statistics, or Computer Science or an equivalent degree). Detailed topics are listed below.

Applicants to the computing concentration lacking the computing background should first enroll in one of the three associated Data Science Certificates (Data Mining, Data Visualization, Big Data), and, upon successful completion of the Certificate, apply for transfer into the M.S. in DS program – computing concentration. Applicants to the statistics concentration with insufficient background in mathematics/statistics will be asked to complete suitable bridge courses as per the advisor’s review.

Students must maintain a cumulative graduate GPA of 3.0 or better throughout the course of studies and for graduation.

Application Processing

The Departments of Data Science and Mathematical Sciences review only completed applications submitted to the Office of Graduate Admissions. Applicants are advised to request status information on their application directly from the Graduate Admissions Office, not the Departments of Data Science or Mathematical Sciences. Graduate Admissions can be reached at admissions@njit.edu or www.njit.edu/gadmission (https://www.njit.edu/admissions/graduate-admissions/) or by mail at

NJIT, Graduate Admissions Office, University Heights, Newark NJ 07102.

Detailed Topics:

Students entering the M.S. in DS program are expected to have mastered the following topics: Basic programming constructs, writing and debugging programs, iteration, recursion; basic data structures (lists, arrays, hash tables), search and sort, algorithm analysis; basic probability distributions and statistical analysis; linear algebra, calculus (derivatives, integrals, applications, functions of multiple variables).
Bader, David, Distinguished Professor
D
Dasgupta, Aritra, Assistant Professor
G
Geller, James, Professor
P
Phan, Hai, Assistant Professor
R
Roshan, Usman, Associate Professor
W
Wu, Chase, Professor

**Programs**

Data Science - M.S.– Computational Track (http://catalog.njit.edu/graduate/computing-sciences/data-science/data-science-ms/)

- Big Data Essentials (http://catalog.njit.edu/graduate/computing-sciences/data-science/big-data-essentials-cert/)
- Data Mining (http://catalog.njit.edu/graduate/computing-sciences/data-science/data-mining-cert/)
- Data Visualization (http://catalog.njit.edu/graduate/computing-sciences/data-science/data-visualization-cert/)