



# MASTER OF SCIENCE IN ANALYTICS

**THE MASTER OF SCIENCE IN ANALYTICS (MSiA)** program within Northwestern Engineering immerses students in a comprehensive and applied data science curriculum. With intensive training in applied math, programming, and business, students learn to develop machine learning and artificial intelligence solutions in a business context. Through coursework and applied industry projects, the program prepares graduates for careers and leadership positions in this fast-growing field.



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## PROGRAM OVERVIEW

### DEGREE REQUIREMENTS

Students enter the program as a cohort in September and graduate in December of the following year. Students must complete the following:

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15 units of coursework

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An eight-month industry practicum

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A minimum 10-week, full-time internship

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A 10-week industry capstone project

### COURSEWORK

Students complete a sequenced data science curriculum with a business focus taught by tenured faculty from Northwestern's McCormick School of Engineering and Kellogg School of Management, as well as industry professionals. Courses including predictive analytics, deep learning, data visualization, analytics for big data, data warehousing, and leadership for analytical organizations and functions make up our core curriculum. Throughout the program, students learn to identify patterns and trends, gain insight from vast quantities of structured and unstructured data, and communicate findings in practical and useful terms.

Coursework includes advanced machine learning and artificial intelligence techniques in addition to traditional applied statistical approaches. Students learn to think critically about matching techniques and programming solutions to business problems within an organizational context. To ground our curriculum in practical data science, our faculty use case studies of real-world analytics problems to foster discussion and refine mathematical, computing, and operational skills.

Students learn how to effectively use tools such as Java, Python, R, SQL, Tableau, D3, Spark, TensorFlow, and more in a business setting.

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### INTERNSHIP

Students gain valuable exposure working on data science teams while completing required internships. The MSIA program brings more than 30 companies to campus each year for recruiting events and maintains strong ties with industry leaders. Each cohort pursues a range of industries often through connections fostered by the program, faculty, and its alumni network.



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## INDUSTRY-BASED PROJECTS

During the practicum and capstone projects, students work collaboratively in teams for extended periods on industry-supplied problems. Teams work with technical advisers, business advisers, and company sponsors in order to scope projects, cleanse and process data, and perform analytics before delivering final recommendations to the clients. These industry-based projects give students crucial practical experience implementing data modelling and business application strategies, as well as build collaborative presentation skills that will translate to any career path.

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## SPEAKER SEMINAR SERIES

To complement academic instruction, our program typically hosts guest speakers throughout the academic year. Each quarter, we invite top scholars and industry professionals who are innovating in the field to present guest lectures and workshops to our students.

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## ADMISSION REQUIREMENTS

The 15-month, full-time Master of Science in Analytics program admits a small number of students each fall quarter (about 40). Competitive candidates often have strong quantitative backgrounds and programming experience, however, we encourage prospective students from a variety of undergraduate and professional disciplines to apply. The admissions review committee assesses each application holistically in order to put together a cohort with a diverse range of educational backgrounds and work experiences.

The MSiA admission season begins each September and applications are accepted on a non-rolling basis. Application deadlines are:

Scholarship Priority: December 1

Regular: January 15

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## FELLOWSHIPS

Each year, the MSiA program offers a small number of merit-based, partial-tuition scholarships. All applicants will be considered for scholarship, however, those who submit and complete their application by the Scholarship Priority deadline are likely to receive the fullest consideration for scholarship by the admissions review committee.

Those who submit and complete an application by the regular deadline may still be considered for second-round scholarship funding as available.

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## CONTACT

Learn more about the MSiA program at [analytics.northwestern.edu](https://analytics.northwestern.edu) or contact [analytics@northwestern.edu](mailto:analytics@northwestern.edu) with specific questions.

