Online Master of Science Program in Applied Data Science

The Master of Science in Applied Data Science gives students a thorough knowledge of techniques in the field of analytics and data science, and the ability to apply them to real-world business scenarios. Building from a core in applied statistics, math and programming, students are provided with advanced analytical training to develop their ability to draw insights from big data. This includes: machine learning and predictive analytics, deep learning, reinforcement learning, data engineering platforms, time series analysis, linear and non-linear models, statistical methods, and other sophisticated techniques for analyzing complex data.

The program is highly applied in nature, integrating business strategy, project-based learning, simulations, case studies, and specific electives addressing the analytical needs of various industry sectors. Through partnerships with key employers, the program also provides students with a client based, 2 term Capstone experience as well as access to career networks and employment pathways upon graduation.

- Program type: masters degree program
- Program structure, courses, requirements, and application (https://grahamschool.uchicago.edu/credit/ master-science-analytics/index/)
- Location: online (synchronous and asynchronous)
- Full-time: weekday, weekday evening, and Saturday classes (as available)
- Part-time: weekday evenings and Saturday classes (as available)
- Time to completion: 1-4 years
- Only courses with a grade of B- or better will count toward degree requirements

Minimum G.P.A. for satisfactory academic progress: 3.0

Admission criteria:

- Online application
- One transcript from each prior academic institution
- Candidate statement
- Resume or CV

Applicants who attended an international university must also:

- Satisfy English language proficiency requirement
- Provide course by course evaluation

Program requirements:

12 courses curriculum

- Foundational Skills courses [non-credit courses, 4 depending on assessment results of 80% or higher to waive the course(s)]
- Core courses (7)
- Electives (3)
- Capstone project (2)

Foundational Courses:

Foundation courses provide the basis for our rigorous applied data science degree that support the theoretical, strategic, and practical analytics studies in more advanced courses. Students with sufficient preparation may be eligible to bypass the programming course.

Pre-quarter foundational courses (non-credit):

Students are required to take the following pre-quarter courses, unless they receive an 80% or higher on the course assessments.

- ADSP 31000 Introduction to Statistical Concepts (Course offered during pre-quarter; waived with 80% or higher on the Statistics assessment)
- ADSP 37020 R for Data Science (Course offered during pre-quarter; waived with 80% or higher on the R assessment)
- ADSP 37021 Python for Data Science (Course offered during first 5-weeks of the first admitted quarter; waived with 80% or higher on the Python assessment)

 ADSP 37016 Advanced Linear Algebra for Machine Learning (Course offered during second 5-weeks of the first admitted quarter; waived with 80% or higher on the Linear Algebra assessment)

ADSP Core requirements:

- ADSP 31006 Time Series Analysis and Forecasting
- ADSP 31007 Statistical Analysis
- ADSP 31008 Data Mining Principles
- ADSP 31009 Machine Learning & Predictive Analytics
- ADSP 31010 Linear and Non-Linear Models

One of the following Data Engineering courses*

- ADSP 31012 Data Engineering Platforms for Analytics
- ADSP 31013 Big Data and Cloud Computing

The following Leadership course*

ADSP 31016 Leadership & Consulting in Data Science ADSP 31016 Leadership & Consulting in Data ScienceADSP 31016 Leadership & Consulting in Data ScienceSP 31016

ADSP Electives (subject to instructor availability):

- ADSP 32001 Financial Analytics
- ADSP 32003 Marketing Analytics
- ADSP 32007 Data Visualization Techniques
- ADSP 32009 Data Science in Healthcare
- ADSP 32013 Optimization and Simulation Methods for Analytics
- ADSP 32014 Bayesian Methods
- ADSP 32015 Digital Marketing Analytics in Theory and Practice
- ADSP 32017 Advanced Machine Learning & Artificial Intelligence
- ADSP 32018 Natural Language Processing and Cognitive Computing
- ADSP 32019 Real-Time Intelligent Systems
- ADSP 32020 Reinforcement Learning
- ADSP 32021 Machine Learning Operations
- ADSP 32023 Advanced Computer Vision with Deep Learning

Capstone project:

- ADSP 34002 Capstone I
- ADSP 34003 Capstone II

Optional course:

ADSP 37019 Career Course

*Optional core courses may be taken as electives.

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M.S. IN ANALYTICS COURSES

