Master of Science in Analytics

Analytics is the art, science, and culture of using data and advanced quantitative methods to improve an organization’s offerings, processes, and outcomes.

Organizations will always be challenged by the need to make decisions in the face of imperfect and incomplete knowledge. Recently, however, advances in data-capture and management, the digitization of internal and client-facing processes, and other developments have created substantial quantities of raw information that have the potential to narrow this knowledge gap. In order to realize this opportunity, the modern economy requires professionals trained in the appropriate tools, techniques, professional skills, and related proficiencies required to extract actionable knowledge from raw data and communicate data-driven insights in a manner that enhances organizational thinking, learning, and decision making.

Bellarmine’s MSA program, offered through its Institute for Advanced Analytics (IAA), has been designed to appeal to working professionals seeking to learn the tools, techniques, critical thinking skills, and other proficiencies required to become highly skilled, sought-after, and productive analytics practitioners.

**MSA OUTCOMES**

Graduates from the MSA program will have gained:

- The technical and quantitative skills required to access and manipulate data, build computational models of real-world processes, and create data-enabled solutions to real-world problems
- Training in a number of software tools widely used in organizations today. (The specific set of tools taught varies with each cohort due to evolution within the field, but may include R, SAS, Python, Tableau, SQL/SQL Server, and Excel/VBA.)
- The consultative problem solving skills required to seek out and understand organizational challenges, frame them as analytical opportunities, and successfully manage the execution of these exercises
- The communication skills required to articulate the results of analytical exercises and related data-driven insights
- The leadership skills needed to develop an organizational culture that supports and encourages the application of analytics in its decision making processes
- Exposure to a number of local organizations currently using, and/or seeking to use, data in order to improve its outcomes
COHORT SCHEDULE
The 15-month program is scheduled to begin in January of 2017 and end in May 2018.

CURRICULUM
The MSA program comprises a number of modules, designed and delivered in a flexible, integrated manner that presents a seamless ‘learning narrative’ for students.

While not an exhaustive list of topics covered, the following constitutes the main body of training delivered during the program:

**Professional Skills for Analytics**
- Analytical and Critical Thinking
- Analytical Leadership
- Project Management
- Consultative Problem Solving
- Communications Skills

**Quantitative Foundations for Analytics**
- Computational Probability and Statistics
- Linear Algebra
- Research Methods

**Data Management and Exploratory Data Analytics**
- Data Programming
- Data Management
- Exploratory Data Analysis
- Data Visualization
- Business Intelligence and Reporting
- Sourcing Public and Commercially Available Data

**Analytical Methods**
- Decision Models
- Statistical Modeling
- Data Mining/Machine Learning
- Time Series Analysis/Forecasting
- Text Analytics
- Optimization Methods
- Simulation Modeling
- Geospatial Analytics
- Graph and Network Analysis
Analytical Applications
- Marketing and Customer Analytics
- Web and Social Media Analytics
- Financial/Risk Analytics

PROGRAM ADMISSIONS REQUIREMENTS

Undergraduate Degree
- Applicants must hold an undergraduate degree from an accredited college or university.
- We accept applicants from a wide variety of backgrounds including computer science, engineering, mathematics, statistics, economics, business, the natural sciences, and select social sciences. Prospective applicants from non-quantitative disciplines, but with appropriate undergraduate coursework (see below), are encouraged to contact the MSA program director to discuss suitability for the program.

Course Requirements
- While not required, prior exposure to coursework in calculus, linear algebra, statistics, and computer programming is associated with positive learning outcomes.

GPA Requirements
- Applicants must have a minimum overall undergraduate GPA of 2.75 (4.0 scale).
- For applicants with 3+ years of experience in a field involving data analysis, an overall undergraduate GPA of 2.5 is acceptable.

Admissions Interview
All applicants for the MSA program will be considered on the basis of their expected ability to thrive in an academic program and career path that requires a balance of quantitative strength, analytical reasoning ability, and communication skills. In cases where an applicant’s transcripts, resume, essays, and references do not sufficiently speak to this ability, the applicant may be asked to sit for an interview with the admissions committee.

TUITION AND FEES
Tuition for the 2017-2018 cohort will be $1,000 per credit hour. The program is 33 credit hours and the total cost is $33,000. (Required textbooks will need to be purchased separately.)
APPLICATION PROCEDURE

All applicants must submit:

1. The online application form at: www.bellarmine.edu/applynow. This includes a typewritten response to two essay questions and two letters of recommendation evaluating the applicant’s academic and professional potential.

2. A non-refundable application fee of $40 (not required of Bellarmine University alumni. If so, please use promo code: BUALUMFREE).

3. A current resumé or curriculum vitae.

4. Final official transcript(s) from each college or university attended. You must provide information on all the colleges you have attended, regardless of degree completion. Transcripts should be mailed to the Office of Graduate Admission and not be marked “Issued to Student.” If any transcript(s) or undergraduate degree(s) is from an international institution, applicants must provide an official copy to be evaluated by the Bellarmine International Programs Office. The Office of Graduate Admission reserves the right to request a certified copy of the original transcript(s).

INTERNATIONAL APPLICANTS

Please complete the items under Procedure for Admission and submit the following:

Language Proficiency. All students are expected to have appropriate English-language proficiency to be admitted to the university. The language proficiency is required to ensure students are adequately prepared and well positioned to succeed.

Financial Affidavit. All applicants must provide credible evidence (e.g. a bank statement, letter on bank stationary attesting to the availability of funds, etc.) of the ability to fund the cost of attending Bellarmine University for one academic year. If funds are provided by another person on behalf of the student, an affidavit must accompany the financial information.

Proof of Passport. Scan of passport ID page must show validity for 6 months post completion of the program.
CONTACT
For more information about the Master of Science in Analytics contact:

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Bellarmine University admits qualified students of any age, gender, gender identity, sexual orientation, race, disability, color, religion, and national or ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students at the school. It does not discriminate on the basis of age, gender, gender identity, sexual orientation, race, disability, color, religion, or national or ethnic origin in administration of its educational policies, admissions policies, scholarship and loan programs, and athletic and other school administered programs. Bellarmine University will not tolerate any form of sexual misconduct, which includes, but is not limited to, sexual harassment, non-consensual sexual contact, non-consensual sexual intercourse, sexual exploitation, rape or retaliation arising out of any of the above acts, as more fully defined in the Bellarmine Sexual Discrimination and Misconduct Policy in the Student and Employee Handbooks. Bellarmine University is an equal opportunity employer.

6/13/2016