

# DECISION ANALYTICS, MASTER OF (M.D.A.) WITH A CONCENTRATION IN DATA SCIENCE IN BUSINESS

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## Program accreditation

Association to Advance Collegiate Schools of Business (<http://www.aacsb.edu/>)

## Program goal

The Master of Decision Analytics provides students with knowledge of the statistical, mathematical and scientific skills and experience necessary to utilize advanced methods of data analysis for business decision-making.

## Student learning goals

Students will be able to examine a situation/problem to determine a relevant data-driven analysis to provide valuable information for decision makers and apply advanced analytical and quantitative skills to the decision problems of businesses, organizations and society. Students will be able to communicate analysis information and recommended decisions in a clear, ethical and transparent manner. Students will be able to leverage unstructured data in support of business decision making.

## Student learning outcomes

### Master of Decision Analytics core outcomes

1. **Database structures and query:** Students will have an understanding of basic database structures, be able to query databases and organize data for analysis.
2. **Quantitative skills:** Students will be able to identify appropriate data analysis approaches to address real-world problems. They will be able to perform the analysis using commercial software.
3. **Problem formulation:** Students will have the knowledge, skills and practice to take nonquantitative and perhaps ill-formed problems and issues and determine ways objective analysis can bring organization and insight to them. They will be able to determine data requirements and query available databases.
4. **Analytics applications:** Students will experience various applications of analytics in real situations.
5. **Technical communications and teamwork:** Students will be able to communicate analytical analysis and results effectively to nonquantitative audiences, and will develop skills in organizing, interacting and analyzing real problems as members of a team.

### Data science in business concentration-specific outcome

1. **Unstructured data:** Students will be able to acquire and store unstructured data and then apply analyses to unstructured data to create a story based on the results.

## VCU Graduate Bulletin, VCU Graduate School and general academic policies and regulations for all graduate students in all graduate programs

The VCU Graduate Bulletin website documents the official admission and academic rules and regulations that govern graduate education for all graduate programs at the university. These policies are established by the graduate faculty of the university through their elected representatives to the University Graduate Council.

It is the responsibility of all graduate students, both on- and off-campus, to be familiar with the VCU Graduate Bulletin as well as the **Graduate School website** and academic regulations in individual school and department publications and on program websites. However, in all cases, the official policies and procedures of the University Graduate Council, as published on the VCU Graduate Bulletin and Graduate School websites, take precedence over individual program policies and guidelines.

**Visit the academic regulations section for additional information on academic regulations for graduate students.**

## Degree candidacy requirements

A graduate student admitted to a program or concentration requiring a final research project, work of art, thesis or dissertation, must qualify for continuing master's or doctoral status according to the degree candidacy requirements of the student's graduate program. Admission to degree candidacy, if applicable, is a formal statement by the graduate student's faculty regarding the student's academic achievements and the student's readiness to proceed to the final research phase of the degree program.

Graduate students and program directors should refer to the following degree candidacy policy as published in the VCU Graduate Bulletin for complete information and instructions.

**Visit the academic regulations section for additional information on degree candidacy requirements.**

## Graduation requirements

As graduate students approach the end of their academic programs and the final semester of matriculation, they must make formal application to graduate. No degrees will be conferred until the application to graduate has been finalized.

Graduate students and program directors should refer to the following graduation requirements as published in the Graduate Bulletin for a complete list of instructions and a graduation checklist.

**Visit the academic regulations section for additional information on graduation requirements.**

## Other information

School of Business **policies and procedures for graduate students** are available on the school's website.

Apply online today. (<https://www.vcu.edu/admissions/apply/graduate/>)

## Admission requirements

Degree:	Semester(s) of entry:	Deadline dates:	Test requirements:
M.D.A.	Fall	Jul 1	
	Spring	Nov 1	
	Summer	Mar 1	

In addition to the general admission requirements of the VCU Graduate School (<http://bulletin.vcu.edu/graduate/study/admission-graduate-study/admission-requirements/>), applicants must submit an up-to-date resume.

International applicants may be required to submit an approved English proficiency score and/or course-by-course international transcript evaluation.

All applicants may opt to submit a GMAT or GRE score for consideration. Additional information can be found on the Graduate Studies in Business webpage (<https://business.vcu.edu/prospective-students/graduate/admissions/#sob-content-1801062>).

## Degree requirements

The concentration in data science in business of the Master of Decision Analytics degree program provides students with knowledge of quantitative skills and experience in analyzing problems and using structure and unstructured data for decision-making in a business environment. Students will gain experience in applying analytics methods to business problem settings.

In addition to the VCU Graduate School graduation requirements (<http://bulletin.vcu.edu/academic-regs/grad/graduation-info/>):

- All students must have completed a course in calculus. Students must also be proficient at an intermediate level with a spreadsheet. These prerequisites can be met after admission to the program.
- At the time of application, all undergraduate and graduate transcripts will be reviewed to determine if the following prerequisite courses and/or foundation course may be waived. A waiver may be awarded when a student demonstrates equivalent knowledge, such as completing the required undergraduate equivalent course to the satisfaction of the admission committee.

## Prerequisite undergraduate and/or foundation courses

Prerequisite and/or foundation courses may be waived for students who present satisfactory equivalent preparation at either the undergraduate or graduate level. This determination is made by the faculty adviser at the time of admission.

Course	Title	Hours
<b>Prerequisite undergraduate courses</b>		
SCMA 212	Differential Calculus and Optimization for Business	3
or MATH 200	Calculus with Analytic Geometry I	
SCMA 301	Business Statistics I	3
<b>Foundation course</b>		
SCMA 524	Statistical Fundamentals for Business Management	3

## Curriculum requirements

Course	Title	Hours
<b>Required core courses</b>		
INFO 601	Database Management	3
INFO 645	Prescriptive Analytics	3
INFO 648	Business Data Analytics	3
SCMA 632	Statistical Analysis and Modeling	3
SCMA 642	Decision and Risk Analytics	3
<b>Concentration courses</b>		
INFO 602	Big Data Analytics with Cloud Platforms	3
INFO 617	Text Analytics	3
INFO 664	Information Systems for Business Intelligence	3
<b>Approved Electives</b>		
Select six credits from the following:		6
ACCT 507	Fundamentals of Accounting	
ACCT 608	Managerial Accounting Concepts	
ACCT 620	Accounting Research	
ACCT 621	Accounting Analytics	
ECON 501	Introduction to Econometrics	
ECON 612	Econometrics	
ECON 614	Mathematical Economics	
ECON 641	Econometric Time-series Analysis	
ECON 642	Panel and Nonlinear Methods in Econometrics	
FIRE 520	Financial Concepts of Management	
FIRE 540	Financial Analytics	
FIRE 610	Financial Modeling and Analysis	
FIRE 615	Foundations in Real Estate	
FIRE 621	Cases in Financial Management	
FIRE 622	Financial Intermediation and Analysis of Fixed-income Securities	
FIRE 623	Financial Management	
FIRE 626	Risk Management	
FIRE 627	Real Estate Development	
FIRE 629	Cases in Real Estate	
FIRE 630	Real Estate Valuation	
FIRE 635	Investments and Security Analysis	
FIRE 650	Derivatives	
FIRE 658	Real Estate Finance and Investments	
INFO 611	Data Re-engineering	
INFO 620	Data Communications	
INFO 632	Business Process Re-engineering	
INFO 635	Ethical, Social and Legal Issues in Computer and Information Systems Security	
INFO 636	Securing Cloud Infrastructure	
INFO 637	Introduction to Digital Forensics	
INFO 644	Principles of Computer and Information Systems Security	
INFO 646	Security Policy Formulation and Implementation	
INFO 658	Securing the Internet of Things	

MGMT 642	Business Policy and Strategy
MGMT 655	Entrepreneurship
MGMT 657	Corporate Entrepreneurship
MKTG 671	Marketing Management
MKTG 675	Digital Marketing
MKTG 676	Social Media Research
MKTG 678	Marketing Analytics
MKTG 679	Brand Strategy
SCMA 602	Global Supply Chain Management
SCMA 603	SAP ERP and Supply Chain Management
SCMA 606	Supply Chain Innovation
SCMA 615	Strategic Logistics Management
SCMA 669	Developing and Implementing Forecasting Methods for Business
SCMA 675	Operations Management
SCMA 677	Quality Management and Six Sigma
<b>Total Hours</b>	<b>30</b>

The minimum number of graduate credit hours required for this degree is 30.

**Contact**

Austen Gouldman  
gouldmana@vcu.edu  
(804) 828-4622

**Additional contact**

Graduate Studies in Business  
gsib@vcu.edu  
(804) 828-4622

**Program website:** [business.vcu.edu/academics/supply-chain-management-and-analytics/master-of-decision-analytics-evening-format/](http://business.vcu.edu/academics/supply-chain-management-and-analytics/master-of-decision-analytics-evening-format/)  
(<http://business.vcu.edu/academics/supply-chain-management-and-analytics/master-of-decision-analytics-evening-format/>)