INFORMATION SYSTEMS, MASTER OF SCIENCE (M.S.) WITH A CONCENTRATION IN DATA SCIENCE IN BUSINESS

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

Program goal
The Master of Science in Information Systems program is designed to prepare students for specialized roles using information systems to support organizations. The program is intended to provide a graduate-level, business-technology-oriented curriculum that focuses on the design and development of information systems to solve real-world problems. Graduates of the program are expected to be able to take significant roles in planning, organizing, managing, designing, configuring and implementing systems using state-of-the-art technologies within organizations. This program is available in an online, face-to-face or hybrid format.

The data science in business concentration of the master’s program has an information systems orientation to data science. It is designed to prepare students for specialized roles that involve using information systems concepts, methodologies to effectively and efficiently support knowledge discovery and associated data management activities in modern organizations.

Student learning outcomes
1. Students will be capable of communicating and networking effectively within their profession and within their organizations; serving the profession by applying this knowledge broadly; and maintaining key technical expertise in order to sustain required levels of competitiveness.
2. Students will have an understanding of information technology as it applies to business contexts and the skill to apply this technology effectively in specific circumstances.
3. Students will develop efficient and effective IS solutions using appropriate technologies that can deliver competitive advantages to organizations.
4. Students will understand IT systems management, which includes topics such as system availability; virtualization, change, storage, network, configuration and facilities management; capacity planning; business continuity; and green computing.

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

<table>
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<tr>
<th>Degree:</th>
<th>Semester(s) of entry:</th>
<th>Deadline dates:</th>
<th>Test requirements:</th>
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<tbody>
<tr>
<td>M.S.</td>
<td>Fall</td>
<td>Jul 1</td>
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<td></td>
<td>Spring</td>
<td>Nov 1</td>
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<td>Summer</td>
<td>Mar 1</td>
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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**

Students applying to the Master of Science in Information Systems must show evidence of competence in selected prerequisite areas of information systems including application programming, database, and systems analysis and design. Students enrolled as majors in the program who do not have a formal background or equivalent training must take the appropriate undergraduate courses to satisfy the prerequisites prior to taking master's program courses. Students without an accredited bachelor's degree or post-baccalaureate certificate in fields such as computer science or information systems will likely need to complete undergraduate prerequisite courses. Prerequisites are determined by the faculty adviser at the time of admission.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>INFO 350</td>
<td>Programming</td>
<td>3</td>
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<tr>
<td>INFO 361</td>
<td>Systems Analysis and Design</td>
<td>3</td>
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<tr>
<td>INFO 364</td>
<td>Database Systems</td>
<td>3</td>
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**Curriculum requirements**

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<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>INFO 610</td>
<td>Analysis and Design of Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>INFO 620</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>INFO 630</td>
<td>Systems Development</td>
<td>3</td>
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<tr>
<td>INFO 640</td>
<td>Information Systems Management</td>
<td>3</td>
</tr>
<tr>
<td>INFO 644</td>
<td>Principles of Computer and Information Systems Security</td>
<td>3</td>
</tr>
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**Data science in business concentration electives**

Select four of the following: 12

- INFO 609 Data-centric Analysis/Planning
- INFO 611 Data Re-engineering
- INFO 614 Data Mining
- INFO 616 Data Warehousing
- INFO 617 Text Analytics
- INFO 632 Business Process Re-engineering
- INFO 642 Decision Support and Intelligent Systems

**Approved elective**

Select one of the following: 3

- 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 641 Strategic Information Systems Planning
- INFO 643 Information Technology Project Management

INFO 646 Security Policy Formulation and Implementation
INFO 658 Securing the Internet of Things
INFO 664 Information Systems for Business Intelligence
INFO 691 Topics in Information Systems
INFO 693 Field Project in Information Systems
SCMA 603 SAP ERP and Supply Chain Management
SCMA 632 Statistical Analysis and Modeling
SCMA 645 Advanced Decision Analytics
SCMA 648 Business Data Analytics
SCMA 669 Developing and Implementing Forecasting Methods for Business

Total Hours 30

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

**Accelerated opportunities**

The department offers opportunities for qualified undergraduate students to earn both an undergraduate and graduate degree in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. See the program page in the Undergraduate Bulletin for details.

Contact
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