# MANAGEMENT OF INFORMATION SYSTEMS (MIS)

## 300 Level Courses

**MIS 303:** *Introduction to Business Information Systems.* 3 credits.
Introduces fundamentals of hardware, software, and networking. Emphasizes role of technology in improving contemporary business processes and competitive advantage. Includes basic relational concepts, hands-on experience in building business database applications and decision support using spreadsheet software. Notes: Students cannot receive credit for both MIS 301 and MIS 303. Costello College of Business students will not be permitted to make more than three attempts to achieve a C or higher in MIS 303. The third attempt requires Costello College of Business academic advisor approval. Those who do not successfully complete this course within three attempts will be terminated from their concentration and will not be eligible to receive a degree from the Costello College of Business. For more information about this, see the "Termination from the Concentration" section under Academic Policies.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Mason Core:** Mason Core, Info Tech & Computing (https://catalog.gmu.edu/mason-core/)

**Registration Restrictions:**

Students with a class of Freshman may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the terminated from BC major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 310:** *Database Management Systems.* 3 credits.
Introduces design, implementation and querying relational databases with a focus on business requirements. Theoretical database concepts are accompanied with hands-on experience. Term project includes requirements analysis, design and implementation of a substantial business database application. Notes: Costello College of Business students may not receive credit for both MIS 310 and IT 214. Requires hands-on implementation using software package. A third attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Registration Restrictions:**
**Required Prerequisites:** (MIS 301$^C$ or L301) or MIS 303$^C$, L303 or 303$^{XS}$.
$^C$ Requires minimum grade of C.
$^{XS}$ Requires minimum grade of XS.

Students with a class of Freshman may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the Ineligible to take BUSA crses, Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 320:** *Networks and Security.* 3 credits.
Introduces students to fundamentals of networking technologies and their role in businesses. Emphasis is on understanding the business implications of different networking technologies and solutions. Students learn to identify and understand the business requirements, and bring together the different technological components to design the required communication solutions. Also focuses on the types of security threats to the business network infrastructure, and approach to tackling such threats through business practices combined with appropriate technological solutions. Notes: The course also includes lab work and exercises. A third attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Registration Restrictions:**
**Required Prerequisites:** (MIS 301$^C$ or L301) or MIS 303$^C$, L303 or 303$^{XS}$.
$^C$ Requires minimum grade of C.
$^{XS}$ Requires minimum grade of XS.

Students with a class of Freshman may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 330:** *Systems Analysis and Design.* 3 credits.
Understanding systems analysis and design methods is a necessary skill for contemporary business analysts, managers, software engineers and system users. Provides students with the foundations for effectively using modern systems analysis and design tools and methodologies for developing modern software and applications. Topics include systems planning and feasibility analysis, requirements analysis, economics, systems design and project management. Notes: Requires team project. A third attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Mason Core:** Mason Core, Writing Intensive in Major (https://catalog.gmu.edu/mason-core/)

**Registration Restrictions:**
**Required Prerequisites:** MIS 310$^C$, 310$^{XS}$, IT 214$^C$ or 214$^{XS}$.
$^C$ Requires minimum grade of C.
$^{XS}$ Requires minimum grade of XS.

Students with a class of Freshman may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 341:** *Cloud Computing Essentials.* 3 credits.
Explores the adoption, applications, benefits, deployment, economics, models, risks, services, strategy, and values of the cloud computing from the business and managerial perspective. Surveys the cloud technology, introduces the characteristics and service models of cloud computing, and examines the impact and value of cloud computing. Students will gain the knowledge of the cloud computing principles and concepts needed to evaluate, adopt, deploy, and manage cloud environments. A third attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Registration Restrictions:**
**Required Prerequisites:** (MIS 303$^C$, L303 or 303$^{XS}$) or (MIS 301$^C$ or L301).
$^C$ Requires minimum grade of C.
$^{XS}$ Requires minimum grade of XS.

Students with a class of Freshman may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 350:** *Introduction to Programming for Business Applications.* 3 credits.
This course covers design and implementation of computer programs (Java) to solve business problems using structured and object-oriented programming techniques. Students become familiar with program development life cycle using Java supported by a modern development environment. Students complete assignments involving problem solving and development of business application. A third attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Registration Restrictions:**
**Required Prerequisites:** ((MIS 303$^C$ or L303) or (MIS 301$^C$ or L301)).
$^C$ Requires minimum grade of C.

Students with a class of Freshman may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

## 400 Level Courses

**MIS 410:** *Advanced Database Systems.* 3 credits.
Covers advanced database development and administration topics including triggers, stored procedures, indexes, performance tuning, and security. Students will use a state-of-the-art industrial strength database management system as a tool to familiarize themselves with database concepts. Students will conduct exercises on business reporting using databases and front-end applications. A third attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Registration Restrictions:**

**Required Prerequisites:** MIS 310$^C$, 310$^{XS}$, IT 214$^C$ or 214$^{XS}$.
$^C$ Requires minimum grade of C.
$^{XS}$ Requires minimum grade of XS.

Students with a class of Freshman may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 412:** *E-Business Systems Development.* 3 credits.
Introduces students to the development of web-based information systems for E-business. Students learn to develop web-based database applications for eCommerce. Also covers Web 2.0 technologies and contemporary business trends and issues related to web application development. Emphasizes technologies, methods, and application development tools. Notes: Requires team project and computer lab. A third attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Registration Restrictions:**
**Required Prerequisites:** (MIS 301$^C$ or L301) or MIS 303$^C$, L303 or 303$^{XS}$.
$^C$ Requires minimum grade of C.
$^{XS}$ Requires minimum grade of XS.

Students with a class of Freshman may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 415:** *Information Systems Audit and Control.* 3 credits.
Covers IT governance, controls, auditing applications, systems development, and operations. It examines trends and define recent advances in technology that impact IT controls and audits - including cloud computing, web-based applications, and server visualizations. It covers IT strategy, business value of IT, as well as controls for IT projects, outsourcing, contracts, cloud computing, etc. A third attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Registration Restrictions:**
**Required Prerequisites:** MIS 301$^C$, L301$^C$, 303$^C$, L303$^C$ or 303$^{XS}$.
$^C$ Requires minimum grade of C.
$^{XS}$ Requires minimum grade of XS.

Students with the Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 420:** *Information Security and Assurance.* 3 credits.
Covers technical concepts, and managerial and policy topics in information and cyber security. Lectures, reading, in-class presentations, hands-on exercises, and examinations ensure that students have sufficient technical awareness and managerial competence related to information security and assurance. Examines the nature of threats and vulnerabilities, cryptography, software vulnerabilities, managing risk, and security controls. A third attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Registration Restrictions:**
**Required Prerequisites:** MIS 320$^C$ or 320$^{XS}$.
$^C$ Requires minimum grade of C.
$^{XS}$ Requires minimum grade of XS.

Students with the Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 430:** *Data Warehousing.* 3 credits.
Deals with the challenges faced by businesses in managing large amounts of data and making meaningful use of this data for informed decision making. Introduces students to data warehousing fundamentals, practices, and technologies; and their application to solving business problems. Specific emphasis is on designing of data warehouse to meet the business requirements and hands-on learning of the design principles through implementation on commercially used data warehouse technologies. Also introduces students to OLAP solutions and data mining approaches to supporting business decision making. Notes: Term project required. A third attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Registration Restrictions:**
**Required Prerequisites:** (MIS 310$^C$, L310, 310$^{XS}$, IT 214$^C$ or 214$^{XS}$).
$^C$ Requires minimum grade of C.
$^{XS}$ Requires minimum grade of XS.

Students with a class of Freshman may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the Ineligible to take BUSA crses, Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 431:** *Data Mining for Business Applications.* 3 credits.
This course covers data mining methods and tools for business analytics to improve managerial decision making. The objective is to understand data mining methods and their suitability for decision making in a variety of business domains. The students will learn how to apply appropriate analytical tools to gain useful insights from real-life datasets. A third

attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Mason Core:** Mason Core, Writing Intensive in Major (https://catalog.gmu.edu/mason-core/)

**Registration Restrictions:**
**Required Prerequisites:** (MIS 301$^C$, L301$^C$, 303$^C$, 303$^{XS}$ or L303$^C$) and (BUS 310$^C$, 310$^{XS}$ or OM 210$^C$).
$^C$ Requires minimum grade of C.
$^{XS}$ Requires minimum grade of XS.

Non-Degree level students may **not** enroll.

Students with the Ineligible to take BUSA crses, Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 432:** *Advanced Data Mining.* 3 credits.
This course covers business analytics using advanced data mining methods for developing predictive models. It includes feature selection to identify dimensions for constructing decision making models. More advanced techniques such as decision trees, neural networks, and other classification and prediction methods will be covered. Emphasis on applications will include hands-on experience using commercial data mining software and real business data. A third attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Registration Restrictions:**
**Required Prerequisites:** (MIS 431$^C$ or 431$^{XS}$).
$^C$ Requires minimum grade of C.
$^{XS}$ Requires minimum grade of XS.

Students with the Ineligible to take BUSA crses, Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 433:** *Programming for Analytics.* 3 credits.
This course will introduce students to solving a broad set of data analysis problems using the popular programming language Python. It will cover basic Python skills and data structures, how to load data from different sources, rearrange and aggregate it, and finally how to analyze and visualize it. The course will also introduce students to several Python libraries. A third attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Registration Restrictions:**
**Required Prerequisites:** BUS 310$^C$ or 310$^{XS}$.
$^C$ Requires minimum grade of C.
$^{XS}$ Requires minimum grade of XS.

Students with a class of Freshman may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the Ineligible to take BUSA crses, Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 441:** *Cloud System Management.* 3 credits.
Explores managing cloud platforms and deploying applications on cloud platforms from the business and managerial perspective. Students learn to operate, monitor, and manage cloud computing systems, such as Amazon Web Services (AWS), as well as deploy and scale applications in cloud environments. A third attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Registration Restrictions:**
**Required Prerequisites:** MIS 341$^C$ or 341$^{XS}$.
$^C$ Requires minimum grade of C.
$^{XS}$ Requires minimum grade of XS.

Students with a class of Freshman may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 462:** *Honors Seminar in Management Information Systems (Topic Varies).* 3 credits.
Topic and format vary. In-depth study of a topic in the area of information technology management. Enrollment limited and competitive. A third attempt will require academic advisor approval.Offered by Information Sys and Ops Mngmnt. Limited to two attempts.
**Specialized Designation:** Topic Varies

**Recommended Corequisite:** Permission of department.

**Registration Restrictions:**
Students with a class of Freshman or Sophomore may **not** enroll.

Non-Degree or Washington Consortium level students may **not** enroll.

Students with the Ineligible to take BUSA crses, Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 491:** *Seminar in Management Information Systems.* 3 credits.
Analyzes selected topics that highlight latest developments in information resource management field, including contemporary research findings and case studies of information systems in business and other organizations.Offered by Information Sys and Ops Mngmnt. May be repeated within the term for a maximum 6 credits.
**Specialized Designation:** Topic Varies

**Registration Restrictions:**
**Required Prerequisites:** (MIS 301$^C$ or L301) or MIS 303$^C$, L303 or 303$^{XS}$.
$^C$ Requires minimum grade of C.
$^{XS}$ Requires minimum grade of XS.

Students with a class of Freshman may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Seminar

**Grading:**
This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 492:** *Internship in Management Information Systems.* 3 credits.
Opportunity to gain practical, professional experience in conjunction with academic development. An internship is an important part of academic and career preparation. May be used as elective credit. Notes: No more than 6 credits of Costello College of Business internship coursework (BUS 492 or MIS 492) can be applied towards a student's 120 (BU) degree applicable credits. Students must receive departmental approval in order to register for this course; please contact the Costello College of Business Office of Career Services for internal eligibility requirements.Offered by Information Sys and Ops Mngmnt. May be repeated within the degree for a maximum 6 credits.
**Recommended Prerequisite:** 75 credit hours

**Registration Restrictions:**
**Required Prerequisites:** (MIS 301$^{B-}$ or 303$^{B-}$) and (OM 301$^{B-}$ or 303$^{B-}$).
$^{B-}$ Requires minimum grade of B-.

Students with a class of Freshman or Sophomore may **not** enroll.

Non-Degree level students may **not** enroll.

Students with the Ineligible to take BUSA crses, Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Internship

**Grading:**
This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 499:** *Independent Study in Management Information Systems.* 1-3 credits.
Research and analysis of selected problems or topics in information resource management.Offered by Information Sys and Ops Mngmnt. May be repeated within the term for a maximum 6 credits.
**Specialized Designation:** Topic Varies

**Registration Restrictions:**
**Required Prerequisites:** (MIS 301$^C$) or MIS L303$^C$.
$^C$ Requires minimum grade of C.

Students with a class of Freshman may **not** enroll.

Non-Degree or Washington Consortium level students may **not** enroll.

Students with the Ineligible to take MIS crses, terminated from BC major or terminated from ISOM major attributes may **not** enroll.

**Schedule Type:** Independent Study

**Grading:**
This course is graded on the Undergraduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

## 700 Level Courses

**MIS 721:** *Seminar in Information Systems.* 1.5 credit.
This course is designed to expose doctoral students to academic research in information systems.Offered by Information Sys and Ops Mngmnt. May not be repeated for credit.
**Registration Restrictions:**
Enrollment is limited to students with a major in Business.

Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 722:** *Seminar in Economics of Information Systems.* 3 credits.
This course is designed to expose doctoral students to a broad foundation in economics of information systems research.Offered by Information Sys and Ops Mngmnt. May not be repeated for credit.
**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

**MIS 723:** *Seminar in Technology Research in Information Systems.* 3 credits.
This course is designed to expose doctoral students to a broad foundation of technology in information systems research.Offered by Information Sys and Ops Mngmnt. May not be repeated for credit.
**Registration Restrictions:**
Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)

## 800 Level Courses

**MIS 892:** *Special Topics in Information Systems.* 3 credits.
This course is designed to expose doctoral students to a specialized topic within the information systems field through theoretical, quantitative and empirical work in the topic area.Offered by Information Sys and Ops Mngmnt. May be repeated within the degree for a maximum 9 credits.
**Specialized Designation:** Topic Varies

**Registration Restrictions:**

Enrollment is limited to Graduate level students.

**Schedule Type:** Lecture

**Grading:**
This course is graded on the Graduate Regular scale. (https://catalog.gmu.edu/policies/academic/grading/)