

# INFORMATION SYSTEMS AND OPERATIONS MANAGEMENT, BS

**Banner Code:** BU-BS-ISOM

## Academic Advising

Phone: 703-993-1880

Email: masonbus@gmu.edu

## Administration

- Amitava Dutta, Chair, Information Systems and Operations Management Area

The BS in Information Systems and Operations Management (ISOM) prepares students with the skills to analyze and leverage information systems and operational processes to address real-world problems and opportunities. The curriculum highlights the interaction of technology, processes and people, helping students gain an understanding of these components and their impact on business value. ISOM graduates apply this knowledge of information technology and operations management to analyze, design, and improve business processes through better information systems design and implementation, and associated project management. Further, ISOM graduates deliver seamless technology-enabled solutions for improving organizational processes and supply chains by integrating different business functions, collaborating with business units in defining requirements, identifying new IT-driven business opportunities, prototyping the solutions, and managing complex projects. ISOM majors also have opportunities to pursue specialized elective tracks in operations, supply chain management, business analytics, and information security.

## Admissions & Policies

### Policies

#### Academic Policies

Students should become familiar with the university's general academic policies in addition to those specific to each academic unit.

#### E-mail

George Mason University uses only Mason e-mail accounts to communicate with enrolled students. Students should activate their Mason e-mail, use it to communicate with their school/department/program and other administrative units, and check it regularly for important information.

#### Study Elsewhere Policy

A student who has matriculated at Mason may transfer a limited number of hours (9 for undergraduates, 6 for graduates) of coursework in School of Business disciplines from another institution (not including registration through the Consortium of Universities of the Washington Metropolitan Area or coursework completed through the Center for Global Education). Students are permitted to take courses elsewhere under unusual circumstances—these circumstances do not include scheduling or commuting convenience, or financial (lower cost) reasons.

Special instructions for School of Business students: courses that are attempted at a two-year institution may not be used to fulfill upper-level requirements. Any course that a student wished to transfer to fulfill major or graduate-level course requirements in the School of Business must

be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

For additional information, see AP1.4.2 Permission to Study Elsewhere.

### Undergraduate Internship Policy

The School of Business recognizes the importance of experiential education in both learning to apply theory to practice and positioning students for success in their careers. Because the School of Business is committed to supporting students' professional success, the School requires that all student internships for credit be registered with the School of Business as either BUS 492 Undergraduate Internship or ACCT 492 Internship in Accounting. Students may enroll in a maximum of 6 credits for these courses. For students in catalog years Fall 2016 and beyond, one internship course may apply to the major, and a second internship course would apply as elective credit. For students in catalog years prior to Fall 2016, a maximum of 6 credits of internship may apply to general electives.

### Termination from the Major

A grade of C or higher is required in each of the School of Business listed core courses. Students will not be permitted to make more than three attempts to achieve a C or higher in the following School of Business core courses: ACCT 303 Accounting for Decision Making or ACCT 330 Financial Accounting I, BULE 303 Legal Environment of Business, BUS 303 Develop Professional Skills II: Advanced Elements, FNAN 303 Financial Management, MGMT 303 Principles of Management, MIS 303 Introduction to Business Information Systems (Mason Core), MKTG 303 Principles of Marketing and OM 303 Operations Management. Once a student has attempted a School of Business Core or Accounting major course twice unsuccessfully, they must meet with an academic advisor in order to receive an override to register for the third attempt. Those who do not successfully complete these core courses within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students terminated from the School of Business are permitted to declare a business minor. For more information about this, see AP5.2.4 Termination from the Major.

### University Consortium

Students should review university policies regarding the University Consortium under Special Registration Procedures in the Academic Policies section of this catalog. Students who have attempted or failed a course at Mason are not permitted to take the equivalent course through the consortium under any circumstance. All consortium registration requests must be submitted to the dean's office at least 3 weeks prior to the first day of classes for the relevant semester at Mason.

Any consortium course that a student wishes to register for to fulfill major or graduate-level course requirements in the School of Business must be attempted at an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB).

### Non-Business School Student Credit Limitation

Enrolled undergraduate students who are not declared in a School of Business major are limited to 9 credits of upper-level business coursework within the School of Business. This policy applies to any student who is declared in another major or program at Mason and

includes students enrolled in the School of Integrative Studies and the Bachelor of Individualized Study programs. This policy does not apply to students who have declared a School of Business minor and are earning required credit toward that minor.

## Undergraduate Course Overload Policy

The School of Business recommends that undergraduate students attempt no more than 18 credits in an academic semester and no more than 14 credits in a summer term. Students wishing to attempt more than 18 credits must submit a Permission to Overload form to their academic advisor.

To be eligible for a course overload, a student must fulfill all of the following criteria:

- At least a 3.0 cumulative GPA at Mason
- Have completed all courses successfully in his/her previous semester with no Fs or incompletes (IN)
- Complete the Permission to Overload form and obtain an academic advisor's signature

Freshmen and transfer students in their first semesters are not given permission for overloads as they have yet to establish an academic record at George Mason University.

If approved for an overload, the student is responsible for adding the additional class(es) and paying for the related tuition by the official university deadlines.

## Appeals Process

The School of Business strives to maintain policies and procedures that are consistent with those of the University, as well as in the best interest of our students. If you have any questions concerning a particular policy or procedure, contact the Office of Student Success & Academic Services, Room 008 of Enterprise Hall (703-993-1880) or visit the website (<http://business.gmu.edu>).

## Courses Excluded from any School of Business BS Degree

Transfer credit is not awarded for any School of Business courses completed more than ten years prior to Mason enrollment.

Code	Title	Credits
SWE 401	Internship Reflection	1
MUSI 394	Ethnomusicology Internship	1-4
COMM 450	Internship in Communication	3
FAVS 450	Internship in Film and Video Studies	3
GOVT 480	Internship	3
MUSI 496	Internship	2-6
CONF 370	Internship Field Experience	1-9
PHIL 306	Philosophy Internship	3
RELI 426	Religious Studies Internship	3
ARTH 393	Art History Internships	3-6
GCH 498	Global and Community Health Internship	3,6
GAME 491	Internship	3-4
HAP 498	Health Administration Internship (Mason Core)	4
HDFS 499	Advanced Internship Analysis in Human Development and Family Science	3

EVPP 494	Internship	1-3
ENGH 459	Internship	1-3
MUSI 395	Teaching Internship	1-4
INTS 290	Internship	1-6
INTS 390	International Internship	1-6
INTS 490	Internship	1-6
ECON 498	Internship	3-6
ASTR 409	Astronomy Internship	3
SPMT 490	Internship (Mason Core)	12
TOUR 490	Hospitality, Tourism, and Events Management Internship (Mason Core)	12
CLIM 409	Research Internship	3
CHIN 490	Internship in Chinese Studies	1-9
CONS 498	Internship	1-3
THR 455	Theater Education Internship	6-12
AFAM 490	Internship	2-6
KINE 490	Kinesiology Internship III (Mason Core)	12
AMGT 489	Internship in Arts Management	1-4
HDFS 498	Internship and Analysis in Human Development and Family Science	3
ANTH 495	Internship	1-6
PRLS 490	Recreation Management Internship (Mason Core)	12
GGG 480	GGG Internship	1-3
SPAN 490	Internship in Spanish	1-6
AVT 489	Internship in Art and Visual Technology	1-6
USST 490	Internship	3
WMST 400	Internship in Women and Gender Studies	1-3
CDS 491	Internship	1-3
HHS 480	Research Internship in Health and Human Services	3
CRIM 480	Internship	6-12
HIST 399	Internship	1-9
RHBS 490	RS: Clinical Research Internship	3
LAS 490	Internship	1-6
HAP 480	Research Internship in Health and Human Services	3
KINE 341	Kinesiology Internship I	3
SOCW 480	Research Internship in Health and Human Services	3
MUSI 495	Internship in Music Education (Mason Core)	6-12
KINE 441	Kinesiology Internship II	3
PHYS 409	Physics Internship	3
HHS 492	RS: Internship in Clinical Research	3
SOCI 416	Internship in Sociology	1-6
FRLN 490	Internship in Foreign Language Studies	1-6
ENGR 395	Engineering Internship	3
GEOL 480	Internship	1-3
AVT 453	Professional Practices	3
CVPA 489	Field Experience in the Arts	3-6
GLOA 495	Global Experiential Learning	1-18
KINE 330	Seminar in Kinesiology	3

ECED 490	Internship in Early Childhood Education	1-6
FRSC 406	Forensic Internship	3

## Requirements

### Degree Requirements

Total credits: 120

School of Business students pursuing a BS degree must complete a minimum of 120 credits, including the Mason Core requirements, business foundations, business core and major requirements. In addition, the following requirements must be met:

- A minimum of 45 credits at the 300- or 400-level.
- A minimum of 30 credits of School of Business core and major courses at Mason.
- At least 9 credits required for the specific major and BUS 498 Capstone Course: Advanced Business Models (Mason Core) taken at Mason.
- A grade of C or higher earned in the business foundations, business core and major requirements.

Students should carefully examine prerequisites for School of Business courses. Students may be removed from a course if they enroll without having fulfilled the prerequisites.

### Mason Core Requirements

School of Business students must complete the Mason Core requirements, plus 1 additional credit of natural science (the School of Business natural science requirement must be fulfilled by completing two 4-credit laboratory sciences). Some Mason Core requirements may already be fulfilled by the major requirements listed below. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core requirements.

Code	Title	Credits
<b>Foundation Requirements</b>		
	Written Communication	6
	Oral Communication	3
<b>Core Requirements</b>		
	Arts	3
	Literature	3
	Natural Science <sup>1</sup>	8
	Western Civilization/World History	3
Total Credits		26

<sup>1</sup> School of Business students required to complete 8 credits of natural science by completing two 4-credit laboratory sciences.

Note:

Remaining Mason Core requirements are fulfilled with major coursework.

### Business Foundations

Code	Title	Credits
ACCT 203	Survey of Accounting	3
or ACCT 204	Honors Survey of Accounting	
BUS 100	Business and Society (Mason Core)	3

BUS 103	Develop Professional Skills I: Foundational Elements	3
BUS 200	Global Environment of Business (Mason Core)	3
BUS 210	Business Analytics I	3
BUS 310	Business Analytics II	3
ECON 103	Contemporary Microeconomic Principles (Mason Core)	3
ECON 104	Contemporary Macroeconomic Principles (Mason Core)	3
Select one from the following: <sup>1</sup>		3-4
MATH 108	Introductory Calculus with Business Applications (Mason Core)	
MATH 113	Analytic Geometry and Calculus I (Mason Core)	
MATH 114	Analytic Geometry and Calculus II	
HNRT 225	Applied Calculus	
Total Credits		27-28

<sup>1</sup> MATH 108 Introductory Calculus with Business Applications (Mason Core) or MATH 113 Analytic Geometry and Calculus I (Mason Core) satisfies the Mason Core quantitative reasoning requirement.

### Business Core

A grade of C or higher is required in each of the School of Business listed core courses.

Code	Title	Credits
ACCT 303	Accounting for Decision Making <sup>1</sup>	3
or ACCT 330	Financial Accounting I	
BULE 303	Legal Environment of Business <sup>1</sup>	3
BUS 303	Develop Professional Skills II: Advanced Elements <sup>1</sup>	3
FNAN 303	Financial Management <sup>1</sup>	3
MGMT 303	Principles of Management <sup>1</sup>	3
MIS 303	Introduction to Business Information Systems (Mason Core) <sup>1</sup>	3
MKTG 303	Principles of Marketing <sup>1</sup>	3
OM 303	Operations Management <sup>1</sup>	3
Total Credits		24

<sup>1</sup> Students will not be permitted to make more than three attempts to achieve a C or higher in this course. Those who do not successfully complete these core courses within three attempts will be terminated from their major and will not be eligible to receive a degree from the School of Business. Students terminated from the School of Business are prohibited from enrolling in any School of Business course. Students terminated from the School of Business are permitted to declare a business minor. For more information about this, see AP.5.2.4 Termination from the Major.

### General Electives

Code	Title	Credits
Select 18-19 credits <sup>1</sup>		18-19
Total Credits		18-19

<sup>1</sup> General electives may be selected from any University or School of Business course, except courses designated for the Business minor (MBUS). Credits awarded as Associate Degree Elective Credit (ADEC) as part of a student's transfer evaluation are also excluded from general electives.

## Major Requirements in Information Systems and Operations Management

Code	Title	Credits
<b>Required Courses</b>		
MIS 310	Database Management Systems	3
MIS 330	Systems Analysis and Design	3
OM 493	Management of Technology Projects	3
<b>Electives</b>		
Select 12 credits from the following list to fulfill the elective requirement as well as any other 300-400 level MIS or OM courses <sup>1</sup>		12
MIS 302	Introduction to Programming for Business Applications <sup>2</sup>	
MIS 320	Networks and Security	
MIS 410	Advanced Database Systems	
MIS 412	E-Business Systems Development	
MIS 415	Information Systems Audit and Control	
MIS 420	Information Security and Assurance	
MIS 430	Data Warehousing	
MIS 431	Data Mining for Business Applications	
MIS 432	Advanced Data Mining	
MIS 462	Honors Seminar in Management Information Systems (Topic Varies)	
MIS 491	Seminar in Management Information Systems	
MIS 499	Independent Study in Management Information Systems	
OM 320	Supply Chain Management in a Global Economy	
OM 352	Management Science	
OM 435	Business Process Analysis and Simulation	
OM 452	Business Forecasting	
OM 456	Quality Management	
OM 462	Honors Seminar in Operations Management (Topic Varies)	
OM 499	Independent Study in Operations Management	
BUS 492	Internship in Business	
Total Credits		21

<sup>1</sup> Excluding MIS 301 Introduction to Business Information Systems or MIS 303 Introduction to Business Information Systems (Mason Core) or OM 301 Operations Management or OM 303 Operations Management

<sup>2</sup> It is strongly recommended that students planning to major in ISOM take MIS 302 Introduction to Programming for Business Applications as part of their program.

## Optional Concentrations

Students have considerable flexibility in their choice of electives and may choose from two concentrations of study: one in Operations and Supply Chain Management (OSCM) and the other in Management Information Systems (MIS). Students are strongly urged to discuss their choice of electives and programs of study with their academic advisor and an ISOM faculty member. Concentrations must be declared prior to a student filing an intent to graduate.

### Concentration in Operations and Supply Chain Management (OSCM)

If a student has taken any four of the following electives, beyond the ISOM required courses, s/he can declare an OSCM concentration.

Code	Title	Credits
Select four courses from the following:		
OM 320	Supply Chain Management in a Global Economy	3
OM 352	Management Science	3
OM 435	Business Process Analysis and Simulation	3
OM 452	Business Forecasting	3
OM 456	Quality Management	3
OM 462	Honors Seminar in Operations Management (Topic Varies)	3
OM 491	Seminar in Operations Management	3

### Concentration in Management Information Systems (MIS)

If a student has taken any four of the following electives, beyond the ISOM required courses, he/she can declare an MIS concentration.

Code	Title	Credits
Select four courses from the following:		
MIS 302	Introduction to Programming for Business Applications	3
MIS 320	Networks and Security	3
MIS 410	Advanced Database Systems	3
MIS 412	E-Business Systems Development	3
MIS 415	Information Systems Audit and Control	3
MIS 420	Information Security and Assurance	3
MIS 430	Data Warehousing	3
MIS 431	Data Mining for Business Applications	3
MIS 432	Advanced Data Mining	3
MIS 462	Honors Seminar in Management Information Systems (Topic Varies)	3
MIS 491	Seminar in Management Information Systems	3

## Capstone

Students must successfully complete all Business Core courses to be eligible to enroll in BUS 498 Capstone Course: Advanced Business Models (Mason Core).

Code	Title	Credits
BUS 498	Capstone Course: Advanced Business Models (Mason Core)	3
Total Credits		3

## Second Majors in Information Systems and Operations Management

Students declaring a second major in Information Systems and Operations Management must complete the three required courses and three elective courses for the major.

### Honors

### Honors in the Major

The School of Business Information Systems and Operations Management Honors Program provides highly motivated students majoring in ISOM with an enriched academic experience integrating curricular, co-curricular and extra-curricular development. Admission to the Honors Program is by invitation only. Students who have been found responsible for an Honor Code violation are not eligible for the program.

#### Admission Requirements

- Minimum 3.0 cumulative GPA and 3.5 GPA in the ISOM major.
- Two academic/professional references.
- Once admitted to the program, students with a cumulative GPA below 3.0 will be dropped from the program.

#### Curricular Requirements

- MIS 303 Introduction to Business Information Systems (Mason Core) earning a grade of A- or better.
- OM 303 Operations Management earning a grade of A- or better.
- A grade of B or better in Business Core curriculum courses:

Code	Title	Credits
ACCT 303 or ACCT 330	Accounting for Decision Making Financial Accounting I	3
BULE 303	Legal Environment of Business	3
BUS 303	Develop Professional Skills II: Advanced Elements	3
FNAN 303	Financial Management	3
MGMT 303	Principles of Management	3
MKTG 303	Principles of Marketing	3

- One of the two ISOM Honors seminars: MIS 462 Honors Seminar in Management Information Systems (Topic Varies) or OM 462 Honors Seminar in Operations Management (Topic Varies).

#### Extra-Curricular Requirements

- The student must show a high degree of engagement in MISOMA or another School of Business student organization, preferably in a leadership role.

#### Requirements for the Honors Designation:

- Honors students must graduate with a minimum 3.00 cumulative GPA and 3.50 GPA in the major.
- Honors students must meet all curricular and extra-curricular requirements mentioned previously at graduation.