

# APPLIED SCIENCE, BAS

Banner Code: UN-BAS-APLS

## Administration

- Janette Kenner Muir, PhD, Academic Director and Vice Provost for Academic Affairs
- Krystal Dains, Director
- Marcy Lewis Glover, Curriculum Coordinator
- Kelly Dunne, Coordinator, School of Integrative Studies concentration
- Brian Gillette, Coordinator, College of Health and Human Services concentration
- Jane Walker, Coordinator, School of Conflict Analysis and Resolution concentration

The Bachelor of Applied Science (BAS) is an undergraduate liberal arts degree program for students who hold an Associate of Applied Science (AAS) degree. It is designed primarily to deepen student knowledge in an academic area and foster critical thinking, analytic reasoning, and an ability to synthesize information.

An Associate of Applied Science (AAS) degree is required for admission, providing a streamlined path to completion of traditional academic requirements leading to the baccalaureate degree. BAS meets students' professional and personal goals while developing a depth of knowledge and proficiency of skill that translates well to the workplace. Several concentrations offer Bachelor's/Accelerated Master's options.

## Admissions & Policies

### Admissions

As a prerequisite to enrollment in the BAS, students must have received an Associate of Applied Science (AAS) degree from an accredited two-year institution in an approved area of specialization. Students should review specific Admissions details on the program's website. (<http://bas.gmu.edu>)

### Policies

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies (<http://catalog.gmu.edu/policies/academic/undergraduate-policies/>).

### Change of Major

Mason students considering a change of major to BAS must hold an Associate of Applied Science (AAS) degree related to the BAS concentration of choice, and must have a Mason GPA of 2.50 or higher. Students who have been terminated from a College of Engineering and Computing (CEC) or School of Business major may be unable to declare BAS as a major, since terminated students are not eligible to take CEC/School of Business courses.

### Program Requirements

BAS students must fulfill all requirements for bachelor's degrees including Mason Core (<http://catalog.gmu.edu/mason-core/>) requirements, to include 45 credits of upper-level coursework. All Mason Core (<http://catalog.gmu.edu/mason-core/>) requirements

must be met with either George Mason courses or transferrable equivalents.

The minimum credit requirement for a bachelor's degree is 120 credits; however, while there is some variation between concentration areas, fulfilling all Mason Core (<http://catalog.gmu.edu/mason-core/>) requirements and an academic concentration is likely to require most BAS students to complete at least 63-66 credits at George Mason, which may lead to over 120 credits of coursework in order to receive the degree.

Admitted BAS students will be academically advised by the appropriate BAS Program concentration advisor to plan their course of study including completion of the Mason Core (<http://catalog.gmu.edu/mason-core/>), the BAS concentration, and any remaining requirements. See [t](http://bas.gmu.edu) (<http://bas.gmu.edu>)he website (<http://bas.gmu.edu>) for more information.

The degree plan outlined is based on a student who transfers in a minimum of 30 credits from a completed AAS degree. Some of these credits may count only towards the elective requirement within the BAS degree.

Specific concentrations may have additional policies indicated in the Requirements tab.

## Requirements

### Degree Requirements

Total credits: 120-126

Concentrations are intended to provide focus for the BAS curriculum in an area relevant to the student's AAS degree while allowing for the breadth of study associated with a liberal arts baccalaureate degree. Please note that determination of current transfer work for these concentrations may impact course requirements.

In addition to satisfying all Mason Core (<http://catalog.gmu.edu/mason-core/>) requirements, students must satisfy the requirements for one of the eight concentrations.

### Concentrations

- Concentration in Applied Conflict Analysis and Resolution (ACAR)
- Concentration in Cyber Security (CYBS)
- Concentration in Cloud Computing (CCG)
- Concentration in Data Analytics (DNIC)
- Concentration in Health, Wellness and Social Services (HWSS)
- Concentration in Legal Studies (LGSL)
- Concentration in Managerial Leadership (MGL)
- Concentration in Technology and Innovation (TCNV)

### Concentration in Applied Conflict Analysis and Resolution (ACAR)

This concentration is in collaboration with the Jimmy and Rosalynn Carter School for Peace and Conflict Resolution (<http://catalog.gmu.edu/colleges-schools/peace-conflict-resolution/>).

Code	Title	Credits
<b>Core Requirement</b>		
BAS 300	Building Professional Competencies	3
CONF 101	Conflict and Our World (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
CONF 301	Research and Inquiry in Conflict Resolution	3
CONF 302	Culture, Identity, and Conflict	3
Select one of the following		3
CONF 320	Interpersonal Conflict Analysis and Resolution	
CONF 330	Community, Group, and Organizational Conflict Analysis and Resolution	
CONF 340	Global Conflict Analysis and Resolution (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
<b>Applied Coursework</b>		
CONF 300	Conflict Resolution Techniques and Practice	3
Choose three credits of Skills Coursework from:		3
CONF 325	Dialogue and Difference	
CONF 370	Internship Field Experience	
CONF 385	International Field Experience	
CONF 398	Special Topics in Advanced Techniques and Practices	
CONF 425	Mediating Conflict	
or foreign language completed at the 202 level.		
CONF 490	RS: Integration (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
<b>Electives</b>		
In consultation with their advisor, students are required to take 18 credits of concentration coursework; at least 9 credits must be from the CONF department. The concentration list can be found in the catalog or on our website.		18
Total Credits		42

### Electives (variable)

All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.

### Concentration in Cyber Security (CYBS)

This concentration is in collaboration with the College of Engineering and Computing (<https://cec.gmu.edu/>) and is only available to students who graduate with an AAS degree in Cyber Security from a partner school. Full admissions requirements can be viewed on the program website (<http://bas.gmu.edu>).

Students must have a C or better in any course that satisfies a prerequisite for an IT course. To graduate with the BAS with a Cyber Security concentration, students must have a C or better in their core, concentration, and technical focus courses.

Code	Title	Credits
<b>Core Requirements</b>		
BAS 300	Building Professional Competencies	3
BAS 490	Introduction to Research Methods	3
or BAS 492	Capstone Development	
BAS 491	Applied Sciences Capstone (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
or BAS 493	BAS Capstone	
<b>Concentration Requirements</b>		
IT 104	Introduction to Computing (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
IT 105	IT Architecture Fundamentals	3
IT 223	Information Security Fundamentals	3
IT 304	IT in the Global Economy	3
IT 343	IT Project Management (Fulfills writing intensive requirement)	3
IT 353	Information Defense Technologies	3
IT 357	Computer Crime, Forensics, and Auditing	3
IT 429	Security Accreditation of Information Systems	3
<b>IT &amp; Cyber Security Transfer Courses</b>		<b>21-36</b>
Specific courses taken at the community college fulfill this requirement. Students should consult with their advisor. The credits awarded vary, depending on coursework taken at the community college.		
<b>Technical Focus</b>		
Select 15 credit hours of required IT, MBUS, MIS, or other approved coursework from the following. Courses not listed here may be selected in consultation with the advisor. Not all Technical Focus courses listed here are offered online. Students pursuing CYBS online should meet with their advisor to select courses that are offered online. Note: Enrolled undergraduate students who are not declared in a School of Business major are limited to 9 credits of MIS courses.		15
IT 369	Data and Application Security	
IT 425	Election Security	
IT 442	Cloud Infrastructure	
IT 451	Cloud Services Management	
IT 462	Applied Cyber Threat Analysis	
IT 481	Cloud Security	
IT 499	Special Topics in Information Technology	
MBUS 300	Accounting in a Global Economy	
MBUS 304	Entrepreneurship: Starting and Managing a New Enterprise	
MBUS 305	Introduction to International Business (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
MBUS 306	Managing Projects and Operations	
MBUS 308	Corporate Finance and Investments in a Global Economy	
MGMT 303	Principles of Management	
MIS 303	Introduction to Business Information Systems (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
MIS 310	Database Management Systems	

MIS 320	Networks and Security
MIS 330	Systems Analysis and Design
MIS 341	Cloud Computing Essentials
MIS 441	Cloud System Management
MKTG 303	Principles of Marketing
HAP 318	Introduction to IT Methods for Healthcare
HAP 360	Introduction to Health Information Systems
COMM 320	Business and Professional Communication
CRIM 310	Introduction to the Intelligence Community
CRIM 312	Intelligence Analysis Techniques
CRIM 350	Counterintelligence
<hr/>	
Total Credits	69-84

### Electives (variable)

All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.

### Concentration in Cloud Computing (CCG)

This concentration is in collaboration with the School of Business (<http://catalog.gmu.edu/colleges-schools/business/>) and the College of Engineering and Computing (<http://catalog.gmu.edu/colleges-schools/engineering-computing/>) and is only available to students who graduate with an AAS degree in a related field. Full admissions requirements can be viewed on the program website (<http://bas.gmu.edu>).

To graduate with the BAS with a Cloud Computing concentration, students must have a C or better in their core and concentration courses.

Code	Title	Credits
<b>Core Requirements</b>		
BAS 300	Building Professional Competencies	3
BAS 490	Introduction to Research Methods	3
or BAS 492	Capstone Development	
BAS 491	Applied Sciences Capstone (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
or BAS 493	BAS Capstone	
<hr/>		
Total Credits		9

### Additional Concentration Requirements

In order to complete the Cloud Computing Concentration, students complete one of the two following areas:

Code	Title	Credits
<b>Cloud Technology</b>		
MATH 108	Introductory Calculus with Business Applications (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
or MATH 113	Analytic Geometry and Calculus I (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
IT 102	Discrete Structures	3

or MATH 125	Discrete Mathematics I (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
IT 104	Introduction to Computing (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
IT 105	IT Architecture Fundamentals	3
IT 106	Introduction to IT Problem Solving Using Computer Programming	3
or IT 109	Introduction to Computer Programming	
IT 300	Modern Telecommunications	3
IT 341	Data Communications and Network Principles	3
IT 343	IT Project Management	3
IT 442	Cloud Infrastructure	3
IT 451	Cloud Services Management	3
IT 461	Application Development in Cloud	3
IT 481	Cloud Security	3
<hr/>		
Total Credits		36

Code	Title	Credits
<b>Cloud System Management</b>		
MIS 303	Introduction to Business Information Systems (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
MIS 310	Database Management Systems	3
MIS 330	Systems Analysis and Design	3
MIS 341	Cloud Computing Essentials	3
MIS 441	Cloud System Management	3
<b>Applied Coursework</b>		
Students pursuing Cloud System Management must select 15 credit hours of upper-level coursework from the following. Courses not listed here may be selected in consultation with the advisor. Students must meet the prerequisite requirements for their selected classes.		15
IT 343	IT Project Management	
IT 442	Cloud Infrastructure	
IT 451	Cloud Services Management	
IT 461	Application Development in Cloud	
IT 471	Big Data on Cloud Systems	
IT 481	Cloud Security	
MBUS 300	Accounting in a Global Economy	
MBUS 304	Entrepreneurship: Starting and Managing a New Enterprise	
MBUS 305	Introduction to International Business (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
MBUS 306	Managing Projects and Operations	
MBUS 308	Corporate Finance and Investments in a Global Economy	
MGMT 303	Principles of Management	
MIS 320	Networks and Security	
MIS 410	Advanced Database Systems	
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 433	Programming for Analytics	
MKTG 303	Principles of Marketing	
Total Credits		30

### Electives (variable)

All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.

### Concentration in Data Analytics (DNIC)

This concentration is in collaboration with the College of Engineering and Computing (<http://catalog.gmu.edu/colleges-schools/engineering-computing/>). Full admissions requirements can be viewed on the program website (<http://bas.gmu.edu>).

Students must have a C or better in any course that satisfies a prerequisite for an IT course. To graduate with the BAS with a Data Analytics concentration, students must have a C or better in their core, concentration, and applied coursework courses.

Code	Title	Credits
<b>Core Requirements</b>		
BAS 300	Building Professional Competencies	3
BAS 490	Introduction to Research Methods	3
BAS 491	Applied Sciences Capstone (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
<b>Concentration Requirements</b>		
MATH 108	Introductory Calculus with Business Applications (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
or MATH 113	Analytic Geometry and Calculus I (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
STAT 250	Introductory Statistics I (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
STAT 350	Introductory Statistics II	3
STAT 362	Introduction to Computer Statistical Packages	3
STAT 463	Introduction to Exploratory Data Analysis	3
IT 102	Discrete Structures	3
IT 109	Introduction to Computer Programming	3
or IT 106	Introduction to IT Problem Solving Using Computer Programming	
IT 209	Introduction to Object Oriented Programming	3
or IT 206	Object Oriented Techniques for IT Problem Solving	
IT 309	Data Structures and Algorithms in Python	3
or IT 306	Data Structures and Algorithms in Java	
IT 343	IT Project Management	3
<b>Applied Coursework</b>		

Select 9 credit hours of applied coursework from the following. Courses not listed may be selected in consultation with the advisor.

CDS 301	Scientific Information and Data Visualization
CDS 302	Scientific Data and Databases
CDS 303	Scientific Data Mining
STAT 455	Experimental Design
STAT 456	Applied Regression Analysis
STAT 460	Introduction to Biostatistics
STAT 462	Applied Multivariate Statistics
STAT 465	Nonparametric Statistics and Categorical Data Analysis
STAT 474	Introduction to Survey Sampling
SYST 469	Human Computer Interaction

### Concentration in Health, Wellness and Social Services (HWSS)

This concentration is in collaboration with the College of Health and Human Services (<http://catalog.gmu.edu/colleges-schools/health-human-services/>).

To enroll in this concentration, students must have an AAS in one of the following areas:

- Health Information Management
- Hospitality Management, Nutrition Management specialization
- Nursing
- Physical Therapist Assistant
- Respiratory Therapy

Code	Title	Credits
<b>Core Requirements</b>		
BAS 300	Building Professional Competencies	3
SOCW 200	Introduction to Social Work (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
GCH 205	Global Health (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
NURS 434	Vulnerable Populations	3
BAS 490	Introduction to Research Methods	3
BAS 491	Applied Sciences Capstone (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
Total Credits		18

### Additional Concentration Requirements

To complete the Health, Wellness and Social Services concentration, students must complete one of the two following areas:

Code	Title	Credits
<b>Health Care Administration</b>		
HAP 301	Health Care Delivery in the United States	3
HAP 360	Introduction to Health Information Systems	3
HAP 442	Introduction to Health Care Politics and Policy	3
SOCW 380	Changing Social Policies and Systems	3
Total Credits		12

Code	Title	Credits
<b>Physical and Mental Health Care Delivery</b>		
HAP 301	Health Care Delivery in the United States	3
NUTR 295	Introduction to Nutrition (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
Select one from the following:		3
GCH 360	Health and Environment	
HHS 432	Healthy Aging	
SOCW 375	Human Behavior and the Family Life Course (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
SOCW 435	Introduction to Gerontology	
SOCW 483	Selected Topics in Social Work Intervention	
Total Credits		9

### Electives (variable)

All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.

### Concentration in Legal Studies (LGLS)

This concentration is in collaboration with School of Integrative Studies (<http://catalog.gmu.edu/colleges-schools/humanities-social-sciences/integrative-studies/>), College of Humanities and Social Sciences (<http://catalog.gmu.edu/colleges-schools/humanities-social-sciences/>), and Schar School of Policy and Government (<http://catalog.gmu.edu/colleges-schools/policy-government/>).

Code	Title	Credits
<b>Core Requirements</b>		
BAS 300	Building Professional Competencies	3
BAS 490	Introduction to Research Methods	3
BAS 491	Applied Sciences Capstone (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
<b>Concentration Requirements</b>		
Required Courses:		
INTS 300	Law and Justice (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
Additional Courses (minimum 18 credits): <sup>1</sup>		18
BULE 303	Legal Environment of Business	
CLAS 330	Roman Law and Society	
COMM 230	Case Studies in Persuasion	
COMM 430	Persuasion	
COMM 475	Journalism Law	
CONF 425	Mediating Conflict	
CRIM 100	Introduction to Criminal Justice (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
CRIM 220	Introduction to Law and Society	
CRIM 301 or GOVT 301	Public Law and the Judicial Process	3

CRIM 405	Law and Justice around the World (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
CRIM 406	Family Law and the Justice System	
CRIM 407	Advanced Topics in Law and Society	
CRIM 422	Controversial Legal Issues	
CRIM 423	Constitutional Law: Civil Rights and Liberties	
or GOVT 423	Constitutional Law: Civil Rights and Liberties	
CRIM 424	Constitutional Law: Criminal Process and Rights	
CRIM 430	Criminal Law	
ECON 415	Law and Economics	
GOVT 103	Introduction to American Government (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
GOVT 407	Law and Society	
GOVT 443	Law and Ethics of War	
GOVT 446	International Law and Organization	
GOVT 452	Administrative Law and Procedures	
HAP 312	Healthcare Law	
HDFS 401	Family Law and Public Policy	
INTS 202	Public Speaking and Critical Thinking Skills (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
INTS 304	Social Movements and Community Activism (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
INTS 305	Conflict Resolution and Transformation	
INTS 336	Poverty, Wealth and Inequality in the US (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
INTS 362	Social Justice and Human Rights (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
INTS 416	Refugee and Internal Displacement (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	
INTS 417	Human Trafficking and Smuggling	
PRLS 460	Sport and Recreation Law	
PHIL 311	Philosophy of Law	
RELI 364	Religion and Law in the United States	
SOCI 301	Criminology	
SOCI 302	Sociology of Delinquency	
Total Credits		33

<sup>1</sup> Other relevant courses may be selected with advisor approval.

### Electives (variable)

All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.

## Concentration in Managerial Leadership (MGL)

This concentration is in collaboration with School of Business (<http://catalog.gmu.edu/colleges-schools/business/>), College of Humanities and Social Sciences (<http://catalog.gmu.edu/colleges-schools/humanities-social-sciences/>), and Jimmy and Rosalynn Carter School for Peace and Conflict Resolution (<http://catalog.gmu.edu/colleges-schools/peace-conflict-resolution/>).

Code	Title	Credits
<b>Core Requirements</b>		
BAS 300	Building Professional Competencies	3
BAS 490	Introduction to Research Methods	3
BAS 491	Applied Sciences Capstone (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
<b>Concentration Requirements</b>		
MBUS 306	Managing Projects and Operations	3
MGMT 303	Principles of Management	3
INTS 404	Ethics and Leadership	4
INTS 435	Leadership in a Changing Environment	4
CONF 300	Conflict Resolution Techniques and Practice	3
CONF 302	Culture, Identity, and Conflict	3
CONF 320	Interpersonal Conflict Analysis and Resolution	3
COMM 320	Business and Professional Communication	3
COMM 401	Interpersonal Communication in the Workplace	3
Total Credits		38

### Electives (variable)

All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.

## Concentration in Technology and Innovation (TCNV)

This concentration is in collaboration with the School of Business (<http://catalog.gmu.edu/colleges-schools/business/>) and the College of Engineering and Computing (<http://catalog.gmu.edu/colleges-schools/engineering-computing/>).

Code	Title	Credits
<b>Core Requirements</b>		
BAS 300	Building Professional Competencies	3
BAS 490	Introduction to Research Methods	3
BAS 491	Applied Sciences Capstone (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
<b>Concentration Requirements</b> <sup>1</sup>		
IT 105	IT Architecture Fundamentals	3
IT 213	Multimedia and Web Design <sup>2</sup>	3
IT 214	Database Fundamentals <sup>2</sup>	3
IT 223	Information Security Fundamentals	3
IT 304	IT in the Global Economy	3
IT 343	IT Project Management	3

MBUS 300	Accounting in a Global Economy	3
MBUS 305	Introduction to International Business (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
MGMT 303	Principles of Management	3
MIS 303	Introduction to Business Information Systems (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )	3
MKTG 303	Principles of Marketing	3
Total Credits		42

- <sup>1</sup> All courses for this concentration are available in an online format with most offered as asynchronous delivery.
- <sup>2</sup> The Information Sciences and Technology department offers 1-credit, self-paced, online review courses; ending with an in-class final exam. Students who register for a 1-credit course and successfully pass will receive credit (not a waiver) for the corresponding 3-credit course. Students who are not successful must take the respective course at Mason to meet their degree requirements. Review courses are available as follows:
  - for IT 213 Multimedia and Web Design: IT 193 Review of Multimedia and Web Design
  - for IT 214 Database Fundamentals: IT 194 Review of Database Fundamentals

### Electives (variable)

All BAS students are required to complete a minimum of 120 credit hours of coursework. Students will work with their advisor to determine how to fulfill their outstanding credit hours to ensure they have met all major and university requirements. The number of elective credits that a BAS student may have available will vary by concentration and the amount of applicable transfer coursework the student has been awarded.

## Accelerated Master's

### Applied Science, BAS (Cyber Security Concentration)/Applied Information Technology, Accelerated MS

#### Overview

Highly-qualified students in the Applied Science, BAS, Cyber Security Concentration have the option of obtaining an accelerated Applied Information Technology, MS (<http://catalog.gmu.edu/colleges-schools/engineering/information-sciences-technology/applied-information-technology-ms/>).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (<http://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7>). For policies governing all graduate degrees, see AP.6 Graduate Policies (<http://catalog.gmu.edu/policies/academic/graduate-policies/>).

#### Admission Requirements

Students in the Applied Science, BAS, Cyber Security Concentration program may apply to this option if they have earned 60 undergraduate credits with an overall GPA of at least 3.30. They may begin taking graduate-level courses once they have earned 75

undergraduate credits. Criteria for admission are identical to criteria for admission to the Applied Information Technology, MS program.

## Accelerated Option Requirements

Students must complete all credits that satisfy requirements for the BAS and MS programs, with up to 12 credits overlapping from the following courses:

Code	Title	Credits
AIT 512	Algorithms and Data Structures Essentials	3
or AIT 580	Analytics: Big Data to Information	
AIT 524	Database Management Systems	3
AIT 542	Fundamentals of Computing Platforms	3
AIT 660	Cyber Security Fundamentals <sup>1</sup>	3
AIT 664	Information: Representation, Processing and Visualization	3

<sup>1</sup> This course is only applicable to the CYBR and ITMG concentrations in the MSAIT. Students planning to pursue CBHS or DAIN should select a different course.

Note: When selecting between AIT 512 and AIT 580, students should select the course that aligns with the MSAIT concentration they intend to pursue.

## Degree Conferral

Students must apply the semester before they expect to complete the BAS requirements to have the BAS degree conferred. In addition, at the beginning of the student's final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master's degree is conferred.

## Applied Science, BAS (Cyber Security Concentration)/Digital Forensics, Accelerated MS

### Overview

Highly-qualified students in the Applied Science, BAS, Cyber Security Concentration have the option of obtaining an accelerated Digital Forensics, MS (<http://catalog.gmu.edu/colleges-schools/engineering/electrical-computer/digital-forensics-ms/>).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (<http://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7>). For policies governing all graduate degrees, see AP.6 Graduate Policies (<http://catalog.gmu.edu/policies/academic/graduate-policies/>).

### Admission Requirements

Students in the Applied Science, BAS, Cyber Security Concentration (<https://catalog.gmu.edu/colleges-schools/interdisciplinary-programs-courses/applied-science-bas/#cybs>) program may apply for this option if they have earned 60 undergraduate credits with an overall GPA of at least 3.00. Criteria for admission are identical to criteria for admission to the Digital Forensics, MS (<http://catalog.gmu.edu/colleges-schools/engineering/electrical-computer/digital-forensics-ms/>) program.

Students who are accepted into the BAM Pathway will be allowed to register for graduate level courses after successful completion of a minimum of 75 undergraduate credits and course-specific pre-requisites.

## Accelerated Option Requirements

Students must complete all credits that satisfy requirements for the BAS and MS programs, with up to 12 credits overlapping from the following courses:

Code	Title	Credits
DFOR 510	Digital Forensics Analysis	3
DFOR 660	Network Forensics	3
DFOR 661	Digital Media Forensics	3
DFOR 663	Operations of Intrusion Detection for Forensics	3
DFOR 664	Incident Response Forensics	3

## Degree Conferral

Students must apply the semester before they expect to complete the BAS requirements to have the BAS degree conferred. In addition, at the beginning of the student's final undergraduate semester, students must complete a Bachelor's/Accelerated Master's Transition form. At the completion of MS requirements, a master's degree is conferred.

## Applied Science, BAS (Data Analytics Concentration)/Applied Information Technology, Accelerated MS

### Overview

Highly-qualified students in the Applied Science, BAS, Data Analytics Concentration have the option of obtaining an accelerated Applied Information Technology, MS (<http://catalog.gmu.edu/colleges-schools/engineering/information-sciences-technology/applied-information-technology-ms/>).

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (<http://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7>). For policies governing all graduate degrees, see AP.6 Graduate Policies (<http://catalog.gmu.edu/policies/academic/graduate-policies/>).

### Admission Requirements

Students in the Applied Science, BAS Data Analytics concentration may apply to this option if they have earned 60 undergraduate credits with an overall GPA of at least 3.30. Students may begin taking the master's level courses once they have earned 75 undergraduate credits.

## Accelerated Option Requirements

Students must complete all credits that satisfy requirements for the BAS and MS programs. Students may select up to 12 credits to overlap from the following options. Students should consult with both the BAS and MSAIT advisors.

Code	Title	Credits
AIT 512	Algorithms and Data Structures Essentials <sup>1</sup>	3
or AIT 580	Analytics: Big Data to Information	
AIT 524	Database Management Systems	3
AIT 542	Fundamentals of Computing Platforms	3

AIT 664	Information: Representation, Processing and Visualization	3
---------	---	---

<sup>1</sup> When selecting between AIT 512 and AIT 580, students should select the course that aligns with the MSAIT concentration they intend to pursue.

## Applied Science, BAS (Data Analytics Concentration)/Data Analytics Engineering, Accelerated MS

### Overview

Highly-qualified students in the Applied Science, BAS, Data Analytics Concentration have the option of obtaining an accelerated Data Analytics Engineering, MS. (<http://catalog.gmu.edu/colleges-schools/engineering/data-analytics-engineering-ms/#text>)

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (<http://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7>). For policies governing all graduate degrees, see AP.6 Graduate Policies (<http://catalog.gmu.edu/policies/academic/graduate-policies/>).

### Admission Requirements

Students in the Applied Science, BAS Data Analytics concentration may apply to this option if they have earned 60 undergraduate credits with an overall GPA of at least 3.30. Students may begin taking the master's level courses once they have earned 75 undergraduate credits.

### Accelerated Option Requirements

Students must complete all credits that satisfy requirements for the BAS and MS programs. The following six credits may overlap:

Code	Title	Credits
AIT 580	Analytics: Big Data to Information	3
CS 504	Principles of Data Management and Mining	3
or CS 584	Theory and Applications of Data Mining	
OR 531	Analytics and Decision Analysis	3
or OR 541	Operations Research: Deterministic Models	
STAT 515	Applied Statistics and Visualization for Analytics	3
or STAT 554	Applied Statistics I	

In addition to the six credits above, students may select up to 6 additional credits to overlap. These credits must be selected in consultation with both the BAS and DAEN advisors. Credits selected will depend on which DAEN concentration the student intends to pursue.