BUSINESS, BACHELOR OF SCIENCE (B.S.) WITH A CONCENTRATION IN SUPPLY CHAIN MANAGEMENT AND ANALYTICS

The concentration in supply chain management and analytics gives students the skills to manage the manufacture and movement of products in the global environment and to understand the fundamentals of decision analytics. The curriculum is comprehensive in that supply chain management and analytics involve a range of issues from inventory management to risk management, as well as the indispensable role of information and technology in coordinating modern supply chains and analyzing data for the benefit of the organization.

Learning goals
Graduates will employ knowledge of supply chain management and effectively utilize analytics tools to provide insight and solutions to complex business issues.

Student learning outcomes
Upon completing this program, students will know and know how to do the following:

- a. Demonstrate an understanding of the complexities of global supply chains
- b. Demonstrate appropriate strategies to assess and manage uncertainty and risk
- c. Identify environmental and social concerns in making supply chain management solutions
- d. Employ analytics tools to support decision-making

Special requirements
The admission requirements for the School of Business (http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/) detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112 and UNIV 200.

The School of Business has special academic policies (http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/), including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as open electives in the degree program.

Degree requirements for Business, Bachelor of Science (B.S.) with a concentration in supply chain management and analytics

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General education (<a href="http://bulletin.vcu.edu/undergraduate/undergraduate-study/general-education-curriculum/">http://bulletin.vcu.edu/undergraduate/undergraduate-study/general-education-curriculum/</a>)</td>
<td>30</td>
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<tr>
<td></td>
<td>Select 30 credits of general education courses in consultation with an adviser.</td>
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<td></td>
<td>Major requirements</td>
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<tr>
<td></td>
<td>• Major core requirements</td>
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<tr>
<td></td>
<td>MGMT 319</td>
<td>Leadership</td>
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<tr>
<td></td>
<td>SCMA 302</td>
<td>Business Statistics II</td>
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<td>• Concentration requirements</td>
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<td>SCMA 303</td>
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<td>SCMA 386</td>
<td>Global Supply Chain Management</td>
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<td>• Major electives</td>
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<tr>
<td></td>
<td>Ancillary requirements</td>
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<td>• Ancillary core requirements</td>
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<tr>
<td></td>
<td>ACCT 203 &amp; ACCT 204</td>
<td>Introduction to Accounting I and Introduction to Accounting II</td>
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<td></td>
<td>BUSN 225</td>
<td>Winning Presentations</td>
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<td>BUSN 301</td>
<td>Career and Professional Development</td>
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<td></td>
<td>BUSN 499</td>
<td>Business Knowledge Exam</td>
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<tr>
<td></td>
<td>ECON 210</td>
<td>Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)</td>
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<td></td>
<td>ECON 211</td>
<td>Principles of Macroeconomics</td>
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<td></td>
<td>FIRE 311</td>
<td>Financial Management</td>
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<tr>
<td></td>
<td>INFO 360</td>
<td>Business Information Systems</td>
</tr>
<tr>
<td></td>
<td>MKTG 301</td>
<td>Marketing Principles</td>
</tr>
<tr>
<td></td>
<td>MGMT 303</td>
<td>Creativity and Ideation</td>
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<td></td>
<td>MGMT 310</td>
<td>Managing People in Organizations</td>
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<tr>
<td></td>
<td>MGMT 434</td>
<td>Strategic Management</td>
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<td></td>
<td>SCMA 301</td>
<td>Business Statistics I</td>
</tr>
<tr>
<td></td>
<td>SCMA 320</td>
<td>Production/Operations Management</td>
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</table>
Business, Bachelor of Science (B.S.) with a concentration in supply chain management and analytics

• Additional ancillary requirements

BUSN 201  Foundations of Business 1
or BUSN 205  Introduction to the World of Business
3

BUSN 212  Business Problem Solving and Analysis
4
(either satisfies general education quantitative foundations)

or MATH 200  Calculus with Analytic Geometry I

BUSN 323  Legal Environment of Business
3
or FIRE 325  Real Estate Law
or FIRE 459  Insurance Law

Open electives
Select any course. 2  16

Total Hours 120

1

BUSN 205 satisfies general education AOI for global perspectives.

2

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.

Approved electives

Course  Title  Hours

Select four of the following SCMA courses:
SCMA 339  Quantitative Solutions for Supply Chain Management 3
SCMA 410  Logistics and Distribution Strategy 3
SCMA 420  Strategic Sourcing 3
SCMA 430  Data Management and Visualization 3
SCMA 439  Process Management and Quality Control 3
SCMA 440  Data Mining and Forecasting 3
SCMA 491  Topics in Supply Chain Management and Analytics 1-3
SCMA 492  Independent Study in Supply Chain Management and Analytics 1-3
SCMA 493  Internship in Supply Chain Management and Analytics 3

Select two of the following non-SCMA courses:
BUSN 400 & BUSN 401  Principles of Consulting and International Consulting Practicum (If this option is chosen, both must be taken.) 6
ECO 303  Managerial Economics 3
INFO 361  Systems Analysis and Design 3
MGMT 389  Managerial Skills Development 3
MKTG 325  Business-to-business Marketing 3
MKTG 450  Product Development and Management 3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester

Hours

UNIV 111  Focused Inquiry I (satisfies general education UNIV foundations) 3
Play course video for
Focused Inquiry I

General education course 3
General education course 3
General education course 3
Open elective (prerequisite to BUSN 212 suggested) 3

Term Hours: 15

Spring semester

BUSN 212  Business Problem Solving and Analysis
(satisfies general education quantitative foundations)

BUSN 225  Winning Presentations 3
UNIV 112  Focused Inquiry II (satisfies general education UNIV foundations)
Play course video for
Focused Inquiry II

General education course 3
Open elective 3

Term Hours: 16

Sophomore year

Fall semester

ACCT 203  Introduction to Accounting I 3

BUSN 201 or BUSN 205  Foundations of Business or Introduction to the World of Business
3

ECON 210  Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives) 3

UNIV 200  Advanced Focused Inquiry: Literacies, Research and Communication (satisfies general education UNIV foundations) 3

General education course 3

Term Hours: 15

Spring semester

ACCT 204  Introduction to Accounting II 3

BUSN 301  Career and Professional Development 1
ECON 211  Principles of Macroeconomics 3
MKTG 301  Marketing Principles 3
SCMA 301  Business Statistics I 3
Open elective 3

Term Hours: 16

Junior year

Fall semester

BUSN 323 or FIRE 325 or FIRE 459  Legal Environment of Business or Real Estate Law or Insurance Law 3
Minimum qualifications for entrance to this accelerated program include completion of 85 undergraduate credit hours including SCMA 212 or MATH 200, SCMA 301, and SCMA 302 with a minimum grade of B and an overall GPA of 3.25. Students who received transfer credit for these courses shall submit transcripts from previous institutions with their application so that performance in these classes can be evaluated.

Once enrolled in the accelerated program, students must meet the standards of performance applicable to graduate students as described in the “Satisfactory academic progress” section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate adviser and the faculty adviser to the graduate program.

### Admission to the graduate program

Entrance to the accelerated program enables the student to take the approved shared courses that will apply to the undergraduate and graduate degrees. However, entry into an accelerated program via an approved Accelerated Program Declaration Form does not constitute application or admission into the graduate program. Admission to the graduate program requires a separate step that occurs through a formal application to the master's program, which is submitted through Graduate Admissions no later than a semester prior to graduation with the baccalaureate degree, that is, before the end of the fall semester of the senior year. In order to continue pursuing the master's degree after the baccalaureate degree is conferred, accelerated students must follow the admission to graduate study requirements outlined in the VCU Bulletin.

### Degree requirements

The Bachelor of Science in Business degree with a concentration in supply chain management and analytics will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will substitute for the required major or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate decision analytics courses that may be taken as an undergraduate, once a student is admitted to the program, are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFO 645</td>
<td>Prescriptive Analytics</td>
<td>3</td>
</tr>
<tr>
<td>INFO 648</td>
<td>Business Data Analytics</td>
<td>3</td>
</tr>
<tr>
<td>SCMA 632</td>
<td>Statistical Analysis and Modeling</td>
<td>3</td>
</tr>
<tr>
<td>SCMA 642</td>
<td>Decision and Risk Analytics</td>
<td>3</td>
</tr>
</tbody>
</table>

### Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

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**Course**

- BUSN 325 Organizational Communication 3
- MGMT 310 Managing People in Organizations 3
- SCMA 302 Business Statistics II 3
- SCMA 320 Production/Operations Management 3

**Term Hours:** 15

**Spring semester**

- INFO 360 Business Information Systems 3
- MGMT 303 Creativity and Ideation 3
- MGMT 319 Leadership 3
- SCMA 303 Business Analytics 3
- SCMA 386 Global Supply Chain Management 3

**Term Hours:** 15

**Senior year**

**Fall semester**

- FIRE 311 Financial Management 3
- SCMA electives 6
- Non-SCMA elective 3
- Open elective 3

**Term Hours:** 15

**Spring semester**

- BUSN 499 Business Knowledge Exam 0
- MGMT 434 Strategic Management 3
- SCMA electives 6
- Non-SCMA elective 3
- Open elective 1

**Term Hours:** 13

**Total Hours:** 120

The minimum number of credit hours required for this degree is 120.

**Accelerated B.S. and M.D.A.**

The accelerated B.S. and M.D.A. program allows qualified students to earn both the B.S. in Business with a concentration in supply chain management and analytics and Master of Decision Analytics in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 credit hours of graduate courses toward both the B.S. and M.D.A. degrees. Thus, the two degrees may be earned with a minimum of 138 credits rather than the 150 credits necessary if the two degrees are pursued separately.

This accelerated program is for highly-motivated students who want to pursue advanced study in decision analytics. Students holding these degrees will be prepared to contribute to analytical decision making that supports the mission of a variety of organizations.

**Entrance to the accelerated program**

Interested undergraduate students should consult with their adviser as early as possible to receive specific information about the accelerated program, determine academic eligibility and submit (no later than two semesters prior to graduating with a baccalaureate degree, that is, before the end of the spring semester of their junior year) an Accelerated Program Declaration Form to be approved by the graduate program director. Limited spaces may be available in the accelerated program. Academically qualified students may not receive approval if capacity has been reached.

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**Recommended course sequence/plan of study**

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

---

**Course**

- BUSN 325 Organizational Communication 3
- MGMT 310 Managing People in Organizations 3
- SCMA 302 Business Statistics II 3
- SCMA 320 Production/Operations Management 3

**Term Hours:** 15

**Spring semester**

- INFO 360 Business Information Systems 3
- MGMT 303 Creativity and Ideation 3
- MGMT 319 Leadership 3
- SCMA 303 Business Analytics 3
- SCMA 386 Global Supply Chain Management 3

**Term Hours:** 15

**Senior year**

**Fall semester**

- FIRE 311 Financial Management 3
- SCMA electives 6
- Non-SCMA elective 3
- Open elective 3

**Term Hours:** 15

**Spring semester**

- BUSN 499 Business Knowledge Exam 0
- MGMT 434 Strategic Management 3
- SCMA electives 6
- Non-SCMA elective 3
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**Recommended course sequence/plan of study**

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

---

**Course**

- BUSN 325 Organizational Communication 3
- MGMT 310 Managing People in Organizations 3
- SCMA 302 Business Statistics II 3
- SCMA 320 Production/Operations Management 3

**Term Hours:** 15

**Spring semester**

- INFO 360 Business Information Systems 3
- MGMT 303 Creativity and Ideation 3
- MGMT 319 Leadership 3
- SCMA 303 Business Analytics 3
- SCMA 386 Global Supply Chain Management 3

**Term Hours:** 15

**Senior year**

**Fall semester**

- FIRE 311 Financial Management 3
- SCMA electives 6
- Non-SCMA elective 3
- Open elective 3

**Term Hours:** 15

**Spring semester**

- BUSN 499 Business Knowledge Exam 0
- MGMT 434 Strategic Management 3
- SCMA electives 6
- Non-SCMA elective 3
- Open elective 1

**Term Hours:** 13

**Total Hours:** 120

The minimum number of credit hours required for this degree is 120.

**Accelerated B.S. and M.D.A.**

The accelerated B.S. and M.D.A. program allows qualified students to earn both the B.S. in Business with a concentration in supply chain management and analytics and Master of Decision Analytics in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 credit hours of graduate courses toward both the B.S. and M.D.A. degrees. Thus, the two degrees may be earned with a minimum of 138 credits rather than the 150 credits necessary if the two degrees are pursued separately.

This accelerated program is for highly-motivated students who want to pursue advanced study in decision analytics. Students holding these degrees will be prepared to contribute to analytical decision making that supports the mission of a variety of organizations.

**Entrance to the accelerated program**

Interested undergraduate students should consult with their adviser as early as possible to receive specific information about the accelerated program, determine academic eligibility and submit (no later than two semesters prior to graduating with a baccalaureate degree, that is, before the end of the spring semester of their junior year) an Accelerated Program Declaration Form to be approved by the graduate program director. Limited spaces may be available in the accelerated program. Academically qualified students may not receive approval if capacity has been reached.

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**Recommended course sequence/plan of study**

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.
Students holding these degrees are prepared for corporate and government supply chain management positions using data analytics, leadership skills and global perspectives.

**Entrance to the accelerated program**

Interested undergraduate students should consult with their adviser as early as possible to receive specific information about the accelerated program, determine academic eligibility and submit (no later than two semesters prior to graduating with a baccalaureate degree, that is, before the end of the spring semester of their junior year) an Accelerated Program Declaration Form to be approved by the graduate program director. Limited spaces may be available in the accelerated program. Academically qualified students may not receive approval if capacity has been reached.

Minimum qualifications for entrance to this accelerated program include completion of 85 undergraduate credit hours including SCMA 212 or MATH 200, SCMA 301, and SCMA 302 with a minimum grade of B and an overall GPA of 3.25. Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.

Once enrolled in the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate adviser and the faculty adviser to the graduate program.

**Admission to the graduate program**

Entrance to the accelerated program enables the student to take the approved shared courses that will apply to the undergraduate and graduate degrees. However, entry into an accelerated program via an approved Accelerated Program Declaration Form does not constitute application or admission into the graduate program. Admission to the graduate program requires a separate step that occurs through a formal application to the master's program, which is submitted through Graduate Admissions no later than a semester prior to graduation with the baccalaureate degree, that is, before the end of the fall semester of the senior year. In order to continue pursuing the master's degree after the baccalaureate degree is conferred, accelerated students must follow the admission to graduate study requirements outlined in the VCU Bulletin.

**Degree requirements**

The Bachelor of Science in Business degree with a concentration in supply chain management and analytics will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will substitute for the required major or open electives for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate courses for the M.S.C.M. that may be taken as an undergraduate, once a student is admitted to the program, are:
### Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>SCMA 602</td>
<td>Global Supply Chain Management</td>
<td>3</td>
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<tr>
<td>SCMA 675</td>
<td>Operations Management</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MSCM program electives</td>
<td>6</td>
</tr>
</tbody>
</table>

#### SCMA 171. Mathematical Applications for Business. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 141 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Pre- or corequisite: INFO 162. Mathematics equivalency may be validated by a satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Formulation and solution of problems using a spreadsheet and algebra, mathematics of finance, matrices and introductory linear programming. Instruction will include spreadsheet use as a calculation and graphing tool.

<table>
<thead>
<tr>
<th>Course</th>
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<th>Hours</th>
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<tr>
<td>BUSN 323</td>
<td>Legal Environment of Business</td>
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<tr>
<td>or FIRE 325</td>
<td>Real Estate Law</td>
<td>3</td>
</tr>
<tr>
<td>or FIRE 459</td>
<td>Insurance Law</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 325</td>
<td>Organizational Communication</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 310</td>
<td>Managing People in Organizations</td>
<td>3</td>
</tr>
<tr>
<td>SCMA 302</td>
<td>Business Statistics II</td>
<td>3</td>
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<tr>
<td>SCMA 320</td>
<td>Production/Operations Management</td>
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<td>Term Hours:</td>
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#### Spring semester

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<tr>
<td>INFO 360</td>
<td>Business Information Systems</td>
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<td>MGMT 303</td>
<td>Creativity and Ideation</td>
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<td>MGMT 319</td>
<td>Leadership</td>
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<td>Term Hours:</td>
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#### Senior year

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<tr>
<td>FIRE 311</td>
<td>Financial Management</td>
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<tr>
<td>SCMA 675</td>
<td>Operations Management</td>
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<tr>
<td>SCMA electives</td>
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<td>MSCM program elective</td>
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<tr>
<td>Term Hours:</td>
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<td>15</td>
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#### Spring semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BUSN 499</td>
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<tr>
<td>MGMT 434</td>
<td>Strategic Management</td>
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<td>SCMA 602</td>
<td>Global Supply Chain Management</td>
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<td>SCMA elective</td>
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<tr>
<td>MSCM program elective</td>
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<td>3</td>
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<tr>
<td>Open elective</td>
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<td>2</td>
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<tr>
<td>Term Hours:</td>
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<td>14</td>
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#### Summer semester

<table>
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<tbody>
<tr>
<td>SCMA 603</td>
<td>SAP ERP and Supply Chain Management</td>
<td>3</td>
</tr>
<tr>
<td>SCMA 606</td>
<td>Supply Chain Innovation</td>
<td>3</td>
</tr>
<tr>
<td>Term Hours:</td>
<td></td>
<td>6</td>
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</tbody>
</table>

#### Fifth year

<table>
<thead>
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<th>Title</th>
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</thead>
<tbody>
<tr>
<td>SCMA 645</td>
<td>Advanced Decision Analytics</td>
<td>3</td>
</tr>
<tr>
<td>SCMA 697</td>
<td>Guided Study in Supply Chain Management</td>
<td>3</td>
</tr>
</tbody>
</table>
SCMA 320. Production/Operations Management. 3 Hours.
Semester course; 3 lecture hours (delivered online, face-to-face or hybrid).
3 credits. Prerequisite: SCMA 301, STAT 210 or STAT 212. This course is restricted to students who have completed at least 54 credit hours (junior standing). Discipline of management and the management process within the operations of an organization. Planning and controlling of operations through decision analysis, forecasting, aggregate planning, inventory management and quality management.

SCMA 339. Quantitative Solutions for Supply Chain Management. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 301, STAT 210 or STAT 212. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Modeling business-related problems using quantitative techniques. Focus is on applications to problems in the service and manufacturing sectors. Typical problem situations involve management of inventory, scheduling of people and processes and allocation of scarce resources.

SCMA 350. Introduction to Project Management. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. Introductory exposure to and practice with the concepts of project management, the activities and skills of project managers, the prevalence of projects in organizations, and the value of project management skills for all managers. Students will employ project management terminology, participate in project work and engage in the appropriate technical and interpersonal processes for managing successful projects.

SCMA 386. Global Supply Chain Management. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 320. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Introduction to supply chains with emphasis on management, e-commerce and globalization. Topics covered include achievement of strategic fit among members of the chain; managing information system requirements; managing economies of scale, role of cycle inventory, impact of aggregation on risk and inventory; determining the optimal level of product availability, coordination and performance measurement.

SCMA 410. Logistics and Distribution Strategy. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 320. This course provides an introduction to the principal analytical tools and methods used in supply chain management, including experience in solving relevant supply chain and logistics problems. The course content includes a heavy emphasis on the use of Microsoft Excel functions to develop modeling skills, including decision analysis, linear programming, heuristics and simulation for supply chain decision-making. Context areas for problem solving include supply chain network design, inventory management, transportation management, purchasing and demand management.

SCMA 420. Strategic Sourcing. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 320. Procurement and strategic sourcing address the processes that facilitate the structure, creation and management of value-added transactions and relationships between supplier and customer organizations in a channel, supply chain and integrated value system context.

SCMA 430. Data Management and Visualization. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 303. This course is designed with the goal of equipping students with competencies in data management and visualization, with the intended product being an individual capable of developing analytically rigorous decision support tools, catered to specific managerial environments, which can be easily handed off for robust application by a range of intended users in those environments.

SCMA 439. Process Management and Quality Control. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 320. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Critical concepts of process management from quality management and Six Sigma; service quality; systems thinking; process improvement strategy and methods; fact-based decision-making; collection and use of data in improvement projects; introduction to data analysis tools and techniques; statistical process control.

SCMA 440. Data Mining and Forecasting. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 302 or STAT 314. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). This course introduces nonmathematical managers to the major quantitative models designed for sound demand, competitive and system forecasting in today's complex and increasingly uncertain business environment. The course is useful for multiple business disciplines, including general management, marketing and finance. Topics include game theory, Markov processes, statistical quality control, exponential smoothing and seasonally adjusted trend analysis. Emphasis is placed on a general understanding of theory, mechanics, application potential, available software packages and templates.

SCMA 491. Topics in Supply Chain Management and Analytics. 1-3 Hours.
Semester course; variable hours. 1-3 credits. Students are restricted to a maximum total of 6 credits for all topics courses. Prerequisite: junior standing. An in-depth study of a selected business topic related to the disciplines in supply chain management and analytics, to be announced in advance.

SCMA 492. Independent Study in Supply Chain Management and Analytics. 1-3 Hours.
Semester course; 1-3 credits. Maximum total of 3 credits. Prerequisites: junior or senior standing as a major in a business curriculum and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

SCMA 493. Internship in Supply Chain Management and Analytics. 3 Hours.
Semester course; 3 credits. Prerequisites: senior standing in the major offering the internship and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. Involves students in a meaningful experience in a setting appropriate to the major.