

Supply Chain Management Science, B.S.

Degree Offered

- Bachelor of Science

Nature of the Program

Management Science is an interdisciplinary study of applying scientific approaches to solving complex management problems. It is highly specialized field of analytics. The Supply Chain Management Science program will prepare students in the application of management science and data science techniques to managing the integrated end-to-end perspective of supply chain systems. Students will receive a grounding in operations research, operations analyses using applied mathematical modeling such as optimization and stochastic modeling applied to all stages of the supply chain management including, sourcing, production, distribution and reverse logistics. Complementing these skills students will be given a strong grounding in data science techniques such as data warehousing, data mining data base management and data visualization to enhance data insights and facilitate improved decision making. This is a STEM designated major. Career opportunities include:

- Business Analyst
- Forecast Engineer
- Logistics Engineer
- Management Scientist
- Operations Analyst
- Operations Management Consultant
- Operations Research Analyst
- Operations Researcher
- Research Analyst
- Supply Chain Control Analyst
- Supply Chain Data Analyst
- Supply Chain Intelligence Business Analyst
- Supply Chain Management Consultant
- Supply Chain Systems Analyst
- Transportation Analyst

Admissions for 2025-2026

For specific information regarding the admissions requirements for First Time Freshmen to the John Chambers College of Business and Economics, please visit Chambers admissions (<http://catalog.wvu.edu/undergraduate/collegeofbusinessandconomics/#admissionstext>).

Students who are direct admitted to the major as first-time freshmen must possess an overall university GPA of at least 2.5 and have completed the course prerequisites listed in the table below with minimum grade of C-, unless otherwise noted, to be eligible to enroll in upper-division course work.

Students who are not direct admitted to the major (i.e. Business) will declare the major during the semester in which they satisfy the course prerequisites listed below. Applicants also must possess an overall GPA of at least 2.5 to be considered for admission to the major.

| Code | Title | Hours |
|-------------|--|-------|
| ACCT 201 | Principles of Accounting 1 | 3 |
| BCOR 121 | Introduction to Business Applications | 2 |
| ECON 201 | Principles of Microeconomics | 3 |
| ECON 202 | Principles of Macroeconomics | 3 |
| ENGL 101 | Introduction to Composition and Rhetoric | 3 |
| ENGL 102 | Composition, Rhetoric, and Research | 3 |
| MATH 155 | Calculus 1 | 4 |
| STAT 215 | Introduction to Probability and Statistics | 3 |
| Total Hours | | 24 |

Major Code: 2172

General Education Foundations

Please use this link to view a list of courses that meet each GEF requirement. (<http://registrar.wvu.edu/gef/>)

NOTE: Some major requirements will fulfill specific GEF requirements. Please see the curriculum requirements listed below for details on which GEFs you will need to select.

| Code | Title | Hours |
|--|---|-------|
| General Education Foundations | | |
| F1 - Composition & Rhetoric | | 3-6 |
| ENGL 101 & ENGL 102 or ENGL 103 | Introduction to Composition and Rhetoric and Composition, Rhetoric, and Research Accelerated Academic Writing | |
| F2A/F2B - Science & Technology | | 4-6 |
| F3 - Math & Quantitative Reasoning | | 3-4 |
| F4 - Society & Connections | | 3 |
| F5 - Human Inquiry & the Past | | 3 |
| F6 - The Arts & Creativity | | 3 |
| F7 - Global Studies & Diversity | | 3 |
| F8 - Focus (may be satisfied by completion of a minor, double major, or dual degree) | | 9 |
| Total Hours | | 31-37 |

Please note that not all of the GEF courses are offered at all campuses. Students should consult with their advisor or academic department regarding the GEF course offerings available at their campus.

Degree Requirements

| Code | Title | Hours |
|--|-------|-------|
| University Requirements | | 21 |
| Program Requirements | | 24 |
| Math and Data Requirements | | 18 |
| Business Core Requirements | | 27 |
| Supply Chain Management Science Major Requirements | | 30 |
| Total Hours | | 120 |

University Requirements

| Code | Title | Hours |
|--|--------------------|-------|
| General Education Foundations (GEF) 1, 2, 3, 4, 5, 6, 7, and 8 (31-37 Credits) | | |
| Outstanding GEF Requirements 2, 5, 6, and 7 | | 13 |
| BCOR 191 | First-Year Seminar | 1 |
| General Electives | | 7 |
| Total Hours | | 21 |

Program Requirements

| Code | Title | Hours |
|-------------|---|-------|
| ACCT 201 | Principles of Accounting 1 (Minimum grade of C-) | 3 |
| BCOR 121 | Introduction to Business Applications (Minimum grade of C-) | 2 |
| ECON 201 | Principles of Microeconomics (Minimum grade of C-; GEF 4) | 3 |
| ECON 202 | Principles of Macroeconomics (Minimum grade of C-; GEF 8) | 3 |
| ENGL 101 | Introduction to Composition and Rhetoric (Minimum grade of C-; GEF 1) | 3 |
| ENGL 102 | Composition, Rhetoric, and Research (Minimum grade of C-; GEF 1) | 3 |
| MATH 155 | Calculus 1 (Minimum grade of C-; GEF 3) | 4 |
| STAT 215 | Introduction to Probability and Statistics (Minimum grade of C-; GEF 8) | 3 |
| Total Hours | | 24 |

Math and Data Requirements

| Code | Title | Hours |
|------------------|---|-------|
| MATH 156 | Calculus 2 (GEF 8) | 4 |
| CS 110 & 110L | Introduction to Computer Science and Introduction to Computer Science Laboratory | 4 |
| CS 111 & 111L | Introduction to Data Structures and Introduction to Data Structures Laboratory | 4 |
| MIST 351 | Database Management Systems | 3 |
| BUDA 450 | Business Data Mining and Visualization | 3 |
| Total Hours | | 18 |

Business Core Requirements

| Code | Title | Hours |
|-------------|--|-------|
| BCOR 199 | Introduction to Business | 3 |
| BCOR 330 | Information Systems and Technology (Minimum grade of C-) | 3 |
| BCOR 340 | Principles of Finance (Minimum grade of B-) | 3 |
| BCOR 360 | Supply Chain Management (Minimum grade of C-) | 3 |
| ECON 301 | Intermediate Micro-Economic Theory | 3 |
| ECON 302 | Intermediate Macro-Economic Theory | 3 |
| ECON 425 | Introductory Econometrics | 3 |
| FIN 305 | Intermediate Finance | 3 |
| FIN 320 | Financial Statements Analysis | 3 |
| Total Hours | | 27 |

Supply Chain Management Science Major Requirements

| Code | Title | Hours |
|-------------|---|-------|
| GSCM 350 | Sourcing and Supply Management (Minimum grade of C-) | 3 |
| GSCM 355 | Logistics and Distribution Management (Minimum grade of C-) | 3 |
| GSCM 360 | Supply Chain Analytics (Minimum grade of C-) | 3 |
| GSCM 370 | Transportation Management (Minimum grade of C-) | 3 |
| GSCM 425 | Supply Chain Network Design (Minimum grade of C-) | 3 |
| GSCM 430 | Supply Chain Technology | 3 |
| GSCM 450 | Supply Chain Quality Management (Minimum grade of C-) | 3 |
| GSCM 455 | Project Management | 3 |
| GSCM 470 | Global Supply Chain Systems | 3 |
| ACCT 331 | Managerial Accounting | 3 |
| Total Hours | | 30 |

Suggested Plan of Study

First Year

| Fall | Hours | Spring | Hours |
|-------------------|-------|--------------------|-------|
| BCOR 121 | | 2 ECON 201 (GEF 4) | 3 |
| BCOR 191 | | 1 ENGL 101 (GEF 1) | 3 |
| BCOR 199 | | 3 MATH 156 (GEF 8) | 4 |
| ACCT 201 | | 3 CS 110 | 3 |
| MATH 155 (GEF 3) | | 4 CS 110L | 1 |
| GEF 2, 5, 6, or 7 | | 3 | |
| | | 16 | 14 |

Second Year

| Fall | Hours | Spring | Hours |
|------------------|-------|------------|-------|
| ECON 202 (GEF 8) | | 3 BCOR 330 | 3 |

| | | |
|------------------|--------------------|----|
| ENGL 102 (GEF 1) | 3 BCOR 340 | 3 |
| STAT 215 (GEF 8) | 3 BCOR 360 | 3 |
| CS 111 | 3 ECON 301 | 3 |
| CS 111L | 1 General Elective | 3 |
| General Elective | 2 | |
| | | 15 |

Third Year

| Fall | Hours | Spring | Hours |
|-------------------|-------|------------|-------|
| ECON 302 | | 3 ECON 425 | 3 |
| FIN 305 | | 3 FIN 320 | 3 |
| GSCM 350 | | 3 GSCM 360 | 3 |
| GSCM 355 | | 3 GSCM 370 | 3 |
| GEF 2, 5, 6, or 7 | | 3 MIST 351 | 3 |
| | | 15 | 15 |

Fourth Year

| Fall | Hours | Spring | Hours |
|-------------------|-------|---------------------|-------|
| BUDA 450 | | 3 GSCM 455 | 3 |
| GSCM 425 | | 3 GSCM 470 | 3 |
| GSCM 430 | | 3 ACCT 331 | 3 |
| GSCM 450 | | 3 GEF 2, 5, 6, or 7 | 3 |
| GEF 2, 5, 6, or 7 | | 3 General Elective | 3 |
| | | 15 | 15 |

Total credit hours: 120

Major Learning Outcomes

SUPPLY CHAIN MANAGEMENT SCIENCE

- Students use data warehousing, data mining and data visualization techniques to compile, manipulate and present insights from data to inform supply chain management decision making.
- Students employ statistical modeling tools to forecast supply chain activities such as customer demand and asset utilization for supply chain planning.
- Students apply optimization theory and operations research techniques to model and find the best feasible solutions to improve supply chain processes spanning procurement, operations, demand and returns management.
- Students apply operations analysis to the improvement of systems in supply chain processes.
- Students design, test and evaluate stochastic and dynamic models of prototypical supply chain systems.
- Students use coding platforms including R and Python to program statistical, mathematical and simulation models of supply chain systems.