BUSINESS AND MANAGEMENT SYSTEMS

Business and management systems is an undergraduate degree based on broad, foundational core courses. Professionals in this field analyze organizational needs to provide technology-enabled management and operations.

Today’s business environments have a critical need for professionals who have an understanding of information technologies; are capable of operating in an electronic environment; and are able to synthesize, analyze, and learn from vast amounts of information. These individuals are needed to realize technology’s great potential to support business processes, decision making, and communication.

As a business and management systems major, you will take courses that are rigorous and oriented toward building the foundation necessary for lifetime learning. Studying at Missouri S&T, you will benefit from the world-class computer environment and your association with excellent students from around the country and the world. Students in the program are strongly encouraged to participate in summer internships or co-ops with companies before they graduate. There are many opportunities and students benefit greatly in terms of their education and the edge they have seeking full-time employment once they graduate.

Bachelor of Science
Business and Management Systems

In Business and Management Systems, the Bachelor of Science degree consists of 120 credit hours. All undergraduate students in Business and Management Systems are required to complete a General Education Requirements Core, including courses in Humanities, Social Sciences, Mathematics, Science, and Communication Skills.

A common departmental core of courses in Management and Information Technology helps provide students with skills to succeed in a fast-changing and globalized environment. Business Core courses and Business Electives provide students with comprehensive knowledge in business disciplines.

A minimum grade of “C” is required in the Business Core, Business Electives, Management, and Information Technology courses. Students have 9 credit hours for free electives.

### Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td>Second Semester</td>
<td></td>
</tr>
<tr>
<td>PSYCH 1101</td>
<td>3</td>
<td>MATH 1140</td>
<td>3</td>
</tr>
<tr>
<td>BUS 1810</td>
<td>1</td>
<td>IS&amp;T 1750</td>
<td>3</td>
</tr>
<tr>
<td>BUS 1110</td>
<td>3</td>
<td>ENGLISH 1600 or TCH COM 1600</td>
<td>3</td>
</tr>
<tr>
<td>ENGLISH 1120</td>
<td>3</td>
<td>ECON 1200</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective 3</td>
<td>3</td>
<td>Science Elective 3</td>
<td>3</td>
</tr>
<tr>
<td>Laboratory w/ Science Elective 3</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td>Second Semester</td>
<td></td>
</tr>
<tr>
<td>BUS 1210</td>
<td>3</td>
<td>FINANCE 2150</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1212</td>
<td>4</td>
<td>IS&amp;T 1552</td>
<td>3</td>
</tr>
<tr>
<td>IS&amp;T 1551</td>
<td>3</td>
<td>ERP 2110</td>
<td>3</td>
</tr>
<tr>
<td>ECON 1100</td>
<td>3</td>
<td>POL SCI 1200</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

### Junior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td>Second Semester</td>
<td></td>
</tr>
<tr>
<td>MKT 3110</td>
<td>3</td>
<td>BUS 5580</td>
<td>3</td>
</tr>
<tr>
<td>IS&amp;T 4654</td>
<td>3</td>
<td>ENGLISH 2560 or TCH COM 2560</td>
<td>3</td>
</tr>
<tr>
<td>STAT 3111</td>
<td>3</td>
<td>BUS 3220</td>
<td>3</td>
</tr>
<tr>
<td>Business Elective</td>
<td>3</td>
<td>Business Electives</td>
<td>6</td>
</tr>
<tr>
<td>Free Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

### Senior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td>Second Semester</td>
<td></td>
</tr>
<tr>
<td>BUS 2910</td>
<td>3</td>
<td>BUS 5980</td>
<td>3</td>
</tr>
<tr>
<td>BUS 5360</td>
<td>3</td>
<td>BUS 4675</td>
<td>3</td>
</tr>
<tr>
<td>MKT 5310</td>
<td>3</td>
<td>Business Elective</td>
<td>3</td>
</tr>
<tr>
<td>Business Elective</td>
<td>3</td>
<td>Fine Art, Social Science, or Humanities Elective 2</td>
<td>3</td>
</tr>
<tr>
<td>Free Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

Total Credits: 120

A grade of “C” or better is required in the following courses for graduation: IS&T 1551, IS&T 1552, IS&T 1750, IS&T 4654, ERP 2110, FIN 2150, MKT 3110, MKT 5310, ECON 1100, ECON 1200, BUS 1110, BUS 1210, BUS 2150, BUS 2910, BUS 3220, BUS 4675, BUS 5360, BUS 5580, BUS 5980, and all Business Electives.

1 Writing intensive course
2 Any course in the following areas not used for other degree requirements: Art, economics, English, foreign language, history, literature, music, philosophy, political science, psychology, sociology, theater.
3 Any course in the following areas: Biology, Chemistry, Geology, Geological Engineering, Physics.

### Areas of Concentration

All students are required to complete twelve credit hours chosen from 2000, 3000, 4000, or 5000-level courses in business, economics, finance, enterprise resource planning, information science & technology, or marketing. A “C” or better grade is required in all twelve credit hours. If the student chooses to designate an area of concentration for these courses, focusing at least 3 courses (9 credits) in one area, he or she may do so. Students are not required to choose a concentration area. Areas of concentration are:

### E-Commerce

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS&amp;T 5652</td>
<td>Advanced Web Development</td>
</tr>
<tr>
<td>IS&amp;T 4641</td>
<td>Digital Commerce and the Internet of Things</td>
</tr>
<tr>
<td>IS&amp;T 4642</td>
<td>E-Commerce Architecture</td>
</tr>
<tr>
<td>IS&amp;T 4257</td>
<td>Network Economy</td>
</tr>
<tr>
<td>IS&amp;T 5168</td>
<td>Law and Ethics in E-Commerce</td>
</tr>
</tbody>
</table>

### Enterprise Resource Planning

Any 9 hours of ERP-designated courses at the 4000-level or above.
Minor in Digital Supply Chain Management

The minor in digital supply chain management requires the following 15 hours of coursework:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 5360</td>
<td>Business Operations</td>
<td>3</td>
</tr>
<tr>
<td>ISA 4355/6</td>
<td>Integration</td>
<td>3</td>
</tr>
<tr>
<td>BUS 5110</td>
<td>Enterprise Resource Planning Systems Design and Implementation</td>
<td>3</td>
</tr>
<tr>
<td>MECH 5070</td>
<td>Rapid Design and Optimization</td>
<td>3</td>
</tr>
<tr>
<td>MECH 5056</td>
<td>Design for Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>MECH 5075/</td>
<td>Integrated Product and Process Design</td>
<td>3</td>
</tr>
<tr>
<td>ENG MGT 5515</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MECH 5076</td>
<td>Principles of Computer-Aided Design</td>
<td>3</td>
</tr>
</tbody>
</table>

Two courses from the following list: *

- ERP 5410 | Use of Business Intelligence | 6 |
- ERP 5110 | Enterprise Resource Planning Systems Design and Implementation | 6 |
- MECH 5070 | Rapid Design and Optimization | 6 |
- MECH 5056 | Design for Manufacturing | 6 |
- MECH 5075/ | Integrated Product and Process Design | 6 |
- MECH 5076 | Principles of Computer-Aided Design | 6 |

* Non business and information technology students must select ERP 5110 as one of the two electives.

Minor in Electronic and Social Commerce

The minor in electronic and social commerce requires the following 15 hours of coursework:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 5041</td>
<td>Digital Commerce and the Internet of Things</td>
<td>3</td>
</tr>
<tr>
<td>ISA 4355</td>
<td>Technology Management for Business</td>
<td>3</td>
</tr>
<tr>
<td>ISA 5251</td>
<td>Technological Innovation Management and Leadership</td>
<td>3</td>
</tr>
<tr>
<td>ISA 5168</td>
<td>Law and Ethics in E-Commerce</td>
<td>3</td>
</tr>
<tr>
<td>ISA 5085</td>
<td>Computer Technology</td>
<td>3</td>
</tr>
<tr>
<td>ISA 5086</td>
<td>Prototyping for Human-Computer Interactions</td>
<td>3</td>
</tr>
<tr>
<td>MKT 5310</td>
<td>Digital Marketing and Promotions</td>
<td>3</td>
</tr>
<tr>
<td>ISA 5080</td>
<td>Marketing Strategy</td>
<td>3</td>
</tr>
</tbody>
</table>

Four courses from the following list: 12

- ISA 4355 | Technology Management for Business | 12 |
- ISA 5251 | Technological Innovation Management and Leadership | 12 |
- ISA 5085 | Computer Technology | 12 |
- ISA 5086 | Prototyping for Human-Computer Interactions | 12 |
- MKT 5310 | Digital Marketing and Promotions | 12 |
- ISA 5080 | Marketing Strategy | 12 |

Six credit hours of electives from any other ERP-designated courses at the 4000-level or above: 6

Total Credits: 15

Minor in Enterprise Resource Planning (ERP)

The minor in ERP requires the following 15 hours of coursework:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 5110</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ERP 2110</td>
<td>Introduction to Enterprise Planning</td>
<td>3</td>
</tr>
<tr>
<td>ERP 5110</td>
<td>Enterprise Resource Planning Systems Design and Implementation</td>
<td>3</td>
</tr>
</tbody>
</table>

Six credit hours of electives from any other ERP-designated courses at the 4000-level or above: 6

Total Credits: 15

Minor in Entrepreneurship

The minor in entrepreneurship requires the following 15 hours of coursework:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 5110</td>
<td>Introduction to Management and Entrepreneurship</td>
<td>3</td>
</tr>
<tr>
<td>BUS 5980</td>
<td>Business Models for Entrepreneurship and Innovation</td>
<td>3</td>
</tr>
<tr>
<td>MKT 5310</td>
<td>Digital Marketing and Promotions</td>
<td>3</td>
</tr>
</tbody>
</table>

Two courses from the following list: 6

- BUS 4150 | Customer Focus and Satisfaction | 6 |
- BUS 5580 | Strategic Management | 6 |
- ISA 4355 | Technology Management for Business | 6 |
- ISA 5041 | Digital Commerce and the Internet of Things | 6 |
- ISA 5064 | Web and Digital Media Development | 6 |
- ISA 5085 | Technology Management for Business | 6 |
- ISA 5086 | Prototyping for Human-Computer Interactions | 6 |
- ISA 5251 | Technological Innovation Management and Leadership | 6 |
The minor in mobile business and technology requires the following 15 hours of coursework:

- IS&T 4641: Digital Commerce and the Internet of Things
- IS&T 4335: Fundamentals of Mobile Technology for Business
- ERP 5240: Enterprise Application Development and Software Security

Two courses from the following list:

- ERP 4610: Customer Relationship Management in ERP Environment
- ERP 5310: Supply Chain Management Systems in an ERP Environment
- ERP 5210: Performance Dashboard, Scorecard and Data Visualization

---

The minor in finance requires the following 15 hours of coursework:

- ECON 1100: Principles Of Microeconomics
  or ECON 1200: Principles Of Macroeconomics

- FINANCE 2150: Corporate Finance I

Three additional FINANCE electives at the 3000 level or above (Undergraduate Research is acceptable)

Total Credits: 15

---

The minor in information science and technology requires the following 15 hours of coursework:

- IS&T 1750: Introduction to Management Information Systems
- IS&T 1551: Implementing Information Systems: User Perspective
- IS&T 1552: Implementing Information Systems: Data Perspective
- ERP 2110: Introduction to Enterprise Resource Planning

One other IS&T or ERP course at the 2000-level or above.

Total Credits: 15

---

The minor in management requires the following 15 hours of coursework:

- BUS 1110: Introduction to Management and Entrepreneurship

Four courses from the following list:

- BUS 2910: Business Law
- BUS 3115: Introduction to Teambuilding and Leadership
- BUS 4111: Business Negotiations
- BUS 4150: Customer Focus and Satisfaction
- BUS 5360: Business Operations
- BUS 5470: Human Resource Management
- BUS 5580: Strategic Management
- IS&T 4261: Information Systems Project Management
- ENG MGT 3320: Introduction to Project Management

Total Credits: 15

---

The minor in marketing requires the following 15 hours of coursework:

- ECON 1100: Principles Of Microeconomics
  or ECON 1200: Principles Of Macroeconomics
- MKT 3110: Marketing

Three courses from the following list:

- MKT 3210: Consumer Behavior
- MKT 5310: Digital Marketing and Promotions
- MKT 4150: Customer Focus and Satisfaction
- MKT 4580: Marketing Strategy
- ERP 4610: Customer Relationship Management in ERP Environment

Other marketing electives approved by the department (MKT 3000 and above)

Total Credits: 15

---

The minor in mobile business and technology requires the following 15 hours of coursework:

- IS&T 4641: Digital Commerce and the Internet of Things
- IS&T 4335: Fundamentals of Mobile Technology for Business
- ERP 5240: Enterprise Application Development and Software Security

Two courses from the following list:

- ERP 4610: Customer Relationship Management in ERP Environment
- ERP 5310: Supply Chain Management Systems in an ERP Environment
- ERP 5210: Performance Dashboard, Scorecard and Data Visualization
BUS 1110 Introduction to Management and Entrepreneurship (LEC 3.0)
The course provides an introduction to the basic concepts of management and entrepreneurship to provide an awareness of what functions and challenges are faced by managers and entrepreneurs in today’s global environment. Applications of the concepts to the organization, operations, and resources are discussed. Appropriate for all majors.
BUS 3305 Operations Management Essentials (LEC 1.5)
This course is an introduction to the essentials of operations management for running a business. It is designed for students planning to enter the MBA program who need this area and for non-business students who want some business background. Credit in this course cannot be applied to any major or minor in Business, IS&T, or Economics. Prerequisite: Senior or Junior Standing; 3.0 GPA required.

BUS 3705 Management Information Systems Essentials (LEC 1.5)
This course is an introduction to the essentials of management information systems for running a business. It is designed for students planning to enter the MBA program who need this area and for non-business students who want some business background. Credit in this course cannot be applied to any major or minor in Business, IS&T, or Economics. Prerequisite: Senior or Junior Standing; 3.0 GPA required.

BUS 3805 Mathematics and Statistics Essentials (LEC 1.5)
This course is an introduction to the essentials of mathematics and statistics for running a business. It is designed for students planning to enter the MBA program who need this area and for non-business students who want some business background. Credit in this course cannot be applied to any major or minor in Business, IS&T, or Economics. Prerequisite: Senior or Junior Standing; 3.0 GPA required.

BUS 4000 Special Problems (IND 0.0-6.0)
Problems or readings on specific subjects or projects in the department. Consent of instructor required.

BUS 4001 Special Topics (LEC 0.0-6.0)
This is designed to give the department an opportunity to test a new course. Variable title.

BUS 4099 Undergraduate Research (IND 0.0-6.0)
Designed for the undergraduate student who wishes to engage in research. Not for graduate credit. Not more than six credit hours allowed for graduation credit. Subject and credit to be arranged with the instructor.

BUS 4111 Business Negotiations (LEC 3.0)
The purpose of this course is to understand the practices and processes of negotiation for negotiating successfully in a variety of settings. The course is designed to be relevant to the broad spectrum of negotiation problems faced by managers, consultants, etc. Because almost everyone negotiates all the time, this course is relevant to almost any student. Prerequisites: At least Junior status.

BUS 4150 Customer Focus and Satisfaction (LEC 3.0)
Major emphasis is given to the concept of customer focus, with coverage of techniques for obtaining customer needs, measuring customer satisfaction, developing products and services to satisfy customers, and maximizing the benefits of customer feedback. A semester long HoQ project will be done. Prerequisites: MKT 3110 or MKT 3105 or ENG MGT 3510. (Co-listed MKT 4150).

BUS 4675 International Business (LEC 3.0)
This survey course will deal with business concepts, analytical processes and philosophical bases for international business operations. Emphasis is on environmental dynamics, multinational business organizations, cultural and economic constraints, unique international business practices and international operations, strategy and policy.

BUS 4970 Senior Business Design I (LEC 1.0)
In this course, students will become familiar with the principles of entrepreneurship; learn about the basic purpose, content and structure of business plans; and develop business presentation skills through practice. At the end of the semester, student teams will give presentations to a bank in an attempt to secure a loan to run the business the following semester. Prerequisite: Senior Standing.

BUS 4980 Senior Business Design II (LEC 2.0)
In this course, students will be expected to carry out the business plans created in Bus 4970. Progress reports are submitted roughly every 3 weeks during the semester. At the end of the semester, students terminate the business organization and profits are donated to a non-profit organization in the team's name. Prerequisite: Bus 4970.

BUS 5000 Special Problems (IND 0.0-6.0)
Problems or readings on specific subjects or projects in the department. Prerequisite: Admission to the MBA program.

BUS 5001 Special Topics (LEC 0.0-6.0)
This is designed to give the department an opportunity to test a new course. Variable title.

BUS 5040 Oral Examination (IND 0.0)
After completion of all other requirements, oral examinations for on-campus M.B.A./Ph.D. students may be processed during inter session. Off-campus M.B.A. students must be enrolled in oral examination and must have paid an oral examination fee at the time defense/oral examination (oral/written). All other students must enroll for credit commensurate with uses made of facilities and/or faculties. In no case shall this be for less than three (3) semester hours for resident students.

BUS 5080 Practicum (IND 0.0-6.0)
This course is similar to the Bus 5085 Internship course. The difference is that this course is intended for students who are already employed by an organization for whom they wish to continue working. Prerequisite: Bus Core.

BUS 5085 Internship (IND 0.0-6.0)
Students apply critical thinking skills and discipline specific knowledge in a work setting based on a project designed by the advisor and employer. Activities will vary depending on the student's background and the setting. Requires major report and formal presentation to sponsoring organization. Prerequisite: Graduate standing.

BUS 5099 Research (IND 0.0-9.0)
Research investigation of an advanced nature leading to a major report suitable for publication in a journal or in a conference proceedings. Prerequisite: Permission of the instructor.

BUS 5105 Graduate Management and Business Law Essentials (LEC 1.5)
This course is an introduction to the essentials of management and business law for running a business. It's designed for students planning to enter the MBA program who need this area and for non-business students who want some business background. Credit cannot be applied to any major or minor in Business, IS&T, or Economics. Additional case study or report required. Prerequisite: Bachelor Degree.

BUS 5115 Teambuilding and Leadership in Business Settings (LEC 3.0)
This course covers leadership styles, principles, models, issues, and applications through analytical and intellectual examination. Key components of teams are introduced, with opportunities to practice and develop both leadership and teambuilding skills. Case studies required.
BUS 5205 Graduate Accounting Essentials (LEC 1.5)
This course is an introduction to the essentials of financial and managerial accounting for running a business. It is designed for students planning to enter the MBA program who need this area and for non-business students who want some business background. Credit cannot be applied to any major or minor in Business, IS&T, or Economics. Additional case or report required. Prerequisite: Bachelor Degree.

BUS 5230 Financial Statement Analysis (LEC 3.0)
Analysis and interpretation of financial statements for profitability analysis, credit analysis, and other business analyses that rely on financial data. Introduces emerging roles of accounting analytics. Illustrates data analytics concepts and techniques to detect earning management, predict fraud, and to provide insights into other business strategies. Prerequisite: FINANCE 2150 or Graduate Standing.

BUS 5305 Graduate Operations Management Essentials (LEC 1.5)
This course is an introduction to the essentials of operations management for running a business. It is designed for students planning to enter the MBA program who need this area and for non-business students who want some business background. Credit cannot be applied to any major or minor in Business, IS&T, or Economics. Additional case study or report required. Prerequisite: Bachelor Degree.

BUS 5360 Business Operations (LEC 3.0)
This course examines the concepts, processes, and institutions that are fundamental to an understanding of business operations within organizations. Emphasis is on the management and organization of manufacturing and service operations and the application of quantitative methods to the solution of strategic, tactical and operational problems. Prerequisites: BUS 1210 or ENG MGT 2211; at least Junior standing; and one of the following: STAT 1111, STAT 1115, STAT 1116, STAT 3111, STAT 3113, STAT 3115, or STAT 3117.

BUS 5470 Human Resource Management (LEC 3.0)
The course examines employee selection, performance appraisal, training and development, compensation, legal issues, and labor relations. Prerequisite: Bus 1110.

BUS 5580 Strategic Management (LEC 3.0)
Study of the formulation and implementation of corporate, business and functional strategies designed to achieve organizational objectives. Case studies and research reports may be used extensively. Prerequisites: MKT 3110 or Eng Mgt 3510; Finance 2150 or Eng Mgt 3200; Senior standing.

BUS 5705 Graduate Management Information Systems Essentials (LEC 1.5)
This course is an introduction to the essentials of management information systems for running a business. It is designed for students planning to enter the MBA program. Credit in this course cannot be applied to any major or minor in Business, IS&T, or Economics. Additional case or report required. Prerequisite: Bachelor Degree.

BUS 5805 Graduate Mathematics and Statistics Essentials (LEC 1.5)
This course is an introduction to the essentials of mathematics and statistics for running a business. It is designed for students planning to enter the MBA program who need this area and for non-business students who want some business background. Credit cannot be applied to any major or minor in Business, IS&T, or Economics. Additional case study or report required. Prerequisite: Bachelor Degree.

BUS 5896 Project Research (IND 0.0-9.0)
The research project will involve students applying research techniques and discipline specific knowledge working on a project designed by the advisor, often working with a business organization. Requires major report and formal presentation to sponsoring organization. Prerequisite: Permission of the instructor.

BUS 5910 Privacy and Information Security Law (LEC 3.0)
Explores issues concerning the use, disclosure, and protection of information (personal, organizational, health, and financial) from a legal perspective. A focus on understanding, planning, protecting, and responding to data breaches and other information risk and threats. Case studies based on litigation are reviewed and analyzed. Assumes MIS familiarity.

BUS 5980 Business Models for Entrepreneurship and Innovation (LEC 3.0)
This course uses problem based learning to expand student insight into the nature, development, and application of business models. It increases the practical skills and knowledge required to generate original models of value creation for both entrepreneurial start-ups and corporate innovation. Prerequisite: Senior or graduate standing.