IT’S TIME TO EARN YOUR

GRADUATE CERTIFICATE

Missouri S&T’s Business and Information Technology Department offers nearly a dozen graduate certificates in fast-growing industries like data science, digital media, enterprise resource planning, and many others to keep you current and competitive.
BUSINESS ANALYTICS AND DATA SCIENCE

The Graduate Certificate in Business Analytics and Data Science is one of three graduates certificates offered by cooperating departments at Missouri S&T to fulfill the needs in the area described as “Big Data.”

Big Data is an emerging phenomenon. Computing systems today are generating 15 petabytes of new information every day—eight more times than the combined information in all the libraries in the U.S.; about 80% of the data generated every day is textual and unstructured data. Data analytics facilitates realization of objectives by identifying trends, creating predictive models for forecasting, and optimizing business processes for enhanced performance.

Required core courses:
- IST 5420 Introduction to Big Data Analytics
- IST 6450 Information Visualization

Core courses (choose one):
- ERP 5410 Use of Business Intelligence
- IST 5001 Data Methods in Python
- CSc 6604 Cloud Computing and Big Data Management
- CSc 5420 Data Mining and Machine Learning
- CSc 6330 Clustering Algorithms
- CSc 5204 Regression Analysis
- Stat 5814 Applied Time Series Analysis

Elective courses (choose one):
- IST 6443 Information Retrieval and Analysis
- IST 6444 Essentials of Data Warehouses
- IST 6445 Database Marketing
- IST 6448 Building the Data Warehouse
- IST 6887 Research Methods in Business and IS&T
- ERP 5210 Perform. Dashboard, Scorecard and Data Visualization
- ERP 6610 Adv. Customer Relationship Mgmt in ERP Environment
- ERP 6620 Enterprise Performance Dashboard Prototyping
- BUS 6425 Supply Chain and Project Management

Boost your career and gain new skills

If you’ve been considering a master’s degree but aren’t ready to commit to a specific area of study, you should consider one of Missouri S&T’s graduate certificate programs. Whether you want to enhance your professional expertise or change careers, our programs are designed to help working professionals get their goals within reach.

Each of our 11 certificate programs is made up of four graduate-level courses focused on a specific concentration within a field of study.

Most courses are offered both on campus and via distance education, giving you the flexibility and convenience your need.

Questions?
Give us a call at 573-341-7216 or visit bit.mst.edu to learn more about our graduate certificate options.
The Graduate Certificate in Business Intelligence focuses on the technologies that allow an organization to make effective business decisions based on operational data pulled together from many different sources inside an organization. The target audience consists of any individual who would manage any type of IT professionals, database administrators, business analysts, and any person who would need to understand the technologies behind their job functions.

**Required Core Courses:**
- ERP 5410 Use of Business Intelligence
- ERP/IST 6444 Essentials of Data Warehouses

**Elective courses (choose two):**
- ERP 5110 ERP Systems Design and Implementation
- ERP 5210 Perform. Dashboard, Scorecard, and Data Visualization
- IST 6443 Information Retrieval & Analysis
- IST 6445 Database Marketing
- ERP 6220 Enterprise Performance Dashboard Prototyping

Digital media is growing as consumers change the way they access information. In fact, Jupiter Research is projecting that connected home service revenue, for homes accessing digital media, will grow from $20 billion in 2012 to $60 billion in 2017. Students in this certificate program will acquire the skills and knowledge to create, design and analyze digital media. The focus will be on the media itself, the social/digital network that connects these media, the interfaces that connect these media with users, and the application of these skills in business and other creative contexts. Thus this certificate program will address the pressing demand and opportunities for graduates with advanced knowledge and skills in areas such as networked communication and marketing, web-based media creation and design, and methods for designing and building effective human-media interfaces.

**Required Core Course:**
- IST 6654 Adv. Web and Digital Media Development

**Core courses (choose two):**
- IST 5885 Human-Computer Interaction
- IST 6680 Advanced Web and New Media Studies
- MKT 5310 Digital Marketing and Promotions

**Elective courses (choose one):**
- IST 5652 Advanced Web Development
- IST 5886 Prototyping Human-Computer Interactions
DIGITAL SUPPLY CHAIN MANAGEMENT

This certificate is designed to give the student the tools and ideas that help shape and define the various components of value creation. Students can gain knowledge and skills in the full spectrum of supply chain activities: supplier relationships, purchasing management, operations and inventory management, logistics and transportation, quality management, and information technology.

Required Core Courses:
- ERP 5110 ERP Systems Design and Implementation
- ERP 5310 Supply Chain Mgmt Systems in an ERP Environ.

Core courses (choose one):
- BUS 6425 Supply Chain and Project Management
- ME 5708 Rapid Product Design and Optimization

Elective courses (choose one):
- ERP 5410 Use of Business Intelligence
- ERP 6120 Erp Systems Configuration and Integration
- ME 5757 Integrated Product and Process Design
- ME 5656 Design for Manufacture
- ME 5760 Probabilistic Engineering Design
- ME 5763 Principles and Practice of Computer Aided Design

ELECTRONIC & SOCIAL COMMERCE

Social commerce is just one sub-set of e-commerce, however it is growing rapidly. According to a Forbes magazine article “The Six Pillars of Social Commerce”, while the principle of social commerce has been successful since the start of E-bay, the rise of social media has contributed to its recent substantial growth. The Department of Business and Information Technology (BIT) has leveraged its' strengths in both business and technology for this certificate, which is designed to create successful students by developing skills in technological business practices that will provide opportunities for succeeding in today’s fast paced world.

Required Core Courses:
- IST 6641 Advanced Electronic and Mobile Commerce

Core courses (choose one):
- BUS 6723 Corporate Information Systems Management
- IST 5251 Technological Innovation Mgmt and Leadership

Elective courses (choose two):
- IST 5652 Advanced Web Development
- IST 5168 Law and Ethics in E-Commerce
- IST 5885 Human Computer Interaction
- IST 5886 Prototyping Human-Computer Interactions
- IST 6335 Mobile Technology for Business
- IST 6445 Database marketing
- IST 6680 Advanced Web and New Media Studies
- MKT 5310 Digital Marketing and Promotions
- MKT 6580 Advanced Marketing Strategy
ENTERPRISE RESOURCE PLANNING

Corporations worldwide have focused on improving business processes for the past two decades. In fact, while most Fortune 500 companies have already adopted Enterprise Resource Planning (ERP) systems, now many midsize companies are also planning ERP implementations. With a commitment to keep pace with these changes in business processes and technology, the University of Missouri system joined SAP’s University alliance and Microsoft’s University Alliance programs in order to continue and expand classroom capabilities for integrating ERP software into the curriculum.

ERP can be viewed as a combination of business management practice and technology, where Information Technology integrates with a company’s core business processes to enable the achievement of specific business objectives. This certificate prepares students for positions as both technical and business consultants in the ERP field.

Required Core Courses:
- ERP 5110 ERP Systems Design and Implementation
- ERP 6120 ERP Systems Configuration and Integration

Elective courses (choose two):
- ERP 5240 Enterprise Portal and Mobile Application Development
- ERP 5410 Use of Business Intelligence
- ERP 5310 Supply Chain Management Systems in an ERP Environment
- ERP 5210 Performance Dashboard, Scorecard and Data Visualization
- ERP 5510 ERP Systems Administration
- ERP 6610 Adv. Customer Relationship Mgmt in ERP Environment
- ERP/IST 6444 Essentials of Data Warehouses
- ERP 6220 Enterprise Performance Dashboard Prototyping

ENTREPRENEURSHIP & TECHNOLOGICAL INNOVATION

Change and growth in Missouri and America require the training, nourishing, and flourishing of entrepreneurs. Many college students, however, do not yet recognize the entrepreneurial spirit in themselves. While these students are not sure if they have what it takes to drive innovation, recent entrepreneurship research indicates that many of the skills and much of the knowledge of successful entrepreneurs can be developed and taught in the classroom. The Department of Business and Information Technology has created this certificate to spark the entrepreneurial spirit in the students of Missouri S&T, and provide them with a solid foundation on which to build.

Required Core Courses:
- BUS 5980 Business Models for Entrepreneurship and Innovation
- MKT 5310 Digital Marketing and Promotions

Elective courses (choose two):
- BUS 5580 Strategic Management
- BUS 6150 Advanced Customer Focus and Satisfaction
- IST 5251 Technological Innovation Management and Leadership
- IST 6654 Advanced Web and Digital Media Development
- IST 5886 Prototyping Human Computer Interactions
- IST 6335 Mobile Technology for Business
HUMAN-COMPUTER INTERACTION & USER EXPERIENCE

There is a growing demand within industry for workers with expertise in human-computer interaction (HCI), who generally hold titles such as interface designer; usability researcher analyst; usability engineer; user experience specialist; or information architect. HCI specialists bridge the gap in organizations between groups who build the technologies and groups who use the technologies.

This certificate prepares students for positions as HCI specialists, and provides working IT professionals with additional skills to aid in the design and evaluation of usable systems.

Required Core Courses:
- IST 5885 Human-Computer Interaction
- IST 5886 Prototyping Human-Computer Interactions
- IST 5887 Human-Computer Interaction Evaluation

Elective courses (choose one):
- IST 6680 Advanced Web and New Media Studies
- IST 6887 Research Methods in HCI

MANAGEMENT & LEADERSHIP

The Department of Business and Information Technology created this certificate in order to better enable students to manage through the use of technology. Understanding technology is becoming ever more critical in business as a tool used by efficient and effective managers. These leaders not only understand the managerial process and how to inspire others as a true leader, but also how to harness technology to expedite the process.

This certificate is designed to prepare students to be the leaders of the future. It does so by incorporating management theories, technological savvy and leadership skills to create a student who is ready for the challenges of a fast paced managerial position.

Required Core Course:
- BUS 6121 Team-building and Leadership

Elective courses (choose three):
- BUS 5580 Strategic Management
- IST 5251 Technological Innovation Mgmt and Leadership
- IST 6261 Adv. Information Systems Project Management
- IST/PHILOS 5168 Law and Ethics in E-Commerce
- BUS 6111 Business Negotiations
- MKT 6150 Advanced Customer Focus and Satisfaction
- BUS 5470 Human Resource Management
- EMGT 5320 Project Management
Interest in the use of mobile technology among organizations has seen a strong, upward trend over the past few years. The proliferation of smart phone and tablet devices has presented organizations with new challenges in creating and developing a coherent strategy associated with this innovation. In order to create this strategy, organizations need an understanding of the mobile industry in general and specific technologies supporting the trend. People capable of creating and maintaining mobile technology strategies are needed, but the in-depth education necessary for these people is limited.

This certificate is designed to cover the mobile industry as well as the technologies, devices, operating systems, user interface design, and tools of mobile applications. The focus will be on the mobile industry and technologies that allow an organization to make decisions in this dynamic domain.

**Required Core Courses:**
- IST 6335 Mobile Technology for Business
- ERP 5240 Enterprise Portal and Mobile Application and Development

**Elective courses (choose two):**
- ERP 5310 Supply Chain Mgmt Systems in an ERP Environment
- ERP 5210 Performance Dashboard, Scorecard, and Data Visualization
- ERP 6610 Adv. Customer Relationship Mgmt in ERP Environment
- IST 5886 Prototyping Human-Computer Interactions
- IST 5652 Advanced Web Development

This certificate aims to equip students with a set of tools that will allow them to understand Project Management Institute (PMI) standards in the project management area, to successfully manage resources, and to analyze, evaluate, and improve complex projects. Project managers are in demand and the departments mission of blending business and technology allows graduates to perform in this role.

**Required core courses:**
- IST 6261 Adv. Information Systems Project Management
- EMGT 5320 Project Management
- EMGT 6322 Case Studies in Project Management
- EMGT 6323 Global Project Management

**BUSINESS PROJECT MANAGEMENT**

Project managers identify problems, make sound decisions, and organize and manage complex projects. This certificate aims to equip students with a set of tools that will allow them to understand Project Management Institute (PMI) standards in the project management area, to successfully manage resources, and to analyze, evaluate, and improve complex projects.

**Required core courses:**
- BUS 6425 Supply Chain and Project Management
- BUS 6723 Corporate Information Systems Management
- EMGT 5320 Project Management
- EMGT 6322 Case Studies Project Management