



## Earn a Bachelor of Science – Information Science & Technology with Enterprise Resource Planning (ERP) Emphasis Area and Missouri S&T-SAP Certificate of Excellence

### Offered by the Business & Information Technology Department

#### Overview

Corporations world-wide have focused on improving business processes for the past two decades. In their efforts to use information technology more effectively in enabling business processes, we have seen the emergence and growth of Enterprise Systems, and more recently, Extended Enterprise Systems such as Supply Chain Management (SCM), Customer Relationship Management (CRM), Strategic Enterprise Management (SEM), and Business Intelligence. Most Fortune 500 companies have already adopted Enterprise Resource Planning (ERP) systems and 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 systems can be used to reinforce many of the concepts covered in the business discipline. ERP systems incorporate state-of-the-art technology, providing a comprehensive teaching tool for business and for information systems. Universities that have successfully incorporated an ERP system into their curricula find unprecedented student demand for those subjects. There is also an increasing demand for ERP-related research.

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. The Missouri S&T program prepares undergraduate and graduate students for positions as both technical and business consultants in the ERP field.

#### **An Emphasis Area in Enterprise Resource Planning (ERP) and Missouri S&T - SAP Certificate of Excellence**

An Information Science & Technology student can earn an emphasis area in Enterprise Resource Planning (ERP) by completing ERP246 Introduction to ERP and any three of these courses listed below:

- ERP 345 Use of Business Intelligence
- ERP 346 ERP Systems Design and Implementation
- ERP 347 Supply Chain Management Systems
- ERP 348 Strategic Enterprise Management Systems
- ERP 349 ERP System Administration
- ERP 442 Customer Relationship Management in ERP Environment\*
- ERP 444/IST444 Essentials of Data Warehouse
- ERP 446 ERP Systems Configuration and Integration\*
- ERP 448 Enterprise Performance Management System (EPMS) Prototyping\*

\* require application to ERP Graduate Certificate at the senior year

**Students with an Emphasis Area in ERP will be eligible for a Missouri S&T-SAP Certificate of Excellence, authorized by the SAP Corporation.**



## Enterprise Resource Planning Courses

### **ERP 246 Introduction to Enterprise Resource Planning (ERP)**

**Prerequisite: IST 50**

Fundamentals of enterprise resource planning (ERP) systems concepts, and the importance of integrated information systems in an organization. The focus of this course is on illustrating procurement, production, and sales business processes using ERP software. Use of SAP's ERP Business Suite as an example ERP system.

### **ERP 345 Use of Business Intelligence**

**Prerequisites: IST 223 or equivalent experience, ERP 246 or BUS426 or ERP346 (may be taken concurrently)**

Application of "intelligent" techniques from CS (AI, data mining), and OR (stochastic modeling, simulation, forecasting) to business decision-making. Overview of theory, with a focus on application to business problem solving. Use of SAP Business Intelligence (BI) as a tool to access and present data, search for patterns, identify exceptions, forecast, optimize, and schedule resources.

### **ERP 346 Enterprise Resource Planning Systems (ERP) Design and Implementation**

**Prerequisites: IST 50**

This course provides a technical overview of Enterprise Resource Planning Systems and their impact on organizations. SAP's ERP system is introduced to illustrate the concepts, fundamentals, framework, general information technology context, the technological infrastructure, and integration of business enterprise-wide applications.

### **ERP 347 Supply Chain Management Systems**

**Prerequisite: ERP 246 or BUS426 or ERP346 (may be taken concurrently)**

The course will study the need for supply chain integration and the challenges of managing complex interfaces. This course focuses on the systems approach to the planning, analysis, design, development, and evaluation of supply chain management. SAP's Supply Chain Management (SCM) or similar software is used to illustrate activities that lead to integration of information and material flows across multiple organizations in the supply chain including global supply chains.

### **ERP 348 Strategic Enterprise Management (SEM) Systems**

**Prerequisite: ERP 246 or BUS426 or ERP346 (may be taken concurrently)**

This course will study different strategic performance management systems including dashboards, management cockpit, scorecards, and strategy maps in an organization. SAP's Strategic Enterprise Management (SEM), BusinessObjects Xcelsius, or similar tools will be used to enhance student education with real world applications.

### **ERP349 ERP System Administration**

**Prerequisites: ERP 346**

System administration and performance monitoring practices for an Enterprise Resource Planning (ERP) system will be studied. Students will install an instance of an ERP system and establish user management attributes and system security.

### **ERP 442 (ERP401) Customer Relationship Management in ERP Environment**

**Prerequisite: ERP345**

This customer-centric course emphasizes identification (targeting), acquisition, retention, and development (expansion) of (profitable) customers. It also covers effective and efficient management of customers with utilization of information technology. The SAP CRM module and SAS Enterprise Miner are used to enhance student education with real world applications and prepare graduates for future career requirements.



**ERP444/IST444 Essentials of Data Warehouses**

**Prerequisite:** IST 223 or Comp Sci 304 or equivalent relational database experience

This course presents the topic of data warehouses and the value to the organization. It takes the student from the database platform to structuring a data warehouse environment. Focus is placed on simplicity and addressing the user community needs.

**ERP 446 Enterprise Resource Planning (ERP) Systems Configuration and Integration**

**Prerequisite:** ERP 346

Implementation and design practices for business processes in Enterprise Resource Planning (ERP) systems. The course will examine and apply techniques used in SAP ERP system for system configuration and integration, with a focus on Financial Accounting, logistics, Controlling, and production.

**ERP448 Enterprise Performance Management System (EPMS) Prototyping**

**Prerequisite:** ERP 345

This course will study implementation and design practices for enterprise performance management and monitoring systems with a focus on dashboards, balanced scorecard, and value based management. SAP's Strategic Enterprise Management (SEM), Business Object Xcelsius, or similar tools will be used for project implementation.

**Typical ERP Course Schedule**

<b><u>Fall ERP Course Schedule</u></b>	<b><u>Summer ERP Course Schedule*</u></b>	<b><u>Spring ERP Course Schedule</u></b>
ERP246 Intro ERP ERP 345 BI ERP 346 ERP ERP 347 SCM ERP 448 SEMS Prototyping or ERP 442 CRM	ERP 349 ERP System Administration ERP 3XX ERP System Customization & Programming ERP 3XX Enterprise Portal	ERP246 Intro ERP ERP 346 ERP ERP 348 SEMS ERP 446 ERP Configuration

\* Summer session is used for offering special topics. The above courses are some examples of courses that might be offered.



**Typical Course Plan for Bachelor of Science –Information Science & Technology with Enterprise Resource Planning (ERP) Emphasis Area**

**FRESHMAN YEAR**

First Semester	Credit
Bus 10-Introduction to College Success I1	0.5
English 20-Exposition & Argumentation	3
Math 4-College Algebra	3
Science Elective	3
IST 50-Information Systems	3
Laboratory w/ Science Elective	1
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	13.5

Second Semester	Credit
Bus 11-Introduction to College Success	0.5
Psych 50-General Psychology	3
Math 12-Business Calculus	4
History	3
IST 51-Implementation of IS I	3
Econ 121 or 122-Micro or Macro Econ	3
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	16.5

**SOPHOMORE YEAR**

First Semester Credit	Credit
BUS 110-Mgt & Organizational Behavior	3
BUS 120-Financial Accounting	3
IST 151-Implementation of IS II	3
Stat 211-Statistical Tools for Decision Making	3
English 65 or Tech Com 65-Intro to Tech Com	3
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Second Semester	Credit
Speech 85-Principles of Speech	3
Econ 121 or 122-Micro or Macro Econ	3
Science Elective	3
Mktg 311-Basic Marketing	3
<b>ERP 246-Introduction to ERP</b>	<b>3</b>
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**JUNIOR YEAR**

First Semester Credit	Credit
Fine Art, Social Science, or Humanities Elective	3
<b>IST Emphasis Area - ERP 346</b>	<b>3</b>
Fin 250-Corporate Finance	3
IST 233-Networks and Communications	3
IST 223-Database Management	3
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Second Semester	Credit
<b>IST Emphasis Area - ERP 347 or ERP348*</b>	<b>3</b>
Pol Sci 90-American Government	3
IST 243-Systems Analysis	3
IST 231-Computer Components and Operation	3
Speech or Tech Com Elective	3
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**SENIOR YEAR**

First Semester Credit	Credit
Fine Art, Social Science, or Humanities Elective	3
<b>IST Emphasis Area - ERP 345</b>	<b>3</b>
Bus 397-Senior Design I	1
Free Electives	6
IST 286-Web & New Media Development	3
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Second Semester	Credit
Bus 398-Senior Design II	2
IST 241-E-Commerce	3
English 260 or Tech Com 260-Practicum in Technical Communication	3
Free Electives **	6
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	14

**\* Semester eligible for Missouri S&T-SAP Certificate of Excellence application**