



## Earn a Graduate Certificate in ERP (Enterprise Resource Planning)

### 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.

#### Graduate Certificate in Enterprise Resource Planning

A graduate level student may receive an ERP Graduate Certificate from the Information Science and Technology program at Missouri S&T by completing four courses, consisting of:

ERP 346	ERP Systems Design and Implementation
ERP 446	ERP Systems Configuration and Integration

#### and two of the following

ERP 345	Use of Business Intelligence
ERP 347	Supply Chain Management Systems
ERP 348	Strategic Enterprise Management
ERP 349	ERP Systems Administration
ERP 442	Customer Relationship Management in ERP Environment*
ERP 448	Strategic Enterprise Management System Prototyping

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

#### Entrance into IST M.S. Graduate Program:

A student who completes a Graduate Certificate at Missouri S&T, having earned a grade of "B" or better in each of the certificate courses, may be admitted to the M.S. program in Information Science & Technology. The normal application process will be followed, but the minimum undergraduate GPA and GRE score requirement will be waived. Normal course prerequisites still apply.

## Enterprise Resource Planning Courses

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

**Prerequisite: IST 51**

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 as an example ERP system.

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

**Prerequisites: ERP 346 or (ERP 246 previously, and ERP 346 concurrently), and Fundamental relational database knowledge..**

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 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**

This course provides a technical overview of Enterprise Resource Planning Systems and their impact on organizations. SAP 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 346 or (ERP 246 previously, and ERP 346 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. The course discusses 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 346 or (ERP 246 previously, and ERP 346 concurrently).**

This course will study the use of information technology for the formulation and implementation of strategy in the organization. SAP's Strategic Enterprise Management (SEM) will be used to study the development of business plans, definition of key performance indicators, and evaluation of business. SEM's Business Process Simulation will be used to emphasize the role of an integrated business.

### **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 in summer 2009) 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.



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

**Prerequisite: ERP 346**

This course will look at design and implementation practices for business processes in Enterprise Resource Planning (ERP) systems. Course will examine and apply techniques used in SAP R/3 for system configuration and integration with a focus on finance, materials management and sales and distribution modules.

**ERP448 Strategic Enterprise Management (SEM) System Prototyping**

**Prerequisite: ERP 346, ERP 345 previously or concurrently, some experience in accounting and strategic management, and Graduate Standing**

This course will study implementation and design practices for enterprise performance measurement and monitoring systems with a focus on balanced scorecard and value based management. SAP's Strategic Enterprise Management (SEM) will be used as a tool for project implementation.

**Typical ERP Course Schedule**

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

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

<sup>R</sup> : Required courses

**Typical Course Plan for MS IST Student Pursuing an ERP Certificate**

<u>Fall enrollment</u>	<u>Spring enrollment</u>
Fall 1 IST 385 HCI ERP 346 ERP <sup>R</sup> ERP 345 BI or ERP347 SCM Spring IST 361 Leadership ERP 446 ERP Configuration <sup>R</sup> ERP 348 SEMS, ERP 401 CRM, or IST 444 Fall 2 ERP 448 SEMS Prototyping IST443 Information Retrieval & Analysis IST 351 Project Management IST 336* (if not needed, take ERP345 or ERP 347)	Spring 1 ERP 346 ERP <sup>R</sup> IST 361 Leadership ERP 348 SEMS Fall 1 ERP 345 BI or ERP 347 SCM IST351 Project Management IST 385 HCI IST 336* (if not needed, take both ERP345 and ERP347 or take IST443) Spring 2 ERP 446 ERP Configuration <sup>R</sup> ERP 401 CRM IST 444 Data Warehouse



**Typical Course Plan for a MBA Student Pursuing an ERP Certificate**

<b>Fall Enrollment</b>	<b>Spring enrollment</b>
Fall 1 BUS426 or ERP 346	Spring 1 BUS426 or ERP346
Spring ERP348 or ERP 401 CRM ERP 446	Fall 1 Two of the followings ERP 345 BI ERP 347 SCM ERP 448 SEMS Prototyping
Fall 2 One of the followings ERP 345 BI ERP 347 SCM ERP 448 SEMS Configuration	Spring 2 ERP 446 ERP Configuration