Enterprise Resource Planning Courses

Offered by the Department of Business & Information Technology, http://erp.mst.edu   erp@mst.edu   573-341-6436

Our ERP Program…

Technology
Based
Creative Learning

… the **ERP program** at Missouri S&T has **prepared me extremely well for my life at Accenture**. … The consultants and teachers… thought I was **an experienced hire** with **extensive experience in ERP and consulting**. …thank you and the other…

Joseph Pieczynski
Accenture

… The professors **teach** the students **knowledge of ERP**, by applying what they have learned **through their real-world experiences** and **applying their knowledge to the classroom…**

Pam Ryder
Union Pacific

ERP 2110: Introduction to Enterprise Resource Planning (ERP)
Prerequisite: IST 1750
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 4120 (4001): ERP Software Development
Prerequisite: ERP 2110
This course provides knowledge and skills in designing and configuring business processes to implement an Enterprise Resource Planning (ERP) software system. The software system will integrate financial accounting, logistics, production, and management accounting information systems with a mobile-enabled user interface. SAP S/4HANA or similar ERP systems are used.

ERP 4220: Introduction to Enterprise Decision Dashboards
Prerequisite: IST 1750
Study design and implementation principles for enterprise decision dashboards utilizing data warehouses and databases to support visual analytics. SAP Predictive Analytics/Lumira, HANA Cloud Platform (HCP), HANA Studio, Fiori, SAS Viya or similar tools are used for practical assignments.

ERP/IST 4444: Introduction to Data Warehouse
Prerequisite: IST 1750 or relational database experience
This course presents the topic of data warehouses and their 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's needs.

ERP 4610: Customer Relationship Management in ERP Environment
Prerequisite: ERP 2110 or preceded or accompanied by ERP 5110
The course emphasizes identification (targeting), acquisition, retention, and development (expansion) of (profitable) customers, as well as effective and efficient management of customers, using information technology. SAP CRM and SAS Enterprise Miner are used.

ERP 5110: Enterprise Resource Planning Systems (ERP) Design and Implementation
Prerequisites: IST 1750
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, technological infrastructure, and integration of business enterprise-wide applications.

ERP 5130: ERP Enterprise Resource Planning in Small and Mid-size Enterprises
Prerequisite: (BUS1210 AND ERP2110) or ERP5110
The course provides an overview of enterprise applications for small and midsize companies. The course provides an overview of the new generation of business applications for small and midsize companies. Microsoft Dynamics AX 2012 will be introduced to illustrate the enterprise-wide application.

ERP 5210: Performance Dashboards, Scorecard, Data Visualization
Prerequisite: ERP 2110 or preceded or accompanied by ERP 5110
This course studies different performance management systems including dashboards, balanced scorecards, and strategy maps in an organization. SAP's HANA, BW on HANA, Predictive Analytics/Lumira, and Design Studio, Tableau, and SAS Viya Analytics are used to develop the dashboard applications.

ERP 5240: Enterprise Application Development and Software Security
Prerequisites: Programming knowledge and either ERP 2110 or preceded or accompanied by ERP 5110
This course provides a conceptual foundation and hands-on experience in web-based (HTML5) application development deployed through an enterprise platform. SAP Enterprise development tools will be used to build these apps, using the SAP HANA Cloud Platform. This course also covers cybersecurity from a software security perspective.

ERP 5310: Supply Chain Management Systems
Prerequisite: ERP 2110 or preceded or accompanied by ERP 5110
The course studies the need for supply chain integration and the challenges of managing complex interfaces using the systems approach for the planning, analysis, design, development, and evaluation of the supply chain. SAP's ERP ECC, S/4 HANA, SCM, and SAS Visual Analytics, Visual Statistics, and Viya are used in assignments.

ERP 5410: Use of Business Intelligence
Prerequisites: IST 1750 and (ERP 2110 or preceded or accompanied by ERP 5110)
This course introduces data-oriented techniques for business intelligence. Topics include Business Intelligence architecture, Business Analytics, and Enterprise Reporting. SAP Business Information Warehouse, BusinessObjects, or similar tools will be used to access and present data, generate reports and perform analysis.

ERP 5510: ERP System Administration
Prerequisites: ERP 5110
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 6120: Enterprise Resource Planning (ERP) Systems Configuration and Integration
Prerequisite: ERP2110, ERP 5310, or ERP 5110
Implementation and design practices for business processes in Enterprise Resource Planning (ERP) systems. The course examines and applies techniques using SAP S/4HANA ERP or similar for configuration and integration with a focus on financial accounting and logistics. Fiori configuration will be examined to develop an ERP user interface.

ERP 6220: Data Modeling & Visualization Prototyping for Enterprise Decision Dashboards
Prerequisite: One of the following: IST 3423, IST 4444, IST 5423, ERP 5410, ERP 6444, or IS&T 6444
Study integration of data modeling, data warehouse, and visualization prototyping in the design and implementation of enterprise decision dashboards for descriptive, predictive, and prescriptive analytics. Project implementations use SAP HANA Studio, Fiori, Predictive Analytics, Design Studio/Eclipse IDE, and SAS Viya.

ERP 6444: Essentials of Data Warehouses
Prerequisite: IST 3423 or Comp Sci 304 or equivalent relational database experience
This course presents the topic of data warehouses and their 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's needs.

ERP 6610: Advanced Customer Relationship Management
Prerequisite: ERP 2110 or preceded or accompanied by ERP 5110
Identification (targeting), acquisition, retention, and development (expansion) of (profitable) customers. Effective and efficient management of customers, using IT. SAP CRM and SAS Enterprise Miner were used. Research paper and presentation required.

ERP Courses, Computer & Software Skills, Curriculum Mapping

ERP & Non-ERP Courses	Course C3:F28	Course Title	Course Supplement Software/SAP Modules Mappings	Spring	Summer	Fall	SAP Certificate Courses (3 courses)	SAS Undergraduate	SAS Graduate	Major Electives for BIT IST & Business students	ERP Minor (5 courses)	Digital Supply Chain Minor (5 courses)	ERP	Business Intelligence	Digital Supply Chain
ERP Courses	ERP 2110	Intro to ERP	SAP S/4HANA & ECC: FI, MM, SD, PP, CO, HR/HCM	X		X	X			major core*	R				
	ERP 4120/4001	ERP Software Development	SAP S/4 HANA & ECC Configuration: FI, MM, SD, PP, CO and Fiori UI Design and Development	X						E	R2 (note 2)		E		
	ERP 4220	Introduction to Enterprise Decision Dashboard Prototyping	SAP S/4 HANA, SAP HANA Studio, HANA Cloud Platform (HCP), SAP Web IDE, Fiori, SAP Analytics Cloud (SAC), SAP Design/Lumira Studio, SAS Visual Analytics & Statistics			X	X	R		E	E				
	ERP/IST 4444	Introduction to Data Warehouse	SAP BW/BI: Data Warehouse constructions, ETL, Analytics, Reports, BEx Queries, SAP HANA Studio	X			X			E	E				
	ERP 4610	Customer Relationship Management	SAP CRM: Marketing/Campaign Mgt.,Lead & Opportunity Mgt., Service & Interaction Center, CRM Analytics, CRM Reporting; SAS Enterprise Miner			X	X	E		E	E	R2(note 2)			
	ERP 5110	ERP Design & Implementation	SAP ECC: FI, MM, SD, PP, CO, HR/HCM	X		X	X			E	R2 (note 2)		R	E	E
	ERP 5130	ERP in Small- and Medium Enterprise	Microsoft Dynamics, Power BI, CRM		X					E	E		E		
	ERP 5210	Dashboards, Scorecards, and Data Visualization	SAP S/4HANA & ECC: FI, CO; Tableau; SAP Analytics Cloud (SAC); SAS Viya; Microsoft PowerBI	X			X			E	E	E	E	E	
	ERP 5240	Enterprise Application Development and Software Security	SAP Design Studio, HANA Cloud Platform, and SAP UI5	X			X			E	E		E		
	ERP 5310	Supply Chain Management Systems	SAP ECC & S/4 HANA: PP, MM, SD; SAP SCM; SAS Visual Analytics & Visual Statistics, SAP Analytics Cloud (SAC) or Microsoft PowerBI			X	X	E	E	E	E	R	E		R
	ERP 5410	Use of Business Intelligence	SAP BW/BI: Data Warehouse, BEx queries, InfoCube; SAP HANA, SAP Analytics Cloud (SAC), Web Intelligence, Business Explorer			X	X			E	E	E	E	R	E
	ERP 5510	Enterprise System Administration and Cybersecurity Design	SAP BASIS, Solution Manager		X		X			E	E		E		
	ERP 6120	ERP System Configuration	SAP S/4 HANA & ECC Configuration: FI, MM, SD, PP, CO, SAP UI and Fiori UI development	X			X						R		E
	ERP 6220	Data Modeling & Visualization Prototyping for Enterprise Decision Dashboards	SAP HANA Studio (data modeling, provisioning, ETL), Fiori, SAP Analytics Cloud (SAC), HANA Cloud Platform (HCP), SAP Designer Studio, SAS Visual Analytics & Visual Statistics, SAP S4 HANA			X	X		E				E	E	
	ERP/IST 6444	Data Warehouse	SAP BW/BI: Data Warehouse constructions, ETL, Analytics, Reports, BEx Queries, SAP HANA Studio	X			X						E	R	
	ERP 6610	Advanced Customer Relationship Management in ERP Environment	SAP CRM: Marketing/Campaign Mgt. ,Lead & Opportunity Mgt., Service & Interaction Center, CRM Analytics, CRM Reporting; SAS Enterprise Miner			X	X		E				E	E	R2 (Note 2)
Business & IST Courses	IST 1750	Introduction to MIS	SAP S/4HANA & ECC Overview: MM, SD	X		X									
	BUS/MKT 5150	Customer Focus & Satisfaction	Salesforce	X		X				X	R2(note 2)	R2 (Note 2)			
	IST 6443	Information Retrieval & Analysis	SAS Enterprise Miner, SAS Text Miner, SAP Predictive Analytics (Social Network Analysis)			X		RL (Note 4)						E	
	IST 6445	Database Marketing	SAS Base, SAS Enterprise Miner	X				RL (Note 4)						E	
	BUS 1210	Financial Accounting	SAP FI	X		X					R1 (note 1)				
	BUS 5360	Business Operations	Business Operations			X						R1 (note 1)			
	BUS 6425	Supply Chain and Project Mgt.		X											RG1 (note 3)
ME & Emgt Courses	Emgt 2211	Engineering Accounting and Finance	Engineering Accounting and Finance	X		X					R1 (note 1)				
	ME 3653	Manufacturing	Manufacturing	X		X						R1 (note 1)			
	Emgt 3310	Operations and Production Mgt.	Operations and Production Mgt.	X		X						R1 (note 1)			
	Emgt 5614	Supply Chain Management	Supply Chain Management									R1 (note 1)			RG1 (note 3)
	ME 5708	Rapid Product Design and Optimization	Rapid Product Design and Optimization			X						E			RG1 (note 3)
	Emgt 5615	Production Planning And Scheduling	Production Planning And Scheduling	X											RG1 (note 3)
	ME 5656	Design for Manufacture	Design for Manufacture	X								E			E
	ME 5757	Integrated Product and Process Design	Integrated Product and Process Design	X								E			E
	ME 5760	Probabilistic Engineering Design	Probabilistic Engineering Design	X								R2(note 2)			E
	ME 5763	Principles and Practice of Computer Aided Design	Principles and Practice of Computer Aided Design			X						E			E
Statistics Courses	STAT 5260	Statistical Data Analysis using SAS	SAS Base		X			E	E						
	STAT 5346	Regression Analysis	SAS Base	X				E	E						
	STAT 5353	Statistical Data Analysis	SAS Base			X		E	E						

R: Required Certificate/Emphasis/Minor Courses

E: Elective Courses (**ERP Emphasis**: any three ERP courses; **ERP Minor** has three required courses and two elective courses; **Digital Supply Chain Minor**: has 3 required courses and 2 elective courses;

ERP or BI Graduate Certificate has two required courses and two elective courses; **Digital Supply Chain** has three required courses and one elective)

Note 1: Choose **ONE course** from this group **Note 2:** Choose **ONE course** from this group **Note 3:** Choose **ONE course** from this group **Note4:** Choose **AT LEAST ONE** from this group