Graduate Certificate in Business Intelligence

Offered by the Business & Information Technology Department

Overview
Interest in business intelligence has been a recent strong theme among employers of our graduate students and among our distance students. Medium and large-sized businesses are especially interested. In order to make appropriate decisions, upper-level administration of an organization needs to draw the data together from different systems in order to get a crisper picture of the status and performance of an organization and present it in helpful ways. Examples include the development of organizational scorecards, dashboards and other tools that provide a picture of how an organization is performing. People capable of creating and maintaining such information are needed, but the in-depth education necessary for these people is available in only a few places.

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 the capabilities of those technologies.

Graduate Certificate in Business Intelligence
A graduate level student may receive a Graduate Certificate in Business Intelligence from the Information Science and Technology program within the Business and Information Technology department at Missouri S&T by completing four courses. Two of the courses are required:
- Use of Business Intelligence (ERP 345)
- Essentials of Data Warehouses (IST/ERP 444).

The other two courses may be chosen from the following:
- ERP Systems Design and Implementation (ERP 346)
- Strategic Enterprise Management Systems (ERP 348)
- Customer Relationship Management (ERP 442)
- Information Retrieval & Analysis (IST 443)
- Database Marketing (IST 445)
- Enterprise Performance Management System Prototyping (ERP 448).

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.

Graduate Certificate in Business Intelligence Courses

Required Courses: (each of these is a three-credit course)
ERP 345: Use of Business Intelligence
Designs, methods and tools for creating low and high fidelity prototypes of information technology systems. Different prototyping approaches are examined as part of the iterative design cycle that is commonly used for developing usable information technologies. *Prerequisite: ERP 346.*

IST 444/ERP444: Essentials of Data Warehouses
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. *Prerequisite: IST 223 or CS 304 or equivalent relational database experience.*

Elective Courses (choose two): (each of these is a three-credit course)
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'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. *Prerequisites: IST 50*

ERP 348: Strategic Enterprise Management (SEM) Systems
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. Prerequisite: ERP 246 or BUS426 or ERP346 (may be taken concurrently)

ERP 442 Customer Relationship Management
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. Prerequisite: ERP345

IST 443: Information Retrieval & Analysis
Focus is on applied analysis of complex information networks in the form of web and text systems. Topics include web system link analysis, text mining, consensus analysis, collaborative filtering, recommender systems. Uses interactive data analysis tools such as SAS. *Prerequisite: Database and Statistics Familiarity.*

IST 445: Database Marketing
Methods & concepts used in database marketing, such as 1) predictive modeling techniques (e.g., regression, decision trees, cluster analysis) and 2) standard processes for mapping business objectives to data mining goals to produce a deployable marketing model. Covers metrics like lifetime value of a customer and ROI; several application areas. *Prerequisite: Statistics understanding, programming understanding, familiarity with spreadsheets.*

ERP448 Enterprise Performance Management System (EPMS) Prototyping
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. *Prerequisite: ERP 346, ERP444 or IST444*

Planned Regular Schedule For Required Courses

Fall Semester	Spring Semester
Use of Business Intelligence (ERP 345)	Essentials of Data Warehouses (IST 444/ ERP 444)

All courses are taught both on campus and as distance courses.