

**INFORMATION  
TECHNOLOGY  
MANAGEMENT**

**ITM**

**Department of Accounting  
and Information Systems  
Eli Broad College of Business  
and The Eli Broad Graduate  
School of Management**

**209 Business Analytics and Information Systems**  
Fall, Spring, Summer. 3(3-0) P: CSE 101 R:  
Open to undergraduate students in the Business - Admitted major and open to undergraduate students in the Information Technology Minor. SA: BUS 309, ITM 309  
Use of business processes, information technologies, and analytics in creating value and enabling improvements in global business performance.

**311 Systems Analysis and Design**  
Fall, Spring. 3(3-0) R: Open to juniors or seniors in the Eli Broad College of Business and The Eli Broad Graduate School of Management or in the Information Technology Minor.  
Structured analysis and design of information systems. Understanding of the system development process, and organizational issues associated with the design and implementation of information systems.

**412 Digital Marketing**  
Spring. 3(3-0) Interdepartmental with Marketing. Administered by Marketing. P: MKT 300 or MKT 327 R: Open to juniors or seniors in the Eli Broad College of Business and The Eli Broad Graduate School of Management. SA: MSC 412  
Theoretical foundation of digital marketing. Recent tactics, applications, and trends in the online marketplace. Basics of online marketing communications, search engine marketing, social media marketing, and web analytics.

**444 Information Technology Project Management**  
Spring. 3(3-0) Interdepartmental with Computer Science and Engineering and Media and Information. Administered by Information Technology Management. P: ITM 311 R: Open to students in the Information Technology Minor.  
Practical training and experiences in design, testing, and launch of new information technologies and systems.

**481 Introduction to Business Analytics**  
Fall, Spring. 3(3-0) P: CSE 201 or CSE 231 or MKT 317 RB: Other courses in the IT minor or statistics R: Open to undergraduate students in the Eli Broad College of Business and The Eli Broad Graduate School of Management or in the Information Technology Minor or approval of department.  
Exploration and predictive analysis of business problems. Analysis concepts and skills in business contexts. Strategic and operational impacts of a firm's analytics efforts. Basic concepts of big data and specific methods of conceptualizing and analyzing business problems.

**490 Independent Study in Information Technology**  
Fall, Spring, Summer. 1 to 4 credits. P: ITM 209 R: Open to students in the Eli Broad College of Business and The Eli Broad Graduate School of Management.  
Directed study in information technology under faculty supervision.

**491 Special Topics in Information Technology**  
Fall, Spring. 1 to 4 credits. P: ITM 209 R: Open to students in the Eli Broad College of Business and The Eli Broad Graduate School of Management.  
Current topics in information technology.

**818 Data Management and Visualization in Analytics**  
Fall. 3(3-0) R: Open to graduate students in the Business Analytics Major or approval of department.  
Role of analytics in shaping competitive strategy and improving the design and implementation of business processes. Emphasis on enterprise data management and visualization skill development. Analysis of enterprise data identifying findings and making recommendations. Real-world cases of successes and failures with analytics-based business strategies.

**821 Enterprise Database Systems**  
Fall. 3(3-0) Interdepartmental with Accounting. Administered by Accounting. R: Open to master's students in the Accounting major or approval of department. Not open to students with credit in ACC 321.  
Management of information in business organizations. Conceptual modeling of transaction process systems, workflow systems and enterprise-wide networks of value-added activities. Integration of decision support and policy level systems with economic event processing systems. Evolution of accounting systems.

**822 Information Systems Project Management**  
Fall, Spring. 1 to 3 credits. Interdepartmental with Accounting. Administered by Accounting. R: Open to graduate students in the Accounting major and open to MBA students or approval of department.  
Management of information system projects. Modeling of business processes. Management of project scope, time and costs. Planning and control of projects. Program and portfolio management. Consulting issues for effective project management.

**823 Advanced Enterprise Database Systems**  
Spring. 3(3-0) Interdepartmental with Accounting. Administered by Accounting. P: ACC 321 or ACC 821 or ITM 821 R: Open to graduate students in the Accounting major or approval of department.  
Architecture of enterprise information. Semantic and syntactic modeling of enterprise economic phenomena, relational database technology and database design for business systems, business process analysis patterns and implementation compromises.

**824 Governance and Control of Enterprise Systems**  
Fall, Spring. 3(3-0) Interdepartmental with Accounting. Administered by Accounting. R: Open to graduate students in the Accounting major or in the Master of Business Administration in Business Administration or approval of department.  
Governance and control of information technologies. Identification and valuation of key information and communication technologies, frameworks for assessing information system risk, information system auditing, and international standards for information technology governance and control.

**825 Object-Oriented Business Information Systems**  
Fall. 3(3-0) Interdepartmental with Accounting. Administered by Accounting. P: ACC 321 or ACC 821 R: Open to graduate students in the Accounting major or approval of department.  
Analysis and design of object-oriented business systems. Unified modeling language descriptions of business phenomena and rules, object-oriented programming, use-case analysis and specifications, and XML tag sets for transactions and reporting.

**826 Enterprise Information Systems**  
Spring. 3(3-0) Interdepartmental with Accounting. Administered by Accounting. R: Open to graduate students in the Accounting major or in the Master of Business Administration in Business Administration or approval of department.  
Enterprise resource planning (ERP) systems. ERP implementation issues and success factors. Use of enterprise systems, and exploring future directions in ERP systems.

**881 Network Analytics**  
Fall, Spring, Summer. 1 to 3 credits. P: MKT 829 or MBA 820 R: Open to master's students in the Business Analytics Major or approval of department.  
Application of network analysis in business contexts. Basic methods and terminology associated with network analysis and text analytics leading to broad-based applications. Applications of these techniques span a broad range of business contexts including human resource management, customer relationship management systems, supplier networks, and online networks.

**882 Analytics Practicum**  
Summer. 3 credits. R: Approval of department.  
Supervised analytics practicum. The design, analysis, execution, and presentation of an analytics project.

**883 Business Analytics Problem Solving**  
Spring. 1 to 3 credits. R: Open to graduate students in the Business Analytics Major or approval of department.  
Statistical techniques, use of statistical software platform, exposure to statistical programming languages.

**885 Machine Learning and Optimization in Analytics**  
Fall. 1 to 3 credits. R: Open to graduate students in the Business Analytics Major or approval of department.  
Applying different machine learning and optimization techniques to solve organizational problems.

## ITM—Information Technology Management

- 886 Communication Strategies for Analytics**  
Spring. 1 to 3 credits. R: Open to graduate students in the Business Analytics Major or approval of department.  
Professional communication skills, from basic business writing techniques to cutting-edge digital and social-media strategies.
- 888 Capstone: Business Analytics**  
Fall. 1 to 3 credits. R: Approval of department.  
Practicum in the development and delivery of predictive data analysis for strategic decision making in organizations. Application of the principles and tools of analytics to real-world problems in research and development, marketing, supply chain, accounting, finance and human resources management. Development and presentation of analytical insights and recommendations.
- 890 Independent Study**  
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open to graduate students in the Eli Broad College of Business and The Eli Broad Graduate School of Management. Approval of department.  
Faculty-supervised independent study.
- 891 Special Topics in Information Technology Management**  
Fall. 1 to 3 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Approval of department.  
Selected topics in current and emerging issues related to information technology management.
- 893 Business Analytics Internship**  
Summer. 1 to 3 credits. R: Open to master's students in the Business Analytics Major or approval of department.  
Professional internship in a public, industrial, or governmental organization where one or more business analytics projects are performed under faculty supervision.
- 911 Doctoral Seminar in Information Systems**  
Fall. 3(3-0) RB: Master's degree in business, computer science, telecommunication or engineering.  
Seminar in management information systems for new doctoral students and researchers new to the field.
- 912 Information Technology Transactional Perspectives**  
Spring of even years. 3(3-0) Interdepartmental with Media and Information. Administered by Information Technology Management. RB: Graduate level microeconomics course R: Open to doctoral students.  
Multiple perspectives on relationships between organizations and information technology. Information processing, communications and management strategy approaches. Economic perspectives.
- 913 Seminar in Information Systems Design Science**  
Spring of odd years. 3(3-0) RB: ITM 911  
Research in design science in information systems. Ontological issues in design science research.
- 914 Behavioral Aspects of Information Systems**  
Fall. 3(3-0) RB: Two prior courses in information systems. R: Open to graduate students in the Eli Broad College of Business and The Eli Broad Graduate School of Management or approval of college.  
Information systems theory from a behavioral and social science perspective.
- 915 Seminar in Information Systems and Networks**  
Spring of odd years. 3(3-0) RB: ITM 911 R: Open to doctoral students in the Eli Broad College of Business and The Eli Broad Graduate School of Management.  
Research in social networks in information systems.
- 917 Research Methods in Information Systems**  
Fall. 3(3-0) RB: (MSC 905) or graduate courses in Philosophy of Science, Intermediate Statistics. R: Open to graduate students in the Eli Broad College of Business and The Eli Broad Graduate School of Management or in the College of Communication Arts and Sciences or approval of college.  
Research methodologies utilized to study information systems phenomena from social science, computational science, and clinical approaches. Critique information systems literature from various methodological perspectives.