

# DEPARTMENT OF BUSINESS ANALYTICS AND TECHNOLOGY MANAGEMENT

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## Programs of the Department

- Major in Business Administration - Business Analytics
- Major in Business Administration - Project Management
- Major in Business Systems and Processes (BSAP)
- Minor in Business Analytics
- Accelerated B.S. in Business Administration or BSAP / M.S. in Supply Chain Management

## Why Study Business Systems and Processes?

- An ERP (SAP)-based, hands-on program.
- To prepare for career fields at the intersection of business and technology with positions such as systems analysts, operations analysts, process analyst, master data analysts among others.
- To earn the SAP Recognition Award granted by the SAP University Alliance.
- To harness technology to orchestrate, manage and administer business processes.

## Why Study Project Management?

- To prepare for college-graduate, entry-level jobs such as project manager, cost estimator, business analyst, business consultant, demand planner, logistics analyst, supply chain planner.
- To gain a professional certification such as PMP to enhance one's career prospects.
- To obtain an integrated perspective of business.

## Why Study Business Analytics?

- To learn how to collect, organize, visualize and analyze business data using cutting-edge analytics technologies, such as Power BI, Tableau, SAP Lumira, and R.
- To learn how to discover patterns, draw insights and derive business intelligence from data analytics
- To help with better decision-making
- To prepare students for a promising and fast-growing career in business analytics highly valued by a data-driven economy
- Students who choose minor in business analytics also gain analytical skills that will enhance their competitiveness and marketability in any industry or organization

## Mission Statement

The mission of the Department of Business Analytics and Technology Management is to produce technologically proficient and analytically savvy graduates who possess the knowledge, skills and attitudes necessary to function effectively in an integrated business community. The department's aim is to develop students who are competent, ethical

and capable of meeting the challenges of an increasingly complex, global and technologically-enabled environment.

## Goals

The goals of the department are:

- To achieve excellence in teaching while offering innovative and state-of-the-art programs and curriculum that are infused with cutting-edge technology.
- To increase the body of knowledge in Business Systems (ERP), Business Analytics and Project Management fields through applied scholarship activities.
- To provide applied research, consulting and advisory services to the business and professional community.

## Distinctive Features

- Strong technology focus in all courses
- SAP Student Recognition Award
- Linkage to professional certifications
- Student Certificate in Project Management (SCiPM)
- Experiential learning opportunities through data analytics competition and other case competitions
- Student Organizations
  - Project Management Association (PMA)
  - Towson Data Visualization and Analytics Group (TU-DVAG)
  - Towson SAP User Group (TU-SUG)
- Major in Business Administration - Project Management
- Major in Business Administration - Business Analytics
- Major in Business Systems and Processes
- Accelerated B.S./M.S. in Business Administration or BSAP with Supply Chain Management

- [Minor in Business Analytics](#)

## Faculty

*Professors:* Chaodong Han (Chairperson), Xiaolin Li, Barindra Nag, James Otto, Sharma Pillutla, Stella Tomasi (Ph.D. Program Director), Dong-Qing Yao

*Associate Professors:* Neeraj Parolia, Natalie Scala (Graduate Program Director)

*Assistant Professors:* Feng Cheng, Mona Mohamed, Xiaorui Zhu

*Lecturers:* Yulan Bai, William Cook, Rana Rassipour

*Lecturer II:* Alice Zhang

## Courses

### **EBTM 250 PROBLEM SOLVING IN BUSINESS I (1)**

Focus on analytic and technology skills needed to utilize spreadsheets to solve business problems. Topics covered include: managing and sharing workbooks, custom formats and layouts, creating advanced formulas, and creating advanced chart elements. To earn a satisfactory grade, students are required to pass the Microsoft Office Specialist (MOS) Excel Core exam and earn a MOS certification. The course can be waived if students have already obtained the Microsoft Office Specialist Excel Expert level certification. Students can repeat the course if they fail to pass and the grade will be replaced. Graded S/U. Prerequisites: major or minor standing; sophomore or higher standing.

### **EBTM 251 PROBLEM SOLVING IN BUSINESS II (1)**

Focus on analytic and technology skills needed to utilize spreadsheets to solve business problems. Topics covered include: work with data and information in data tables, visualize data with charts, predict outcomes, and what-if analysis. Prerequisites: EBTM 250 or Microsoft Expert Excel Certification; sophomore standing or higher; major or minor standing.

### **EBTM 306 FUNDAMENTALS OF PROJECT MANAGEMENT AND BUSINESS DECISIONS (3)**

The contemporary business issues of using data to support decision making and using project management techniques to implement change. Specific tools include spreadsheet modeling, optimization, simulation, work breakdown structures, Gantt Charts, and network diagrams. Prerequisites: ECON 205 or MATH 231; Computer Proficiency Exam; majors only; sophomore standing.

### **EBTM 310 INTRODUCTION TO ERP SYSTEMS (3)**

Will provide a comprehensive understanding of Enterprise Resource Planning (ERP) systems and their role in organizations. Included are key business processes including procurement, fulfillment, production, warehouse management and material planning. Processes will be discussed in terms of how they are executed and their impact on financial and managerial accounting. Covers knowledge and skills across different functional areas, including accounting, finance, operations management, sales and human capital through hands-on exercises using a major ERP system. Particular attention will be given to the integrated nature of business processes.

### **EBTM 320 DATA VISUALIZATION AND DASHBOARDS (3)**

Introduces business-driven and friendly tools such as Tableau to create visualizations using a hands-on approach. Explores how to select appropriate KPIs and apply visualization techniques to create dashboards to reduce information overload and help with decision making. Incorporates communication through storytelling. Includes data prepping, data analyzing, data modeling and dashboards. Covers data sources from different functional areas. Prerequisite: ECON 205, MATH 231, MATH 237, PSYC 212, or SOCI 212.

### **EBTM 337 ENTERPRISE INFORMATION SYSTEMS (3)**

Strategic, tactical, and operational applications of enterprise information systems, e-business, and enterprise use of social media. Topics include data and knowledge management and networked computing, future trends using intelligent systems, and important enterprise resource planning systems used to integrate functional areas within organizations, collaborating with external partners, and integrating stakeholders across the value chain. Not open to students who have successfully completed MNGT 337. Prerequisites: major standing; junior/senior standing.

### **EBTM 340 APPLIED CRM SYSTEMS (3)**

Focuses on theories and applications of customer relationship management (CRM). Important topics include CRM theory and development, the CRM process, customer data management, using CRM as a strategic marketing, sales, service, and analytical tool, and integrating social networking and CRM. The course offers students key knowledge and skills that are essential for customer analyses and marketing strategy formulation. Students will gain hands-on experience through lab assignments that require the use of transactional and analytical CRM software commonly used by businesses. Prerequisites: major standing; junior standing or higher.

### **EBTM 343 INTRODUCTION TO PROJECT MANAGEMENT (3)**

Management of projects through planning, scheduling and controlling of organizational activities. Course includes project selection, scope development and management, cost estimation and budgeting, scheduling, staffing, resource allocation, task tracking, task sequencing, and control. Project management software will be used to support the course material. Students who have successfully completed EBTM 443 or MNGT 443 will not receive additional credit for EBTM 343. Prerequisites: sophomore standing or higher; major or minor standing.

### **EBTM 350 BUSINESS ANALYTICS (3)**

Focuses on using standard business analytic models to summarize and analyze data, build models, and drive impact through quantitative decision-making. Explores methods to create and frame problems, use of descriptive and prescriptive analytics and using data to discover patterns and trends. Prerequisites: EBTM 251 and (ECON 205/MATH 231 or equivalent course); junior standing or higher; major or minor standing.

### **EBTM 360 ENTERPRISE RESOURCE SYSTEMS CONFIGURATION (3)**

Discusses the concepts, principles and techniques for configuring organizational processes in an enterprise system. The focus is to ensure that the key organizational processes are executed efficiently and effectively. Students will learn about business processes in modern organizations, managing change to those processes, and configuring an Enterprise Resource Planning (ERP) system to implement business process changes. Project Organization skills will be enhanced as students work on cross-functional teams to implement changes. Prerequisites: EBTM 310, major standing, junior/senior standing.

### **EBTM 365 PRINCIPLES OF OPERATIONS MANAGEMENT (3)**

Strategies and techniques for service and manufacturing operations. A number of quantitative techniques are presented. Practical business applications and international competitiveness are stressed throughout the course. Students will use industry relevant software in the course. Students who have successfully completed MNGT 365 will not receive additional credit for EBTM 365. Prerequisites: (EBTM 251 or Computer Proficiency Exam) and (ECON 205 or MATH 231/MATH 233); major in ACCT, BUAD, CIS, EBUS, MATH, XBACI, XCIEB or XEBBA; junior/senior standing.

### **EBTM 367 E-BUSINESS INFRASTRUCTURE (3)**

Introduction to e-business infrastructure topics including business data communications and networking, e-business security, and databases. Students are not only expected to master the technical aspects of those subjects through lectures and hands-on labs, but also expected to understand the business implications of those topics. Not open to students who have successfully completed EBUS 367 [ECOM 367]. Prerequisites: EBTM 337 [MNGT 337]; majors only; junior/senior standing.

**EBTM 370 ERP SIMULATION AND APPLICATIONS (3)**

Will provide students with the conceptual and practical understanding of ERP applications in business. The course will take students through procurement, manufacturing, and distribution applications in a simulated environment on the ERP platform. The other part of the course discusses in-memory databases such as HANA and their implications for business applications. Concepts of security are included in the discussion. Students will work on ERP software in the cloud. Prerequisites: EBTM 310, major standing, junior/senior standing.

**EBTM 400 APPLIED DATA ANALYTICS (3)**

Gives students an understanding of the importance and applications of data analytics in organizations. Its focus is on the analytical and business process uses of BI. The course will provide a high-level overview of the technical infrastructure of applied data analytics, and will focus on the use of reporting and analysis tools used to extract information needed to address specific business questions and problems. Prerequisites: EBTM 350, junior/senior standing.

**EBTM 419 SUPPLY-CHAIN MANAGEMENT (3)**

Basic concepts and strategies adopted in SCM. Primary focus is to develop a good understanding of strategic, tactical and operational issues of SCM and become familiar with the integration of various SCM entities. A number of essential techniques of SCM are presented as supplementary materials. Topics include: transportation management and network design, e-procurement, uncertainty management, supply chain coordination & integration, value of information (sharing), global SCM, customer value and SCM, information technology/standards in SCM. Not open to students who have successfully completed MNGT 419. Prerequisites: EBTM 337 and EBTM 365; junior/senior major standing.

**EBTM 422 CRM ANALYTICS (3)**

Covers theories and applications of customer relationship management (CRM) and CRM analytics. Discusses three core types of CRM – strategic, operational and analytical CRM as well as the use of technology applications to support marketing, sales and service functions of the organization. Hands-on CRM analytics labs are included for students to learn a variety of CRM-based analytics skills, including dataset management, data query, report, and dashboard development and customization. Prerequisite: EBTM 251.

**EBTM 425 BUSINESS REQUIREMENTS AND ANALYSIS (3)**

Addresses the business analysis discipline and describes the role of the business analyst. Describes the process model for business analysis. Describes how business analysis is undertaken in various stages of the process model as well as key techniques used at each stage. The goal of the course is to prepare students with a business analysis toolkit that can be used by them to help organizations adopt business improvements to ensure their success. Prerequisites: EBTM 337 and major junior/senior standing.

**EBTM 431 ADVANCED E-BUSINESS (3)**

Deals with newer web-related technologies affecting the world of e-business approaches to web usability, e-collaboration tools including wikis, widgets, blogs and social networking, content management, mobile technologies, web logging and performance management, and web services. Not open to students who have successfully completed EBUS 431, ECOM 431 or MNGT 411. Prerequisites: EBTM 367; majors only; junior/senior standing.

**EBTM 446 BUSINESS INTELLIGENCE (3)**

Classifications of business decision problems and methods of analysis to identify the best solutions using business records for business intelligence. Methods of managing large storage of business records and related information and the discovery of knowledge to support managerial decision making. Prerequisites: EBTM 337 or EBTM 320, junior/senior standing, major or minor standing.

**EBTM 450 ADVANCED PROJECT MANAGEMENT (3)**

Covers advanced project management topics necessary for implementation of and excellence in project management. Topics include human resource management, procurement management, contract administration, risk management, integration management, project leadership, communications management and an introduction to program and portfolio management. Project management software will be used to support the course material. Prerequisites: EBTM 343 or EBTM 443 or MNGT 443, or EBTM 604; junior/senior major standing.

**EBTM 454 BUSINESS PROCESS MANAGEMENT (3)**

Business Process Management concepts, architecture, and specifications, introduction to modeling/design tools used to design and optimize business processes as well as performance measuring approaches for evaluating business process performance. Prerequisites: major standing, EBTM 337 / MNGT 337, EBTM 365 /MNGT 365, junior or senior standing.

**EBTM 455 BUSINESS DATA WAREHOUSING (3)**

Covers theories and applications of business data warehousing, including data warehousing principles, designs, implementation, ETL tools, and business big data technologies. Discusses topics pertaining to data warehouse design, data warehouses for enterprises, and applications of data warehousing using an Enterprise Resource Planning system. Prerequisite: EBTM 337.

**EBTM 456 BUSINESS DECISION MODELING (3)**

Introduces basic concepts, principles, methods, implementation techniques, and applications of decision modeling. Topics include theory of linear and integer programming, decision making under uncertainty, risk analysis, simulation, multi-criteria decision analysis and a variety of business applications with decision models. Software packages are introduced for hands-on exercises. Prerequisite: EBTM 251.

**EBTM 457 DATA MINING FOR BUSINESS ANALYTICS (3)**

Introduces basic concepts, principles, methods, implementation techniques, and applications of data mining. Topics include prediction and classification methods, logistic regression, discriminant analysis, association and pattern discovery, cluster analysis, time series forecasting, and text mining. A software package is introduced for hands-on exercises. Prerequisite: EBTM 350.

**EBTM 462 PROJECT QUALITY AND SIX SIGMA (3)**

Projects involving quality management and six sigma methodologies including quality improvement, process design, root cause analysis, quality measurement, and continuous improvement. Prerequisites: major standing, EBTM/MNGT 443 or EBTM 343; junior/senior standing.

**EBTM 470 SPECIAL TOPICS IN E-BUSINESS (3)**

Course content varies with each topic. In-depth study of contemporary e-Business issues. May be repeated with a different topic for a maximum of 6 units. Not open to students who have successfully completed EBUS 470. Prerequisite: major senior standing.

**EBTM 475 SPECIAL TOPICS IN PMBA (3)**

Course content varies with each topic. In-depth study of contemporary business issues as they affect current project management and business analysis practices. May be repeated for a maximum of 6 units provided a different topic is covered. Prerequisite: senior major standing.

**EBTM 476 SPECIAL TOPICS IN BUSINESS ANALYTICS (3)**

Introduces special topics of relevance and importance in the area of business analytics. Course contents vary with each topic. May be repeated with a different topic for a maximum of 6 units. Prerequisites: EBTM 350, EBTM 365, major in BUAD with a business analytics track; senior standing.

**EBTM 490 DIRECTED READINGS IN BUSINESS ANALYTICS (3)**

This individualized course allows a student to study a special area of business analytics that is not currently offered or covered by Business Analytics and Technology Management. Contents vary. A total of 6 units for any combination of directed readings, independent research and internship is allowed in any area of study in the Business Analytics & Technology Management Department. A minimum 3.00 cumulative GPA is required. Prerequisites: EBTM 350, EBTM 365, a major in BUAD with a business analytics track, and consent of department.

**EBTM 491 DIRECTED READINGS IN BUSINESS SYSTEMS AND PROCESSES (3)**

Assigned readings in selected areas of Business Systems and Processes (BSAP). A total of 6 units for any combination of directed readings, independent research, and internship is allowed in BSAP area of study. Minimum of 3.00 cumulative GPA is required. Prerequisite: consent of the instructor.

**EBTM 492 PMBA DIRECTED READINGS (3)**

Directed readings in selected areas of Project Management and Business Analysis. A total of 6 units for any combination of directed readings, independent research, and internship is allowed in the EBTM area of study. Prerequisites: Consent of the instructor, a minimum of 3.00 cumulative GPA, and completion of all 200 and 300 level core requirements for the PMBA concentration.

**EBTM 493 INDEPENDENT RESEARCH IN BUSINESS ANALYTICS (3)**

This individualized course allows a student the opportunity to engage in scholarly, independent research under the supervision of a sponsoring faculty member. Contents vary. A total of 6 units for any combination of directed readings, independent research and internship is allowed in any area of study in the Business Analytics & Technology Management Department. A minimum 3.00 cumulative GPA is required. Prerequisites: EBTM 350, EBTM 365, a major in BUAD with a business analytics track, and consent of department.

**EBTM 494 STUDY ABROAD IN BUSINESS ANALYTICS AND TECHNOLOGY MANAGEMENT (3)**

Led by department faculty, students travel to a foreign country to obtain first-hand experience in a foreign culture, observe and study global supply chains developed by multinational corporations, and learn the background of global supply chains including their values, costs, and risks from the perspectives of buyer, seller, and logistics provider. Prerequisites: EBTM 365; junior standing; must be registered in an approved study abroad program; and consent of the department chair.

**EBTM 495 BSAP INDEPENDENT RESEARCH (1-3)**

Directed research in specific areas of Business Systems and Processes (BSAP). A total of 6 units for any combination of directed readings, independent research, and internship is allowed in the BSAP area of study. Minimum of 3.00 cumulative GPA is required. Prerequisites: consent of the instructor, completion of all 200 and 300 level core requirements, and department consent.

**EBTM 496 PMBA INDEPENDENT RESEARCH (3)**

Independent research in specific areas of project management and business and analysis. A total of 6 units for any combination of directed readings, independent research, and internship is allowed in the PMBA area of study. Prerequisites: Consent of the instructor, a minimum of 3.0 cumulative GPA, completion of all 200 and 300 level core requirements, and a special permit.

**EBTM 497 BUSINESS SYSTEMS & PROCESSES PRACTICUM (3)**

Students are required to work in government or industry for a minimum of 120 hours to gain practical experience in the application of concepts and methods in Business Systems and Processes (BSAP). All positions have to be reviewed and approved by the EBTM department. A total of 6 units for any combination of directed readings, independent research, and internship is allowed in the BSAP area of study. Minimum of 3.00 cumulative GPA is required. Graded S/U. Prerequisite: consent of the instructor.

**EBTM 498 PMBA INTERNSHIP (3)**

Students are required to work in government or industry for a minimum of 120 hours to gain practical experience in the application of project management and business analysis concepts. All positions have been reviewed and approved by EBTM faculty. A total of 6 units for any combination of directed readings, independent research, and internship is allowed in the PMBA area of study. Graded S/U. Prerequisites: a minimum 3.0 cumulative GPA and consent of the instructor.

**EBTM 499 BUSINESS ANALYTICS INTERNSHIP (3)**

Allows a student the opportunity to apply knowledge and skills to an internship-based job function related to business analytics under the supervision of a sponsoring faculty member and a supervisor at a sponsoring organization. Contents vary. A total of 6 units for any combination of directed readings, independent research and internship is allowed in any area of study in the Business Analytics & Technology Management Department. A minimum 3.00 cumulative GPA is required. Prerequisites: EBTM 350, EBTM 365, a major in BUAD with a business analytics track, and consent of department.