

# BUSINESS ANALYTICS & TECHNOLOGY MANAGEMENT (EBTM)

## Courses

### EBTM 602 INTRODUCTION TO SUPPLY CHAIN MANAGEMENT (3)

Introduces basic concepts and strategies adopted in SCM. The 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. Topics include: supply chain strategy and planning, supply chain operations, procurement, supply chain risk management, supply chain coordination and integration, supply chain revenue management, coordinated product design chain and SC, and supply chain information technologies. Prerequisites: graduate degree seeking status and MKTG 607 or statistics proficiency.

### EBTM 604 INTRODUCTION TO PROJECT MANAGEMENT (3)

Introduces students to the behavioral and technical aspects of managing projects. Challenges of planning, monitoring and controlling complex projects to achieve the desired cost, quality and performance objectives will be discussed. Topics covered will also include cross-functional project teams, project integration, time management, time-cost trade-offs in project completion and resource allocation. Prerequisites: graduate degree-seeking status and statistics proficiency; not open to students who have successfully completed EBTM 343 (EBTM 443) or MNGT 443.

### EBTM 610 OPERATIONS MANAGEMENT (3)

Demonstrates the significance of efficient and effective management of operations for competitiveness and success in manufacturing and service organizations. Topics include: capacity planning, process analysis, waiting line analysis, sales and operations planning, inventory management, material requirements planning, statistical quality control and lean operations. Practical business applications/cases are stressed throughout the course. Prerequisites: degree-seeking status and MKTG 607 or statistics proficiency.

### EBTM 620 PROCUREMENT AND SOURCING (3)

Topics include purchasing decisions and strategy, the legal aspects of purchasing, negotiation product and service quality, lean purchasing, supplier selection and evaluation, supplier relationship management, and special purchasing applications such as health care purchasing, government purchasing, professional service purchasing, transportation service purchasing. Prerequisites: graduate degree seeking status and statistics proficiency.

### EBTM 625 PROJECT LEADERSHIP AND COMMUNICATION (3)

Advanced project management topics necessary for implementation of, and excellence in, project management. Topics include human resource management, risk management, quality management, project office, conflicts, project leadership and communications management. Project management software will be used to support the course material. Prerequisites: program admission and EBTM 604, or consent of department.

### EBTM 710 LOGISTICS AND DISTRIBUTION (3)

This course focuses on the study of logistics operations and distribution network and related firm strategy in the context of supply chain management. Topics include inventory, logistics network, warehouse management, transportation infrastructure and management, packaging and material handling, outbound logistics, distribution management, and international logistics. Prerequisite: degree-seeking status.

### EBTM 719 INTRODUCTION TO BUSINESS RESEARCH (3)

Introduces fundamentals of business research and focuses on the complete lifecycle of a journal publication. Other topics include major journals, databases, and software packages for research in the fields of information systems, supply chain management and business analytics. Research ethics, the Institutional Review Board review process and grant writing are also covered.

### EBTM 720 SUPPLY CHAIN ANALYTICS (3)

Addresses analytics applied in different stages of the supply chain and focuses on how technology is used to collect and analyze data to support decision making in the supply chain. Topics include data wrangling, predictive analytics and forecasting to support demand signals and planning, introductory data mining, simulation, supply chain optimization, and other emerging supply chain technologies/analytics. Prerequisites: degree-seeking status and MKTG 607 or statistics proficiency.

### EBTM 729 SEMINAR IN EMPIRICAL BUSINESS RESEARCH (3)

Reviews and extends knowledge and applications of regression models in empirical business research. Covers design and specifications of multiple regression models, linear and non-linear regressions, and logistic models. Other topics include reporting and interpreting regression results, mediation models, moderation models, non-linear effects, instrumental variables, and generalized regression models concerning panel data. Prerequisites: ECON 601 or MATH 646.

### EBTM 730 BUSINESS PROCESS MANAGEMENT (3)

Business Process Management (BPM) is a discipline that helps managers and analysts to design, run, administer, and monitor enterprise business processes. This course explains BPM concepts, architecture and specifications, introduces the student to process modeling/process automation tools used to design and optimize business processes with a focus on SCM as well as performance measuring approaches for evaluating performance. In addition, hands-on experience in process modeling and robotic process automation using appropriate tools is also provided. Prerequisites: graduate degree seeking status; not open to students who successfully completed EBTM 454.

### EBTM 735 SIX-SIGMA QUALITY (3)

Understanding of the processes involved with the implementation of projects involving quality management and six sigma methodologies. Topics will include quality improvement, quality management, process analysis, process redesign, root cause analysis, and continuous improvement. Software including spreadsheet modeling, project management, and flowcharting will be used to support the course material. Not open to students who successfully completed EBTM 462. Prerequisites: graduate degree seeking status and statistics proficiency.

**EBTM 739 SURVEY RESEARCH (3)**

This course provides doctoral students with a comprehensive introduction to the theories, methods, and issues of survey research. Major topics covered in the course include defining and sampling populations, methods of data collection, designing and evaluating survey questionnaires, survey data processing and analysis, and ethical issues of survey research. Students will be required to read and discuss a series of survey research articles, to critique survey questionnaires, and to develop their own survey questionnaires for research that they may conduct.

**EBTM 740 CUSTOMER RELATIONSHIP MANAGEMENT (3)**

Discusses the theories and applications in customer relationship management, which include analyzing customers to identify their needs and wants, satisfying customer needs and wants by developing customer-centric products and services, building sustainable customer relationships, and ultimately achieving customer retention and loyalty. The course highlights the importance of strategic aspects of customer management as a key determinant of future firm profitability and stresses the role of Customer Value as the guiding concept for marketing decisions. The course provides students with knowledge and skills that are essential for customer analyses and marketing strategies. Students will obtain hands-on experience with transactional and analytical CRM commonly used in business. Prerequisites: graduate degree seeking status; not open to students who successfully completed EBTM 340.

**EBTM 749 DECISION ANALYTICS (3)**

Provides a broad foundation in decision models and techniques used in industry and research for technical and managerial problems. Focuses on applications of techniques as well as interpretations of results. Covers both quantitative and qualitative methods, including decisions under multiple objectives, utility theory, influence and affinity diagrams, biases in probability assessment, risk and uncertainty management, defining decision attributes and alternatives, simulation, optimization, and stochastic modeling.

**EBTM 750 PROGRAM AND PORTFOLIO MANAGEMENT (3)**

Managing portfolios and programs from a strategic firm perspective. Principle areas of focus within program management will be strategic alignment, benefits management, stakeholder and communication management, risk management and leadership. Principle topics within project portfolio management will include project portfolio methodology, establishing a governance process, project selection techniques, and application of methods to optimize and balance a project portfolio. Using a case study and software tools, students will explore the importance of using organizational strategies to align projects, and apply practices to create portfolio and programs to leverage organizational assets. Not open to students who successfully completed EBTM 450. Prerequisites: EBTM 604 and graduate degree seeking status.

**EBTM 751 SEMINAR IN SUPPLY CHAIN MANAGEMENT RESEARCH I (3)**

Surveys fundamental literature on supply chain research. Topics include supplier management, customer management, inventory management, lean manufacturing, logistics and distribution. Students are required to critique literature and submit a research proposal. Prerequisite: EBTM 719.

**EBTM 752 SEMINAR IN SUPPLY CHAIN MANAGEMENT RESEARCH II (3)**

Reviews advanced topics in supply chain research, including supply chain sustainability, supply chain technologies and digital transformation, global supply chain, supply chain disruption, supply chain risk management and other emerging topics in contemporary supply chain management. Students are required to collect data, build and test own research models, and complete a research paper. Prerequisite: EBTM 751.

**EBTM 760 BUSINESS DATA WAREHOUSING (3)**

Covers fundamental technologies that improve the management and use of analytical data within organizations: data preparation, extraction, transformation, and loading (ETL), structured and unstructured data, data lakes, dimensional modeling, data warehouse architecture and design, visualization, master data management, and big data best practices. Also introduces features of major cloud warehouse platforms and explores real-world case studies of data warehouse projects.

**EBTM 761 SEMINAR IN MANAGEMENT INFORMATION SYSTEMS RESEARCH I (3)**

Surveys of contemporary research in information systems and introduces research methods used to address current issues and challenges related to information systems. Provides the students with an overview of key areas in information systems research, and how different approaches methodologies, and methods are used. Supports students in their development of a scholarly understanding of the fundamental issues and problems in theory building, theory testing, and theory use in information systems research. Students are required to develop a research proposal. Prerequisite: EBTM 719.

**EBTM 762 SEMINAR IN MANAGEMENT INFORMATION SYSTEMS RESEARCH II (3)**

Provides students with an in-depth understanding of research in the field of information systems and is primarily focused on understanding how information technologies have shaped society and businesses. Introduces key societal and business challenges related to digital technologies and systems. Students are required to collect data, build and test own research models, and complete a research paper. Prerequisite: EBTM 761.

**EBTM 772 SEMINAR IN MACHINE LEARNING FOR BUSINESS ANALYTICS (3)**

Emphasizes hands-on data analysis experience. Covers various statistical methods and machine learning tools for analyzing large, complex real-world data in business and industry. Topics include advanced techniques in machine learning: non-parametric smoothing methods, generalized additive models (for non-linearity), advanced tree methods (bagging, boosting, and random forests), advanced dimensionality reduction techniques (sparse principal component analysis), text mining, and sentiment analysis. Discusses recently developed techniques published in academic journals so students can learn to initiate their research questions and draft a research proposal. Prerequisites: COSC 757 or MATH 547.

**EBTM 790 SPECIAL TOPICS IN SUPPLY CHAIN MANAGEMENT (3)**

Current topics in supply chain management covering contemporary and emerging issues. May be repeated for credit provided a different topic is covered. Prerequisite: graduate degree seeking status.

**EBTM 795 INDEPENDENT STUDY (3)**

Independent research in specific areas of the field of the degree being pursued. A total of 3 units for any combination of directed readings or independent research is allowed in the area of study. Prerequisite: consent of department.

**EBTM 797 INTERNSHIP IN SUPPLY CHAIN MANAGEMENT (3)**

Supervised experience in a field setting which facilitates the application of supply chain knowledge. Prerequisites: graduate degree-seeking status and consent of department. Graded S/U.

**EBTM 881 SUPPLY CHAIN MANAGEMENT CAPSTONE PROJECT (3)**

Capstone course and an independent research or applied project in content areas related to supply chain management. Students work under the supervision of their faculty advisors to address a significant theoretical or applied problem in supply chain management. The completed project should clearly present the problem of the research subject investigated or applied project undertaken, its significance to theory and business practice, the research or project background, a well-defined method, results or findings, and their implications. Prerequisites: EBTM 602 and completion of at least 15 units in the Supply Chain Management MS program.

**EBTM 882 SUPPLY CHAIN MANAGEMENT CAPSTONE PROJECT CONTINUUM (1)**

Designed for students to continue their independent supply chain project in EBTM 881. Students work under the supervision of their faculty advisors to address a significant theoretical or applied problem in supply chain management. The completed project should clearly present the problem of the research subject investigated or applied project undertaken, its significance to theory and business practice, the research or project background, a well-defined method, results or findings, and their implications. Prerequisites: EBTM 602 and EBTM 881 and completion of at least 15 units in the Supply Chain Management MS program.

**EBTM 890 CAPSTONE CONSULTING SEMINAR IN SUPPLY CHAIN MANAGEMENT (3)**

This seminar course will cover contemporary and emerging issues in supply chain management. Students work on application of theoretical skills learnt in the program into practical use by collaborating with companies. The completed project should clearly present the problem where they will apply their knowledge by researching, analyzing, and proposing practical solutions related to supply chain management within a company or industry, including elements of data analysis, process improvement, and strategic planning. Students will disseminate the results of their project through poster and/or oral presentations. This course has been offered as a special topic; students who have earned credit for this course as a special topic will not receive additional credit for EBTM 890. Prerequisites: EBTM 602 and completion of at least 15 units in the Supply Chain Management MS program.