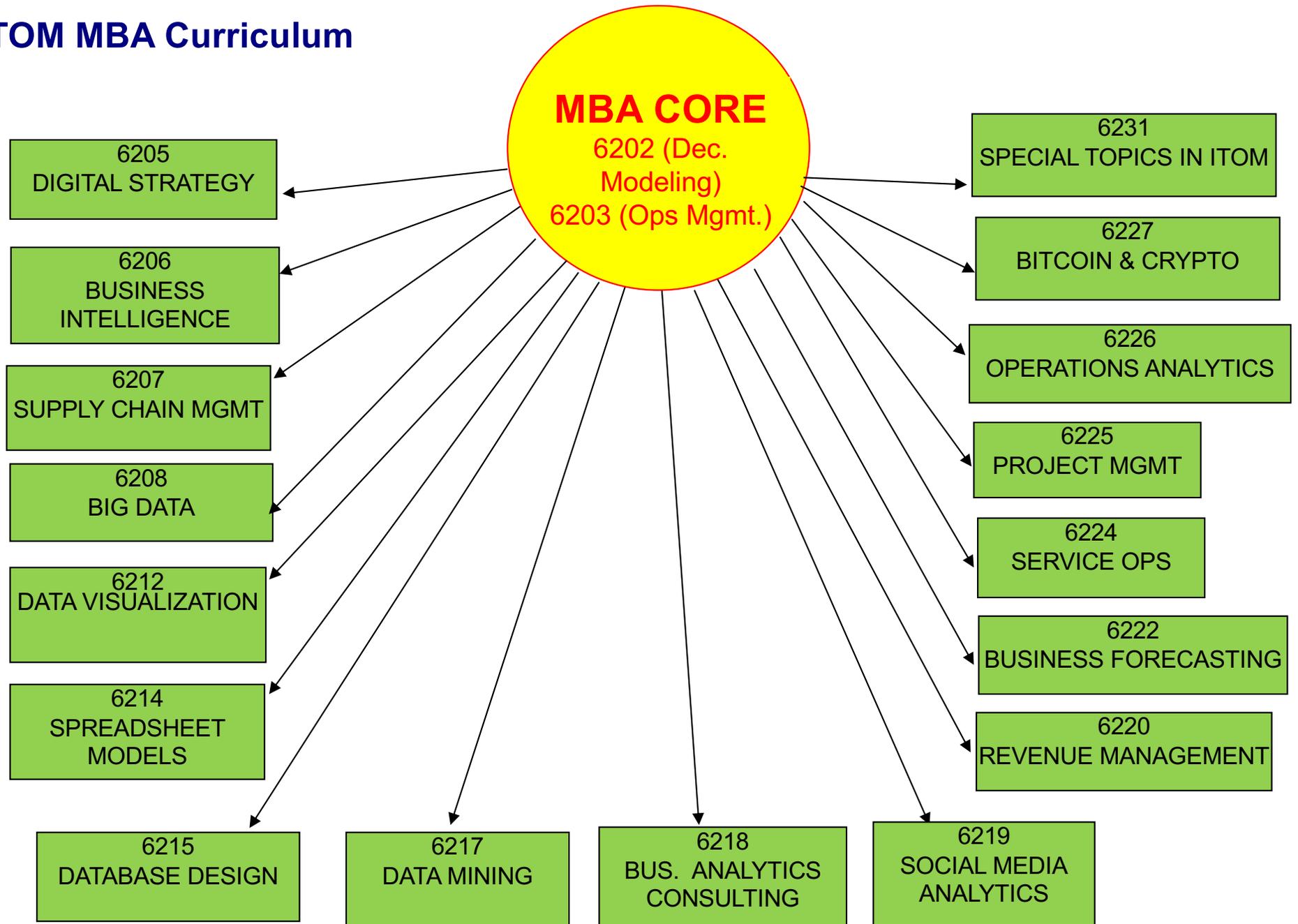




ITOM Curriculum

Cox School MBA Program

ITOM MBA Curriculum



ITOM 6205. Digital Strategy

Ulrike Schultze

PhD (Case Western Reserve Univ)



The Internet and other digital technologies have empowered customers and provided companies with significant opportunities. Other companies and industries face stronger competitive challenges from reduced barriers to entry and increased availability of information. This course introduces students to the technological and strategic issues relating to the use of digital technologies from a business perspective. Topics include Internet technologies, strategic implications of e-business, pricing strategy, information-intensive products, online marketplaces, and issues of Internet privacy and security.

ITOM 6206. Business Intelligence

Jeff Johnston
MBA (SMU)



In this class, students gain hands-on experience with Data Warehouses and the peripheral systems commonly associated with them. The technical skills developed in the course are essential to success as a business analyst in a traditional enterprise.

ITOM 6207. Supply Chain Management

Canan Savaskan-Ebert
PhD (INSEAD)



In this course, the supply chain is viewed from the perspective of a general manager. The goal of the course is to understand how supply chain design and planning decisions impact the performance of the firm as well as the entire supply chain. Each class session is a blend of theory presentation and case discussion, during which some spreadsheet modeling and analysis may be required.

ITOM 6208. Managing Big Data

Jeff Johnston
MBA (SMU)



In this class, learn about contemporary data management systems such as Hadoop and Azure, the principle Big Data systems found in modern enterprises. Students work with foundational Hadoop capabilities, such as Hive and Pig, but also explore emerging technologies such as Spark.

ITOM 6212. Data Visualization

Hettie Tabor
MBA (Univ. of Arkansas)



In this course, students learn to effectively communicate the results of business analytics and business decisions in written and oral presentations, including key questions for the analytic communications: What is happening? Why is it happening? What are the next steps? The course covers data visualization methods, as well as how data visualization software such as Tableau can be used to dramatically improve data analysis and managerial communications.

ITOM 6214: Advanced Management Decision Analysis

Karthik Kannan
PhD (Georgia Tech)



The objective of this course is to gain experience using spreadsheets to model and analyze quantitative business problems. The course covers various modeling techniques, including linear programming, nonlinear programming, real options, integer programming and simulation. These techniques are applied to various industries, including operations, technology, finance and marketing. Some of the applications developed in the course pertain to monitoring mutual fund managers, building flexible manufacturing facilities and constructing financial portfolios.

ITOM 6215. Database Design for Business Applications

Stewart Rogers
MS (UT Dallas)



This course covers fundamental issues in database creation and design. The course begins with mapping data collection in organizations onto a database with the objective of storing data consistently over time then proceeds to study methods for information extraction from databases. The use of homework assignments and an implementation project reinforce the design issues and the practical skills covered in the course.

ITOM 6217. Data Mining & Machine Learning

Amit Basu
PhD (Rochester)



This course examines how companies can effectively leverage AI and machine learning to gain better operational and competitive intelligence. Several technologies for enhancing organizational intelligence, such as machine learning, neural networks, clustering and association-based reasoning, are surveyed. Considerations that managers must make in applying these technologies to different types of decision and planning problems are discussed using lectures, cases and hands-on exercises with appropriate software.

ITOM 6218. Business Analytics Consulting

Ulrike Schultze

PhD (Case Western Reserve Univ)



A business process is a collection of activities – connected by flows of goods and information – that create value by transforming inputs into (more valuable) outputs through the use of capital and labor. As such, business processes are the key drivers of organizational value creation and performance, competitive advantage, etc. The course teaches students skills to model, analyze (for effectiveness, efficiency and internal controls) and redesign business processes. The course focuses particularly on information technology's role in enabling business processes.

ITOM 6219. Web & Social Media Analytics.

TBD

This course examines how data from social media service platforms such as Facebook, Linked-In, Twitter and Youtube can be leveraged in analytical models that provide useful insights about a firm's markets and the effectiveness of its products and services.

ITOM 6220. Pricing & Revenue Optimization

John Semple
PhD (UT Austin)



Revenue management involves methods for increasing revenue by offering different fares/prices as perishable capacity is consumed. Examples of RM can be found in the airline, hotel, railroad, rental car, and retail fashion businesses, among others. The class covers a variety of topics, including price optimization (with and without capacity constraints), Littlewood's two-class model, the n-class single resource RM problem, and more. Students learn how to implement RM models using dynamic programming and linear programming in Excel.

ITOM 6222 Business Forecasting

Tom Tan
PhD (Wharton)



From forecasting aggregate-level sales to predicting whether a customer will choose a particular product, analytic techniques are used by businesses to make rigorous, data-driven predictions. This course explores analytic models such as deterministic time-trend, exponential smoothing, Holt-Winters, autoregressive exogenous, and Box-Jenkins, among others. Students learn to distinguish between trend and seasonality and to utilize both for making forecasts in such areas as sales and operational planning. The course also covers how to use industry and government metrics and how to present results to management.

ITOM 6224. Managing Service Operations

Vishal Ahuja
PhD (Chicago)



The course is designed for students who plan to work in managing service operations within both the “pure” service sector companies and the service functions of manufacturing firms. The course explores the following topics: strategic service vision, design and delivery of services, managing capacity and demand, service quality and productivity, customer service management, technology in service operations, and globalization of services. The course also develops hands-on understanding of some powerful analytical techniques, including process analysis, waiting line models, simulation and yield management.

ITOM 6225. Project Management

Sree Bhaskaran
PhD (UT Austin)



Managing projects in a cost-effective and timely manner is one of the most challenging tasks in any organization. Competent project leadership requires an understanding of how to allocate financial, material and time-based resources, and the ability to motivate and maintain the focus of the project team. This course examines project decisions at three levels: 1) structuring and managing individual projects, 2) managing project portfolios and programs, and 3) making alliances across firms. It introduces tools and concepts that enable project managers to evaluate, manage and execute critical functions of any project while ensuring speed, efficiency and market impact.

ITOM 6226. Operations Analytics

Sree Bhaskaran
PhD (UT Austin)



This course examines the role of analytics and analytical models in improving an organization's operations. Students learn how strategic decisions can be aided by data-driven, analytical models. Some core aspects of business strategy, including external analysis, competitor analysis, and opportunity analysis are also covered.

ITOM 6227: Blockchain and Cryptocurrencies

Rowena Gan
PhD (Wharton)



This course examines how Blockchain technology can be applied in business processes. Starting with an overview of the technology and its mechanics, the course discusses applications ranging from cryptocurrencies, smart contracts, ICOs (initial coin offerings) and even new business models.

Business Analytics Concentration

- **Fall Mod A**
 - Database Management Systems
 - Business Analytics Consulting
 - Data Visualization
 - Customer Loyalty Management
- **Fall Mod B**
 - Business Intelligence
 - Business Forecasting
 - Understanding what Customers Value

- **Spring Mod A**
 - Advanced Mgmt. Decision Analysis
 - Operations Analytics
 - Managing Big Data
- **Spring Mod B**
 - Data Mining & Machine Learning
 - Web & Social Media Analytics
 - Pricing & Revenue Optimization
 - Project Management

- **Summer**
 - Database Management Systems
 - Data Mining & Machine Learning

Supply-chain & Operations Management Major

- Fall Mod A

- Database Management Systems
- Service Operations Management
- Business Analytics Consulting
- Data Visualization

- Fall Mod B

- Business Forecasting
- Business Intelligence
- Blockchain and Cryptocurrencies

- Spring Mod A

- Advanced Mgmt. Decision Analysis
- Digital Strategy
- Operations Analytics
- Managing Big Data

- Spring Mod B

- Data Mining & Machine Learning
- Web & Social Media Analytics
- Pricing & Revenue Optimization
- Project Management
- Supply Chain Management

- Summer

- Database Management Systems
- Data Mining & Machine Learning

Typical Career Paths

- Consulting
 - Management consulting
 - Technology consulting
 - Operations consulting
 - Analytics consulting
- Operations Management
 - Supply chain management and integration
 - Project/process management
 - Running new ventures, small companies
- Analytics Management
- Entrepreneurship