Master of Science in Business Analytics
Curriculum

MISM 6200 – Introduction to Business Analytics (3 credits)
Provides a comprehensive approach to understanding how business analytics enable companies to become more competitive. Offers students an opportunity to learn how to apply value chain analysis and other strategic perspectives to determine how business analytics can be integrated effectively into a firm's operations. Interactive activities such as simulations and case studies allow students to explore how insights from data can improve business decisions. Examines real-world examples of how companies have used business analytics perspectives and tools to enhance different types of business processes, such as inventory prediction, customer service quality, and resolution of ethical dilemmas.

MISM 6202 – Foundations of Data Analysis for Business (3 credits)
Covers basic principles and techniques of descriptive and predictive analytics. What are the essential data analysis concepts underlying business analytics? Topics include descriptive statistics, data visualization, probability and modeling uncertainty, sampling, estimation and confidence intervals, hypothesis testing, analysis of variance, simple and multiple regression analysis, time-series analysis, and forecasting. Emphasizes an understanding of how these tools can support decision making and analytics initiatives in a business context with real-world examples and case studies. Uses various software packages for analyzing data sets and creating visualizations.

MISM 6203 – Business Analytics Methods (3 credits)
Introduces key analytics methods for using data through the perspectives of applied statistics and operations analysis. Covers application of these methods to business areas including marketing, supply chain management, and finance. Topics include business-analytic thinking; application of business analytics solutions to business problems; data mining, supervised and unsupervised machine learning; methods for detecting co-occurrences and associations; and achieving and sustaining competitive advantage by using business analytics methods.

MKTG 6232 – Engaging Customers and Markets (3 credits)
Introduces information-centric methods that help to choose which customer markets are worth pursuing; that identify what benefits would be most attractive to offer these customers; and that develop, communicate, and deliver products and services that provide value to both customers and organizations. In the current customer-centric marketplace, every member within an organization is responsible for understanding and engaging customers, regardless of their specific functional role. Properly collecting and utilizing data from inside and outside the organization is necessary to support this process. Using real-world cases, scenarios, and data, offers students an opportunity to learn how customer relationships can be created and sustained.

MISM 6210 Information Visuals an Dashboards for Business (3 credits)
Introduces design principles for creating meaningful displays of information to support effective business decision making. Studies how to collect and process data; create interactive visualizations; and use them to demonstrate or provide insight into a problem, situation, or phenomenon. Introduces methods to critique visualizations along with ways to identify design principles that make good visualizations effective. Discusses the challenges of making data understandable across a wide range of audiences. Provides an overview of data visualization, key design principles and techniques for visualizing data, and the fundamentals of communication that are required for effective data presentation. Other topics may include ethical uses of information displays, storytelling, infographics, immersive visualizations, and information dashboard design. Offers students an opportunity to use one or more software tools.

MKT 6294 – Customer Centric Research Methods (3 credits)
Focuses on the marketing research process and the analysis of data using software applications. Marketing research helps businesses know their customers and aids in business decision making. Covers topics such as problem definition, research design, sampling, attitude measurement, survey design, data collection, and data analysis. Students apply course topics to their organizations and analyze real company customer satisfaction data to provide managerial insights for a decision maker. Cases highlight the research process, mobile qualitative methods, and practical decision-making skills. SPSS, Qualtrics, and IBM Watson Analytics may be used to develop and analyze the project components.

MISM 6212 – Data Mining and Machine Learning for Business (3 credits)
Examines data mining perspectives and methods in a business context. Introduces the theoretical foundations for major data mining methods and studies how to select and use the appropriate data mining method and the major advantages for each. Students use contemporary data mining software applications and practice basic programming skills. Focuses on solving real-world problems, which require data cleaning, data transformation, and data modeling.

MKTG 6295 - Customer Performance Modeling (3 credits)
Addresses the question of how you know if and when your company's marketing initiatives are impacting customers and creating profit. Covers customer performance measurement, modeling, and feedback systems managers can use to take smarter risks by assessing the marketing initiatives and forecasting profit potentials. Offers students an opportunity to learn how to develop marketing dashboards, through which marketing productivity and profits can be assessed and evaluated. Also covers strategy and tactics that can be developed and communicated, with accountability in mind.

MISM 6213 - Business Information Design, Quality, and Strategy (3 credits)
Covers the leading data practices from early adopters, focusing on innovative information design, data quality, data sharing, and data integration perspectives and methods for managing data and business analytics. Explores how data analytics and management can be strategically implemented to transform a company. Discusses theories and contemporary industry practice, and real-world data and cases are used for discussion and projects. Offers students an opportunity to prepare for problem identification and solution perspectives of data-related projects, gearing up for MISM 6214.

MISM 6214 - Business Analytics Capstone (two 1.5 credit courses)
Offers students an opportunity to engage in a real-world project that engages all concepts and methods covered over the course of the business analytics program. Students apply the business analytics knowledge they have gained to collect, visualize, analyze, and manage data from a real company (or companies). Based on their results, students present a proposal for strategic actions to be taken by the company with a viable scope. The project is reviewed by peers, faculty, and external judges from industry.

Courses and faculty are subject to change. Revised 1/2020
Required to complete degree and graduate = Thirty (30) credits with a cumulative GPA of 3.000 or higher