BQUA - QUANTITATIVE ANALYSIS (BQUA)

BQUA 6801 Stat Infer in Decision Making (3 Credits)
Demonstration of the tools and logic of inferential statistics and illustration of their use in decision making. Emphasis on applications and understanding of statistical concepts. Illustrative examples from various fields of business, such as accounting, finance, marketing and management. Applications using statistical software emphasized. 3 credits

BQUA 6802 Operations Management (3 Credits)
Provides the foundation and stresses the insights necessary for analytical managerial decision making. Emphasis on problem modeling and particularly on the significant role of the manager in the model building process. Offered: Fall.

BQUA 7599 Directed Research (3 Credits)
Individual research in the area of quantitative analysis independent of a formal course structure. Prerequisite: permission of supervising faculty member and department chair prior to registration. 3 credits

BQUA 7701 Data Analys - Bus Intelligence (3 Credits)

BQUA 7706 Management Science (2 Credits)
This course deals with the application of Management Science techniques to analyze a variety of managerial problems. Management Science is a discipline that attempts to aid managerial decision making by applying scientific approach to managerial problems that involve quantitative factors. The approaches covered in this course include optimization and forecasting. The course focuses on learning to recognize when these techniques can and cannot be used, how to apply these techniques and how to interpret the results of a management science study using real world applications and cases. Excel will be the tool of choice, as spreadsheet software is arguably the most commonly available and most frequently used took for analyzing business data.
Prerequisites: BQUA 7700 with a minimum grade of D and BQUA 7702 with a minimum grade of D and BQUA 7704 with a minimum grade of D

BQUA 7708 Data Visualization-Presentatn (2 Credits)
Prior to embarking on detailed predictive analytics, analysts first need to understand their data well; they accomplish this through exploratory data analysis (EDA). Data visualization plays a key role in EDA. Modern software packages contain powerful visualization tools that we can use to creatively explore the data, generate probing questions and garnet insights into answers to these questions, all before exploring them deeper using quantitative techniques. Data visualization goes much further than simply knowing the mechanics of generating different types of charts. Analysts need to develop the skills to ask important questions and to generate the right kinds of charts to find answers. As important and useful as using analytics techniques are to finding nuggets of intelligence hidden in data, they will fail to have any impact unless data analysts can present their findings convincingly to managerial decision makers. This hands-on course will equip participants with the necessary skills to ask important questions about data sets and enable you to use data visualization to answer the questions. The course will also cover dashboard design and concept on presentation of analyses as well as specific R tools to achieve all of this.
Prerequisites: BQUA 7702 with a minimum grade of D

BQUA 7710 Capstone Prjct Cert Data Anly (2 Credits)

BQUA 7720 Introduction to Data Analytics (3 Credits)

BQUA 7722 Expl Data Analysis-Visualizat (3 Credits)

BQUA 7724 Predictive Analytics (3 Credits)
In most business situations, being able to determine the value of some unknown with reasonable accuracy can be beneficial. For example, it would be useful for a company to know the if prospective customer would default on payments (classification), or to know the number of units of a product that it might be able to sell during the next quarter at a given store (regression). Quite often, even seemingly inaccurate estimates of such unknowns can lead to large monetary gains for a company if the new knowledge can lead to a discernable difference in performance. This is the domain of predictive modeling – using historical data to determine the value of an unknown. The course covers both classification and regression techniques. Of course, just any model will not do; analysts need to ensure that their models are valid and will work on new data and the course covers approaches to model validation. The course will equip participants with the ability to identify situations that could benefit from predictive models, to identify the data requirements and work with concerned people to get the data, to manipulate the data into a form usable for predictive analysis, and to build, evaluate, present and deploy the models.

BQUA 7811 Quantitative Methods (3 Credits)
A practical as well as intuitive understanding of mathematical fundamentals. Emphasis on those quantitative tools that the modern manager must comprehend in order to more effectively incorporate into the decision-making process available data, business models and sophisticated computerized problem-solving routines. 3 credits

BQUA 7812 Advanced Data Analysis (3 Credits)
Coverage of a wide range of univariate and multivariate statistical techniques. Univariate topics include analysis of variance, design of experiments, and regression and correlation analyses. Multivariate topics include principal components, factor, discriminant, canonical correlation and cluster analyses and MANOVA. Emphasis on data analysis and implications of results for the managerial decision-making process. 3 credits

BQUA 7813 Management Science (3 Credits)
Theoretical underpinnings and practical understanding of the fundamentals of management science. Emphasis on problem modeling, particularly on the significant role of the manager in the model building process. Topics include identification, formulation, interpretation and sensitivity analysis of business models. Case studies and management science software used extensively. 3 credits

BQUA 7819 Business Forecasting (3 Credits)
Forecasting function in the organization. Introduction to various forecasting techniques, including smoothing and decomposition methods, regression analysis, time series analysis, ARIMA modeling, and other econometric methods. Emphasis on operational expertise in generation of forecasts using each of these methods; interpretation of the forecasts and assessment of the implications for the decision-making process. Not offered 2010-11.
Prerequisites: BMBA 9102 (may be taken concurrently)

BQUA 7825 Supply Chain Management (3 Credits)
Firms in many industries are scrambling to develop innovative ways to move products from raw materials through manufacturing to customers more quickly and efficiently. This course examines many of the recent innovations in this area. Through this course students will (a) recognize salient strategic challenges and opportunities for managing supply chains; (b) learn to use several basic analytical tools to assess performance tradeoffs and support decision making; (c) become familiar with the core supply chain concepts and strategies that have been adopted by leading companies and (d) review emerging supply chain strategies facilitated by Internet technology.

BQUA 7830 Supply Chain Analytics (3 Credits)
This course will provide students with quantitative modeling skills and data visualizing tools to aid business decision making in supply chain management. The course requires the use of quantitative models used in supply chain management as well as an analysis of data to support the understanding of these models. Students will develop and analyze quantitative models using Excel, visualize the data and results, and learn how to translate this knowledge into increasing bottom-line profitability. The topics will be drawn from key areas in supply chain management including network design and optimization, inventory replenishment and analysis and advanced transportation and planning.
Prerequisites: BMBA 9111 with a minimum grade of D

BQUA 7835 Managing Service Operations (3 Credits)
The service sector is the largest component of all developed economies. Yet, recent evidence suggests that productivity in service firms has substantially lagged that in the manufacturing sector and customer satisfaction with service firms has been steadily declining. This course compares service and manufacturing organizations, exposes students to major issues involved in designing and managing service delivery systems, and demonstrates how quantitative and qualitative methodologies can be used to improve quality and productivity in service organizations. Operating issues related to both the "pure" service sector (e.g., banking, health care, travel and tourism, telecommunications, transportation) and service functions of the manufacturing sector (e.g., customer service, financing, and information management) will be examined. Offered: Fall.

BQUA 7840 Procurement Management (3 Credits)
This course will cover both tactical and strategic aspects of the procurement process. It covers global sourcing and procurement strategies including supplier selection and evaluation, supplier relationships and risk management, negotiation and contract management, and e-Procurement. From the tactical point of view it covers the elements of the purchase-to-pay process including order management, spending analysis and category management. Woven through each topic are performance measures and critical success factors for an overall responsive and resilient procurement process. Offered: Irregularly.

BQUA 7845 Logistics and Operations in Supply Chain Management (3 Credits)
This course is about logistics: the design, planning and quality control of supply chains in business. Supply chains extend from raw material suppliers through production to the consumer and there are many logistics problems associated with each stage. Managing the logistics and operation of a supply chain is a demanding task, which requires a mixture of skills. This course is concerned with developing those skills as well as understanding how to efficiently manage the supply chain operation in practice.
Prerequisites: BMBA 9455 with a minimum grade of D and BMBA 9458 with a minimum grade of D

BQUA 7897 Directed Research (2 Credits)

BQUA 7898 Directed Research (3 Credits)
Individual research in the area of quantitative analysis independent of a formal course structure. Prerequisite: permission of supervising faculty member and department chair prior to registration. 3 credits

BQUA 7899 Directed Research (3 Credits)
Individual research in the area of quantitative analysis independent of a formal course structure. Prerequisite: permission of supervising faculty member and department chair prior to registration. 3 credits