MASTERS, BUSINESS ANALYTICS (MSA)

MSA-601 INTRO TO BUSINESS ANALYTICS II (3 Credits)
Analytics is used to transform data into actions through analysis and insights in the context of organizational decision-making and problem solving. Analytics include the extensive use of data, statistical and quantitative analysis. The ability to leverage data effectively to drive rapid, precise and profitable decisions is a critical strategic advantage for companies. The increasing availability of braod and deep sources of information - Big Data - increases the importance of business analytics in enterprises of all types and sizes. This course aims to build upon foundational mathematical and statistical basis for managerial decision making to introduce higher-level and advanced statistical applications. This course begins with a review of descriptive statistics, including central tendency, variability, probability and data visualization. After a review, the course covers estimation, confidence intervals and effect size. Inferential statistics are introduced using a range of decision-making tools - t tests; one-way, factorial, and covariate ANOVAs; linear and multiple linear regression; regression model building; forecasting, time series, and trend analysis. Further considerations for big data, analysis techniques, and methods for quality control are made with an emphasis on the use of these techniques in data analysis.
Restrictions: RG.BUSAN

MSA-604 ANALYTICAL PROGRAMMING (3 Credits)
The course introduces the object-oriented approach to software design using a programming language such as Python, R or Java. The programming language is used to implement software designs. No previous programming experience is presupposed.
Restrictions: RG.UG.GR

MSA-613 PRESCRIPTIVE ANALYTICS (3 Credits)
The focus of this course is mainly on prescriptive analytics with some parts focused on predictive analytics. Prescriptive analytics seeks to determine the best solution or outcome among various alternatives for a given situation, as well as, suggest decision options for how to take advantage of a future opportunity or mitigate a future risk, and illustrate the implications of each decision option. In this course, students will be familiar with teh techniques, tools, and applications that support managerial decision-making. The emphasis will be on the formulation of different optimization problems and the use of appropriate quantitative techniques to solve these problems.

MSA-628 PREDICTIVE ANALYTICS (3 Credits)
Predictive Analytics is the practice of using several techniques to analyze data to make predictions about future events or to discover meaningful patterns and rules. These techniques are related to Data Mining - the process of extracting useful information from large data sets. Companies now operate in a manner where they produce massive amounts of data sets. Companies look towards predictive analytics to improve knowledge of customers, markets, revenues and profits, market share based on historical data. This course offers an introduction to tools to enhance managerial decision making at all elvels of the organization and across business units. Students will be presented with a question, problem or decision and will be asked to develop solutions using data techniques. The data will be extracted from an array of sources (internal or external, data format). Students will also be asked to choose the appropriate models, tools, and methods for analysis.

MSA-645 ANALYTICS CAPSTONE (3 Credits)
The capsone course provides students with an oppurtunity to synthesize what they have learned about analytics during their graduate degree program. Students will integrate and apply analytical skills and knowledge acquired in the previous courses - including data management, big data, visualization, data mining, predictive and optimization techniques, and statists - to complete a project involving actual data in a realistic setting.