MANAGEMENT SCIENCE (MAS)

MAS 105. Quantitative Methods in Business I. 3 Credit Hours.
This course provides a background in algebra, linear equations, matrices, quadratic, exponential, and logarithmic functions appropriate for the successful understanding, interpretation, and use of these concepts and their application to business and economics within the Business School curriculum and in career endeavors. The course also provides an introduction to the mathematics of finance, interest rates, discounting of future returns, and linear programming.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 110. Quantitative Applications in Business. 3 Credit Hours.
Review of algebra emphasizing its application to supply and demand functions, market equilibrium, compound interest, and amoritization. Differential calculus emphasizing its applications to marginal cost and revenue functions, maximization, taxation in competitive markets, and elasticity of demand are discussed. The application of integral calculus to total cost and profit of demand, to total cost and profit functions, consumer's and producer's surplus, computation of present value, and constrained optimization using partial differentiation are also included.
Requisite:Mia Herbt Bus Schl And Prerequisite: ALEKS score>=76 Or SAT MTH score >=700 Or SAT Mth Section Score>=730 Or ACT Mth score>=31 Or score of 4 AP Calculus (AB) Or score of 3 in AP Calculus (BC) Or MTH 108 or MTH 107 with a grade of C- or higher.
Components: LEC.
Grading: GRD.
Typically Offered: Fall, Spring, & Summer.

MAS 201. Introduction to Business Statistics. 3 Credit Hours.
Data analysis and presentation, cross tabulations, descriptive statistical meas ures, probability, sampling, statistical inference, hypothesis testing for one and two populations, covariance and correlation analysis. Utilization of microc omputer statistical packages is also included.
Prerequisites: MAS 110 or MTH 130 or MTH 141 or MTH 151 or MTH 161 or MTH 171.
Components: LEC.
Grading: GRD.
Typically Offered: Fall, Spring, & Summer.

MAS 202. Intermediate Business Statistics. 3 Credit Hours.
Chi-squared goodness of fit tests, and contingency tables, analysis of variance, simple linear regression, multiple regresion, time series, forecasting, statistical methods of quality. Utilization of microcomputer statistical packages, case analyses, and presentations are also included.
Prerequisite: MAS 201 or MAS 311 or MTH 224 or ISE 311 or PSY 291 or PSY 292 and Requisite: Miami Herbert Business School.
Components: LEC.
Grading: GRD.
Typically Offered: Fall, Spring, & Summer.

MAS 311. Applied Probability and Statistics. 3 Credit Hours.
Descriptive statistics, basic probability, probability distributions, distribution theory, point and interval estimation, and single sample hypothesis testing.
Prerequisite: MTH 162 or MTH 172. Or Corequisites: MTH 162 or MTH 172 including equivalents.
Components: LEC.
Grading: GRD.
Typically Offered: Fall & Spring.

MAS 312. Statistical Methods and Quality Control. 3 Credit Hours.
Two sample hypothesis testing, simple and multiple regression, analysis of variance, design of experiments, and statistical quality control.
Prerequisite: MAS 311 or ISE 311 or Equivalent and Requisite: Miami Herbert Business School.
Components: LEC.
Grading: GRD.
Typically Offered: Fall & Spring.

MAS 332. Data Acquisition, Preparation and Visualization. 3 Credit Hours.
This course provides an in depth view of working with data to extract and present valuable information. Students will learn to collect, clean, manipulate, analyze, and visualize data from various sources correctly and efficiently. Through hands-on application, students will gain an understanding of what problems can occur when dealing with a variety of data and what solutions exist. Computing is a major component of this course, and students will learn a number of in-demand technical skills.
Prerequisite: MAS 202 or MAS 312.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MAS 342. Introduction to Optimization and Decision Making. 3 Credit Hours.
This course introduces the principles and techniques of applied mathematical programming and computational methods for managerial decision-making. Computer software will be used extensively to solve both small-scale and large-scale optimization problems. The course covers theory and applications of Linear Programming, Mixed Integer Programming, Binary Programming, Non-linear Programming, Network Optimization.
Prerequisite: MAS 201 or MAS 311.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MAS 352. Sports Analytics. 3 Credit Hours.
In this course students investigate questions that sports organizations face in business operations (ticketing, pricing, sales, and finance), and in team operations (scouting, coaching, and player personnel). Students will learn statistical and machine learning techniques such as mixed-effects regression models, random forests, neural networks, clustering, and support vector machines. Focus of the course will be on data management, data visualization, predictive modeling, forecasting, as well as written and verbal communication of the results of analysis. The programming language R will be used extensively in this course.
Prerequisite: MAS 332.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 432. Data Analysis. 3 Credit Hours.
This course introduces students to the analysis of various data types, with an emphasis on interpreting and communicating result. The course begins with linear regression modeling of normally distributed outcomes, and extends the concepts to other important data types frequently encountered in practice. Students will gain a firm understanding of a wide range of statistical models, when each is appropriate, and how to implement, interpret, and communicate results.
Prerequisite: MAS 202 or MAS 312 or ISE 312 or equivalent.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MAS 442. Stochastic Models in Operations Research. 3 Credit Hours.
Introduction to probabilistic models and their applications. Topics include inventory theory, stochastic processes (queuing systems, Markov chains), and computer simulation. Lecture, 3 hours.
Prerequisite: MAS 311 or ISE 311 or equivalent.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MAS 496. Directed Studies in Business Analytics. 1-3 Credit Hours.
Supervised readings, individual research project, or independent investigation of selected non-STEM related problems in the discipline. Offered only by special arrangement with supervising faculty member, who approves topic and evaluation process at time of registration.
Components: THI.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 497. Directed Studies in Business Analytics. 1-3 Credit Hours.
Supervised readings, individual research project or independent investigation of selected STEM-related problems in the discipline. Offered only by special arrangement with supervising faculty member, who approves topic and evaluation process at time of registration.
Components: THI.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 498. Special Topics in Business Analytics. 3 Credit Hours.
Special topics in selected non-STEM areas of Business Analytics.
Requisite: Sophomore Standing or Higher.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 499. Special Topics in Business Analytics. 3 Credit Hours.
Special topics in selected STEM areas of Business Analytics.
Requisite: Sophomore Standing or Higher.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 547. Computer Simulation Systems. 3 Credit Hours.
Introduction to discrete-event computer simulation and hands-on development of simulation models. Topics include introduction to queuing theory, input and out put analysis, random number generation, and variance reduction techniques. Students practice their modeling skills using commercial state-of-the-art simulation software. Assigned readings of real-life simulation projects complement the material learned in the classroom. Lecture, 3 hours.
Prerequisite: MAS 311 or ISE 311 or equivalent.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MAS 548. Machine Learning for Analytics. 3 Credit Hours.
An introduction to the principles and techniques of machine learning. Topics covered include the machine learning process, data preprocessing, common machine learning techniques and methods for evaluating model performance. The course will involve a combination of lectures, labs, projects and case studies.
Prerequisite: MAS 432.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MAS 549. Big Data Analytics. 3 Credit Hours.
As firms have the ability to access and store large amounts of customer and business data, they are faced with the complexities associated with Big Data. This class will discuss the challenges and potential solutions in working with Big Data through use cases and applications. Hands-on tools and methodologies that are needed when handling, visualizing, and/or analyzing Big Data to solve business critical questions will be presented.
Prerequisite: MAS 332 and MAS 432.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 550. Management Science Internship. 1-3 Credit Hours.
Student is individually assigned to operating business firm or other organization to gain insight into management practice in area of career interest. Periodic reports and conferences are required. Permission of departme nt chair is required prior to registration.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 551. Business Analytics Capstone. 3 Credit Hours.
The goal of the Business Analytics Capstone course is to apply the skills learned throughout the undergraduate degree in Business Analytics to a single data analytics project. Students will work in groups on a project assigned to them by the instructor. Project topics will vary depending on availability, but reasonable efforts will be made to match projects with student interest. The project will expose students to the entire spectrum of Business Analytics; from initiating a project and defining the scope and goals, to data collection, cleaning, and exploration, to modeling and suggesting recommendations based on results. Along the way, students will practice effectively communicating with stakeholders who may or may not be familiar with the complex analytical methods implemented.
Prerequisite: MAS 332 and MAS 342 and MAS 432.
Components: EXP.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 555. Management Science Departmental Honors Research Project.. 3 Credit Hours.
Research project to fulfill requirements for Departmental Honors in Management Science.
Components: THI.
Grading: SUS.
Typically Offered: Offered by Announcement Only.

MAS 601. Applied Regression Analysis. 3 Credit Hours.
Theory and practical application of regression modeling and analysis. Understanding the role and responsibility of a statistician is also included.
Prerequisite: MAS 631.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 610. Data Analytics for Managers. 3 Credit Hours.
The topics of this course include: data collection, data analysis, probability concepts and distributions, sampling and estimation, hypothesis testing, simple and multiple regression. The course will be taught using Excel or other software tools.
Components: LEC.
Grading: GRD.
Typically Offered: Fall, Spring, & Summer.

MAS 611. Principles of Quality Management. 3 Credit Hours.
The definition of quality management, its history, and comparison of various schools of thought. An introduction to the theories of systems, variation, knowledge, and psychology as they relate to quality management. Deming's fourteen points for management are studied through examples and cases.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 612. Advanced Quantitative Analysis. 3 Credit Hours.
The application of probability theory to the formulation and analysis of mathematical models for decision making. Applications are taken from inventory control, forecasting, waiting lines, quality control, production, and operations management.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 617. Statistics and Data Analysis. 2 Credit Hours.
This course deals with introductory business statistics, as well as data acquisition, preparation, and visualization. It will introduce computer software to extract data and present information to stakeholders. Students will learn SQL for querying databases, as well as Tableau for creating quick visuals and interactive dashboards. We will also cover basic visualization capabilities in Excel and essential data-related concepts such as looking at data in a critical way to identify curious behaviors, and understanding basic data requirements and what to do when you do not have the exact data you need.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MAS 627. Programming for Data Analytics. 2-3 Credit Hours.
This course will provide an introduction to various programming languages useful in data analytics. Topics covered will include cleaning, manipulating, exploring and visualizing data, as well as communicating results and reproducibility. While this course will cover wide range of topics in detail, students are not expected to have prior experience with any languages covered throughout the course.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MAS 628. Introduction to Accounting Analytics. 3 Credit Hours.
This course introduces students to applications of data analytics techniques in accounting which includes: financial reporting, managerial accounting, taxation, and auditing.
Prerequisite: ACC 301. And ACC 402. And ACC 403.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 629. SAS Programming for Business Analytics. 2 Credit Hours.
SAS (Statistical Analysis System) is considered a world leader in business analytics software. This course provides the student with the tools necessary to program in SAS at an intermediate level necessary for data scientists in many Fortune 500 companies in the pharmaceutical, financial, manufacturing and health care industries. The course begins with an introduction to Base SAS software, including the reading, manipulation and transformation of data. Techniques for restructuring data files, merging and concatenating data sets, creating summary reports as well as the utilization of basic statistical procedures will comprise the first half of the course. The middle of the course will focus on intermediate SAS skills for Data Management. The topics include error checking, report generation, date and time processing, PROC SQL, SAS Graph, SAS Macros, and the ODS (Output Delivery System) for production quality output. The last third of the course will include SAS statistical procedures most often utilized by data analysts and covered in the SAS Certified Statistical Business Analyst Credential.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MAS 630. Quality Management in Practice. 3 Credit Hours.
This course presents administrative systems necessary for an organization or an individual to pursue quality management. The course presents a functional model for quality management.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 631. Statistics for Managerial Decision Making. 2 Credit Hours.
This course aims to familiarize the student with statistical theory, tools, and methods required for business systems analysis and improvement. Topics include descriptive methods, elementary probability, random variables and the distributions, hypothesis testing, confidence intervals, statistical modeling, and regression.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MAS 632. Management Science Models for Decision Making. 2 Credit Hours.
This course aims to familiarize the student with Management Science tools for business systems analysis and improvement. The coverage includes linear and integer programming models, project management, simulation, queuing, and decision analysis. Some widely used software are illustrated through examples and case studies derived from business applications.
Components: LEC.
Grading: GRD.
Typically Offered: Fall & Spring.

MAS 633. Introduction to Quality Management. 2 Credit Hours.
Introduction to the major elements of Dr. Deming's theory of management, including Dr. Deming's System of Profound Knowledge and Fourteen Points for Management. Additionally, participants are introduced to "Six Sigma" tools and methods. These tools and methods have been adopted with great success by many of the largest organizations in the world, for example, General Electric, Allied Signal, Dupont, American Express, and J.P. Morgan. Additionally, the course is a prerequisite for the "Six Sigma" Green Belt certification examination.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MAS 634. Administrative Systems for Quality Management. 2 Credit Hours.
This course presents a model to pursue quality management (QM). It features administrative systems and structures necessary for Quality Management. The administrative systems and structures presented in this course are required to sit for the Six Sigma Management "Green Belt" certification examination.
Prerequisite: MAS 633.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MAS 635. Design of Experiments. 2 Credit Hours.
This course presents tools and methodology useful in conducting experiments that provide valid answers to questions of interest to the experimenter. The course discusses an overall approach to obtaining and analyzing experimental data, the advantages of using structured multi factor experiments to screen for important factors, ways of minimizing the amount of data points needed to obtain desired information, and how to identify values of experimental factors that optimize the value of measured responses. Factorial designs, fractional factorial designs, screening designs, and response surface designs are presented. Emphasis is placed on the knowledge required for proper application of these methods through many examples in business and quality management.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 636. Dashboard Tools for Visual Analytics. 2 Credit Hours.
This course teaches modern analytic tools for visual analytics and dashboarding to monitor and improve business processes. Students will learn to identify and communicate key performance measures visually and in an interactive manner accessible to everyday business stakeholders.
Prerequisite: MAS 631.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MAS 637. Applied Regression Analysis I. 2 Credit Hours.
This course aims to familiarize the student with statistical prediction. It covers simple and multiple regression methods as well as time series and forecasting models in business. Instead of theoretical development, the course emphasize s the application of these methods in business systems analysis and improvement.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MAS 638. Business Analytics Consulting. 2 Credit Hours.
The purpose of this course is to enhance students' consulting skills in management science. In addition to skills of modeling and choosing appropriate tools f or analysis, these include the communication skills of presenting quantitative and analytical material in business settings. The course is structured around a set of case studies that are based on real applications of management science models and methods discussed in MAS 631 and MAS 632.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MAS 639. Data Acquisition, Preparation, and Visualization. 2 Credit Hours.
This course teaches using statistical computing software to get a better understanding of what problems can occur (and what solutions exist) when dealing with a variety of data types and sources. It will also discuss how to address data visualization and how to leverage current methods and software to best communicate with results and decision with stakeholders.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MAS 640. Applied Time Series Analysis and Forecasting. 2 Credit Hours.
Time series data occur when a single experimental unit or process is observed repeatedly over time. Data of this type are common in finance and economics. Statistical methods that assume independence are inappropriate for time series data. This course will provide the students with the basic theory and tools for the statistical analysis and interpretation of time series data. Broadly, the methods may be categorized into time-domain and frequency-domain methods. Time-domain methods develop explicit models for the evolution of a process over time. Frequency-domain methods equivalently model the correlation structure of the time series. Other topics include methods for model-based estimation, model selection, diagnostics, forecasting, and computing as they relate to time series analysis.
Prerequisites: MAS 637 or MAS 601.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MAS 641. Prescriptive Analytics. 3 Credit Hours.
This course covers the application of some well-known Prescriptive Analytics models and tools to improve decision making in business and management. Topics include optimization (linear and integer programming), networks, sensitivity analysis, decision analysis and decision trees, and Monte Carlo simulation.
Prerequisite: MAS 610.
Components: LEC.
Grading: GRD.
Typically Offered: Fall & Spring.

MAS 642. Supply Chain Analytics. 2-3 Credit Hours.
This course studies key decision areas in supply chain design and operation. Students will learn what data are needed and how to use data to measure supply chain performance. They will also learn to apply various tools and methods to analyze trends, extract knowledge and business intelligence, and make decisions. Through the analysis and discussion of case studies, they will get useful insights on how to optimize the value of supply chain processes and operations, to streamline the goals and to design flexible supply chains.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 646. Applied Regression Analysis II. 2 Credit Hours.
This is a second course in regression modeling, extending the concept of linear regression for use with non-normal data such as binary, count, or time-to-event data. We will discuss estimation, inference, and model diagnostics with an emphasis on using statistical software to fit models and interpret the results. Topics covered include logistic regression for binary data, various extensions of logistic regression to multinomial data, Poisson regression for count data, and proportional hazards regression for time-to-event or survival data.
Prerequisite: MAS 601. Or MAS 637. With a Grade B or Higher.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MAS 647. Computer Simulation Systems. 3 Credit Hours.
Introduction to discrete-event computer simulation and hands-on development of simulation models. Topics include introduction to queuing theory, input and out put analysis, random number generation, and variance reduction techniques. Students practice their modeling skills using commercial state-of-the-art simulation software. Assigned readings of real-life simulation projects complement the material learned in the classroom. Lecture, 3 hours.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 648. Machine Learning for Data Analytics I. 2 Credit Hours.
Data Mining encompasses finding meaningful and useful trends in data. The meaningful part depends on the application and even the specific data set you are using. Another definition that can be used is that data mining is the application of statistical machine learning techniques to find these trends. Our focus in this course will be on the development and use of traditional and cutting edge data mining/machine learning techniques and their applications across a spectrum of data sets. The topics we will cover are in supervised learning (regression, classification), unsupervised learning (clustering, principal components analysis, factor analysis, etc), and if time permits semi-supervised learning and recommendation systems.
Prerequisite: MAS 601. Or MAS 637. With a Grade B or Higher.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MAS 649. Big Data Analytics. 2 Credit Hours.
As firms have the ability to access and store large amounts of customer and business data, they are faced with the complexities associated with Big Data. Big Data refers to very large data sets that can be analyzed to reveal important patterns, trends, and associations, especially relating to customer behaviors and business processes. This class will discuss the changes that are needed when handling, visualizing, and/or analyzing Big Data to solve business critical questions.
Prerequisite: MAS 601. Or MAS 637. And MAS 639. with a Grade B or Higher.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MAS 650. Business Analytics Internship. 1-4 Credit Hours.
Student is individually assigned to operating business firm or other organization to gain insight into management practice in area of career interest. Periodic reports and conferences are required. Permission of department chair is required prior to registration.
Components: LEC.
Grading: GRD.
Typically Offered: Fall, Spring, & Summer.

MAS 651. Machine Learning for Data Analytics II. 2 Credit Hours.
This course aims to introduce recent advanced analytical techniques developed from the Statistical, Data Mining and Machine Learning communities, These techniques have become widely used by Business Analysts and Data Scientists to address complex decision-making problems in numerous industries. This course is designed to provide students with a practical understanding of some of the most powerful Machine Learning methods used by today's Data Analysts. Specifically, students will become familiar with supervised and unsupervised learning and apply these techniques to the numerous data-driven applications in predictive analytics.
Prerequisite: MAS 648. with a Grade B or Higher.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MAS 652. Business Analytics Capstone Project. 2-4 Credit Hours.
including data collection and analysis. The description of the problem in question, the approach used to address it, and the findings obtained by the group are to be described in formal written reports. The reports will be evaluated both on their quantitative value and on the quality of the writing.
Prerequisites: MAS 631 and MAS 632, and MAS 637, and MAS 639.
Components: LEC.
Grading: GRD.
Typically Offered: Fall, Spring, & Summer.

MAS 663. Project Management and Modeling. 2 Credit Hours.
This course considers the various methods, techniques, and software tools of project management and modeling with special emphasis on real estate projects and development. Topics include: project selection and strategy, risk assessment, conflict and negotiation, budgets, costs, and resource allocation, monitoring and information systems, project control and auditing, and project closure. The course is designed to show the integration of the various roles of owners, developers, builders, architects, and engineers in the project management process.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 680. Spatial Statistics. 3 Credit Hours.
Spatial data commonly arise from many fields including business, ecological and health studies. Such data are often spatially correlated which poses challenges to both estimation and statistical inference. We will discuss advanced techniques to tackle the spatial correlation. Topics including variogram estimation, spatial prediction, spatial point pattern analysis, estimating function based methods, and others. Real data examples will be used to motivate and illustrate the use of these methods.
Prerequisite: ECO 520.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 681. Statistical Machine Learning. 3 Credit Hours.
This course introduces statistical aspects of machine learning algorithms. The focus is on characterizing the generalization ability of machine learning algorithms in order to quantify their performance on new data. It covers fundamental techniques in statistical theoretical analysis, their applications in supervised and unsupervised learning algorithms, and their applications in statistical and computational tradeoffs in non-convex optimizations. Prerequisite: ECO 520. And ECO 620. Or MAS 601. with a Grade B or Higher.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 691. Topics in Business Analytics. 1-3 Credit Hours.
Topics in selected areas of specialization.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 692. Topics in Management Science. 1-3 Credit Hours.
Topics in selected areas of specialization.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 693. Directed Study in Business Analytics. 1-3 Credit Hours.
Investigation and research in special areas of interest. Offered by special arrangement.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 695. Directed Study in Operations Research. 1-3 Credit Hours.
Investigation and research in special areas of interest. Offered by special arrangement.
Components: SEM.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 696. Directed Study in Statistics. 1-3 Credit Hours.
Investigation and research in special areas of interest. Offered by special arrangement.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 699. Directed Study. 1-3 Credit Hours.
Offered by special arrangement.
Components: THI.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 720. Research in Residence. 0 Credit Hours.
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MAS 710 (usually six credits). Credit not granted. May be regarded as full time residence.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 725. Continuous Registration--Master's Study. 0 Credit Hours.
To establish residence for non-thesis master's students who are preparing for major examinations. Credit not granted. Regarded as full time residence.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MAS 810. Master's Thesis. 1-6 Credit Hours.
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.
Components: LEC.
Grading: SUS.
Typically Offered: Offered by Announcement Only.

MAS 830. Pre-Candidacy Dissertation Research. 1-12 Credit Hours.
Doctoral dissertation credits taken prior to Ph.D. student's candidacy. The student will enroll for credit as determined by his/her advisor. Not more than 12 hours of MAS 830 may be taken in a regular semester, nor more than six in a summer session.
Components: THI.
Grading: SUS.
Typically Offered: Fall, Spring, & Summer.

MAS 840. Post-Candidacy Dissertation Research. 1-12 Credit Hours.
Doctoral dissertation credits taken after Ph.D. student has been admitted to candidacy. The student will enroll for credit as determined by his/her advisor. Not more than 12 credits in MAS 840 may be taken in a regular semester, nor more than six credits in a summer session.
Components: THI.
Grading: SUS.
Typically Offered: Fall, Spring, & Summer.

MAS 850. Research in Residence. 1 Credit Hour.
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.
Components: THI.
Grading: SUS.
Typically Offered: Fall, Spring, & Summer.