**MATHEMATICS (MM)**

**MM150: Survey of Mathematics**
Students will improve their background in mathematical concepts and skills utilizing real-world scenarios to solve math problems. Students will also enhance their own knowledge by demonstrating the ability to explain and interpret concepts, which is a valued skill in many fields.
Quarter Credit Hours: 5 | Prerequisite: None

**MM150M1: Estimation and Critical Thinking**
Use estimation to predict results.
Quarter Credit Hours: 1 | Prerequisite: None

**MM150M2: Equations in Real Life**
Solve real-life problems using equations.
Quarter Credit Hours: 1 | Prerequisite: None

**MM150M3: Professional and Personal Math**
Use mathematics in personal and professional contexts.
Quarter Credit Hours: 1 | Prerequisite: None

**MM150M4: Measurement Systems**
Convert between and within measurement systems.
Quarter Credit Hours: 1 | Prerequisite: None

**MM150M5: Basic Statistical Techniques**
Analyze data using basic statistical techniques in real-life situations.
Quarter Credit Hours: 1 | Prerequisite: None

**MM207: Statistics**
This course serves as an introduction to collecting, organizing and summarizing, and analyzing data using statistical software. Topics include basic terminology, measurement, sample procedures, graphical and numerical descriptions of data, basic probability, and making inferences from a sample to the population. Statistical software is required in this course and used extensively. The course focuses on "thinking with" statistics rather than "computing" statistics.
Quarter Credit Hours: 5 | Prerequisite: MM150 or higher

**MM207M1: Examining Data**
Examine data appropriately.
Quarter Credit Hours: 1 | Prerequisite: MM150 or higher

**MM207M2: Graphical Methods**
Explain data using graphical methods.
Quarter Credit Hours: 1 | Prerequisite: MM150 or higher

**MM207M3: Variable Relationships**
Determine the relationship between two variables.
Quarter Credit Hours: 1 | Prerequisite: MM150 or higher

**MM207M4: Applying Probability**
Apply probability to real-world problems.
Quarter Credit Hours: 1 | Prerequisite: MM150 or higher

**MM207M5: Confidence Intervals**
Calculate confidence intervals to estimate population parameters.
Quarter Credit Hours: 1 | Prerequisite: MM150 or higher

**MM212: College Algebra**
This course covers topics of algebra, including linear functions, equations and inequalities, systems of equations with two variables, polynomial functions, rational and radical equations and inequalities, exponential and logarithmic functions, ratios, proportions, variation, and graphing.
Quarter Credit Hours: 5 | Prerequisite: None

**MM212M1: Factoring and Polynomials**
Manipulate problems involving polynomials.
Quarter Credit Hours: 1 | Prerequisite: None

**MM212M2: Analyzing Rational and Radical Expressions**
Analyze rational and radical expressions.
Quarter Credit Hours: 1 | Prerequisite: None

**MM212M3: Solving Linear Equations and Graphing**
Solve linear equations.
Quarter Credit Hours: 1 | Prerequisite: None

**MM212M4: Solving Quadratic Equations**
Solve quadratic equations.
Quarter Credit Hours: 1 | Prerequisite: None

**MM212M5: Solving Exponential and Logarithmic Equations**
Solve exponential and logarithmic equations.
Quarter Credit Hours: 1 | Prerequisite: None

**MM250: Discrete Mathematics**
This course is designed to provide information technology and computer science students with an overview and appreciation of mathematical concepts, highlighting applications of mathematics to information technology and computer science. Topics include set theory, logic, matrices, sequences and series, graph theory, and algorithm analysis. The student will complete assignments in each of these areas and be able to identify and apply the core concepts in each of these areas to related problems.
Quarter Credit Hours: 5 | Prerequisite: MM150 or MM212

**MM250M1: Numbers and Logical Reasoning**
Apply logical reasoning to address real-world problems.
Quarter Credit Hours: 1 | Prerequisite: MM150 or MM212

**MM250M2: Counting Techniques and Probability**
Solve problems using elementary probability.
Quarter Credit Hours: 1 | Prerequisite: MM150 or MM212

**MM250M3: Sets, Sequences, and Series**
Solve problems using arithmetic sequences and series.
Quarter Credit Hours: 1 | Prerequisite: MM150 or MM212

**MM250M4: Graph Theory and Trees**
Apply discrete structures to model real-world situations.
Quarter Credit Hours: 1 | Prerequisite: MM150 or MM212

**MM250M5: Transition Diagrams**
Apply matrices to model real-world situations.
Quarter Credit Hours: 1 | Prerequisite: MM150 or MM212

**MM255: Business Math and Statistical Measures**
In this course, the student will apply math skills and knowledge to solve financial problems and conduct statistical analyses. Through expert step-by-step guidance using sample problems and solutions related to banking, credit, basic finance, investments, and statistics, the student will also gain an understanding of financial instruments and terminology used in business.
Quarter Credit Hours: 5 | Prerequisite: MM150 or higher

**MM255M1: Applications of Business Formulas**
Apply mathematical formulas to everyday business transactions.
Quarter Credit Hours: 1 | Prerequisite: MM150 or higher

**MM255M2: Interest and Loan Concepts and Calculations**
Apply mathematical concepts to starting or running a small business.
Quarter Credit Hours: 1 | Prerequisite: MM150 or higher
MM255M3: Business Investments
Analyze the results of mathematical calculations to make financial decisions.
Quarter Credit Hours: 1 | Prerequisite: MM150 or higher

MM255M4: Business Statistics
Calculate and apply measures of central tendency and standard deviation to business applications.
Quarter Credit Hours: 1 | Prerequisite: MM150 or higher

MM255M5: Making Financial Business Decisions
Recommend business actions using cost analysis.
Quarter Credit Hours: 1 | Prerequisite: MM150 or higher

MM260: Linear Algebra
This course is designed to provide students with an overview and appreciation of linear algebra concepts, highlighting applications of linear algebra to real-world situations. Topics include vector operations, matrices, spaces and subspaces, eigenvalues and eigenvectors, and real-world applications of linear algebra. The student will complete assignments in each of these areas and be able to identify and apply the core concepts in each of these areas to related problems.
Quarter Credit Hours: 5 | Prerequisite: MM212

MM305: Business Statistics and Quantitative Analysis
This course introduces the student to basic business statistics and quantitative analysis and their application in solving business problems. Through a combination of readings, practical application exercises, discussions, and use of computer software packages, the student will be provided with the introductory knowledge and the skills needed by managers to optimize the decision-making process.
Quarter Credit Hours: 6 | Prerequisite: Students enrolled in the Bachelor of Science in Business Administration or Finance programs: MM255; all other students: MM207

MM305M1: Descriptive Statistics and Probability
Apply descriptive statistics and probability methods to business situations.
Quarter Credit Hours: 1 | Prerequisite: Students enrolled in the Bachelor of Science in Business Administration or Finance programs: MM255; all other students: MM207

MM305M2: Data Distributions
Analyze sampling information using technology.
Quarter Credit Hours: 1 | Prerequisite: Students enrolled in the Bachelor of Science in Business Administration or Finance programs: MM255; all other students: MM207

MM305M3: Inferential Statistics
Apply inferential statistical techniques to real-world business environments.
Quarter Credit Hours: 1 | Prerequisite: Students enrolled in the Bachelor of Science in Business Administration or Finance programs: MM255; all other students: MM207

MM305M4: Decision Analysis
Apply decision analysis to real-world situations.
Quarter Credit Hours: 1 | Prerequisite: Students enrolled in the Bachelor of Science in Business Administration or Finance programs: MM255; all other students: MM207

MM305M5: Forecasting Methods
Recommend solutions to business problems using quantitative analysis.
Quarter Credit Hours: 1 | Prerequisite: Students enrolled in the Bachelor of Science in Business Administration or Finance programs: MM255; all other students: MM207

MM305M6: Quality Control
Evaluate business practices with quantitative analysis techniques.
Quarter Credit Hours: 1 | Prerequisite: Students enrolled in the Bachelor of Science in Business Administration or Finance programs: MM255; all other students: MM207

MM325: Statistical Data Analysis
This course is designed as the terminal statistics course for undergraduate data analysis. You will be expected to leverage skills from prerequisite programming courses in the data analysis using real-world scenarios. Topics in the course will include, but are not limited to, advanced applications of the normal distribution, random variables, hypothesis testing, types of errors, analysis of variance (ANOVA), advanced regression analysis, correlation, and graphing/display methods.
Quarter Credit Hours: 5 | Prerequisite: MM207 and IN300

MM325M1: Discovering Data
Describe the advanced statistical tools used in data analysis.
Quarter Credit Hours: 1 | Prerequisite: MM207 and IN300

MM325M2: Data Distributions
Use advanced statistical analysis tools with large datasets to solve specific data analysis questions.
Quarter Credit Hours: 1 | Prerequisite: MM207 and IN300

MM325M3: Hypothesis Testing
Examine case studies that use advanced statistical analysis tools.
Quarter Credit Hours: 1 | Prerequisite: MM207 and IN300

MM325M4: Regression Analysis
Explain the statistics used in the analysis of "big data."
Quarter Credit Hours: 1 | Prerequisite: MM207 and IN300

MM325M5: Model Building
Devise techniques to statistically mine text.
Quarter Credit Hours: 1 | Prerequisite: MM207 and IN300