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

MM165: Advanced Algebra and Geometry
This course includes the study of algebraic functions with a graphical and applied perspective on linear, quadratic, polynomial, rational, exponential, and logarithmic functions along with a brief geometric review.
Quarter Credit Hours: 5 | Prerequisite: MM212

MM207: 🌐 Statistics
This course serves as an introduction to collecting, organizing and summarizing, and analyzing data using statistical software. Topics include basic terminology, measurement, sampling 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: None

MM207M1: Examining Data
Examine data appropriately.
Quarter Credit Hours: 1 | Prerequisite: None

MM207M2: Graphical Methods
Explain data using graphical methods.
Quarter Credit Hours: 1 | Prerequisite: None

MM207M3: Variable Relationships
Determine the relationship between two variables.
Quarter Credit Hours: 1 | Prerequisite: None

MM207M4: Applying Probability
Apply probability to real-world problems.
Quarter Credit Hours: 1 | Prerequisite: None

MM207M5: Confidence Intervals
Calculate confidence intervals to estimate population parameters.
Quarter Credit Hours: 1 | Prerequisite: None

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 higher

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

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

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

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

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

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

PURDUE GLOBAL™

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 with an emphasis on real-world applications. Topics include vector operations, matrices, spaces and subspaces, eigenvalues and eigenvectors, and inner products and orthogonality. 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 and MM250

MM265: Trigonometry
This course provides an opportunity to explore trigonometric functions, graphs of trigonometric functions, trigonometric identities, inverse trigonometric functions, right and oblique triangles, polar coordinates, complex numbers, and vectors.
Quarter Credit Hours: 5 | Prerequisite: MM165

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 or MM255

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 or MM255

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 or MM255

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 or MM255

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 or MM255

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 or MM255

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 or MM255

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

MM330: Probability With Business Applications
This course is designed to allow you to further develop skills in working with discrete and continuous probability distributions. You will have opportunities to work with software applications as applicable to assess practical business applications. Topics in the course may include but are not limited to discrete probability distributions, continuous probability distributions, counting techniques, and conditional probability as related to business applications.
Quarter Credit Hours: 5 | Prerequisite: MM305

MM340: Decision Modeling
This course will provide you with an opportunity to develop decision modeling skills that can be applied to data-informed practice. You will use manual or software-supported calculations based on real-world business applications. Topics in the course may include linear programming, data structures, and mathematical modeling as each relates to business applications.
Quarter Credit Hours: 5 | Prerequisite: MM330

MM341: Decision Management
In this course, you will further explore the decision-making process through the lens of modeling techniques. You will be given opportunities to develop management plans that are applicable to a range of business and industry applications. Topics in the course may include but are not limited to, capacity and constraint management, project management, forecasting, and managing operations.
Quarter Credit Hours: 5 | Prerequisite: MM340

MM365: Calculus I
This course will explore the topics of limits and continuity, derivatives, differentiation rules, implicit differentiation, applications of derivatives, and integrals.
Quarter Credit Hours: 5 | Prerequisite: MM265