MATHEMATICS (MA)

MA 116 Intermediate Algebra - 3 Hours
The real number system, linear and quadratic equations, exponents, radicals, complex numbers, graphing, functions, determinants, and inequalities. May not be applied toward general education requirement. Offered fall semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 117 Mathematics in the Modern World - 3 Hours
This is a general-education course designed especially for non-science majors. The course will further develop the quantitative skills and reasoning ability of such students. It will serve as an introduction to some of the great ideas and relevant applications found within the discipline of mathematics. Includes problem-solving strategies, functions and their graphs, probability, statistics and the mathematics of finance. Additional topics may include Fibonacci numbers, cryptography, infinity, fractals, chaos, tiling, knots, voting theory, game theory, and fairness. This course cannot be taken as a prerequisite for MA 121. Prerequisites: high school Algebra II course and minimum ACT Math score of 17 (or minimum SAT Math score of 400); or MA 116. Offered spring semester for Deerfield traditional undergraduate; other modes as scheduled. Delivery mode: Deerfield traditional undergraduate, online, and Waupun Initiative.

MA 119 College Algebra - 3 Hours
This course deals with concepts related to algebra, equations and inequalities, functions and graphs, systems of equations, and exponential and logarithmic functions as applied to practical life problems. Offered on demand for Florida undergraduate. Delivery mode: Florida undergraduate.

MA 120 College Algebra and Trigonometry - 4 Hours
Inequalities, linear and quadratic functions; polynomials; complex numbers; trigonometric, exponential, and logarithmic functions. Prerequisites: MA 116; or high school Algebra II course and minimum ACT Math score of 17 (or minimum SAT Math score of 400). Offered fall semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 121 Calculus and Analytic Geometry I - 4 Hours
Includes functions and graphs, derivatives and their applications, derivatives of trigonometric functions, integration. Prerequisite: MA 120, or high school Precalculus and minimum ACT Mathematics score of 22 (or minimum SAT Math score of 520). Computer fee. Offered spring semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 122 Calculus and Analytic Geometry II - 4 Hours
Includes applications of integration, derivatives and integrals of exponential and logarithmic functions, techniques of integration, parametric equations, polar coordinates, infinite series. Computer fee. Prerequisite: MA 121. Offered fall semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 200 Mathematical Concepts - 4 Hours
This course is designed especially for elementary education majors. Content includes all concepts normally emphasized in the contemporary elementary school. Special concern is given to the introduction and development of the operations on the set of whole numbers by using appropriate teaching methods. Delivery mode: Florida non-traditional undergraduate.

MA 204 Mathematics for Elementary Educators - 3 Hours
This course is designed especially for elementary education majors. Content includes All concepts normally emphasized in the contemporary elementary school. Special attention is given to the introduction and development of the operations on the set of whole numbers by using appropriate teaching methods. Credit obtained in this course is not applicable toward meeting the general education Math requirement of the college. Delivery mode: Florida non-traditional undergraduate.

MA 221 Calculus and Analytic Geometry III - 4 Hours
Includes three dimensional analytic geometry, vectors, partial derivatives, functions of several variables, multiple integrals, vector calculus. Computer fee. Prerequisite: MA 122. Offered spring semester in even-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 280X Introductory Statistics - 3 Hours
An examination of both descriptive and inferential statistics. Specific topics include the scientific method, data analysis and production, measures of central tendency and variability, correlation and regression, random sampling and probability, nonparametric inferential tests, and parametric inferential tests including one-way analysis of variance. Credit obtained in this course does not fulfill the major requirements in psychology (for Deerfield traditional and Florida undergraduates) or business (for Deerfield traditional undergraduates) or the minor requirement in sociology. (Florida undergraduate business majors take PSY 280X as part of the major.) Offered each semester for Deerfield traditional undergraduate; other modes as scheduled. Computer fee. Delivery mode: Deerfield traditional undergraduate and Florida undergraduate.

MA 285X Statistics - 4 Hours
An examination of both descriptive and inferential statistics. Specific topics include the scientific method, data analysis and production, measures of central tendency and variability, correlation and regression, random sampling and probability, nonparametric inferential tests, and parametric inferential tests including one-way analysis of variance. Specific instruction and computer experience in the use of SPSS is provided. Offered each semester for Deerfield traditional undergraduate; other modes as scheduled. Computer fee. Cross-listed with BIO 285X, PSY 285X, SOC 285X. Delivery mode: Deerfield traditional undergraduate, Florida undergraduate, online.

MA 321 Mathematical Statistics I - 4 Hours
Probability theory, random variables, discrete distributions, continuous distributions, sampling theory, correlation and regression, and hypothesis testing. Prerequisite: MA 121. Offered fall semester in even-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 324 Mathematical Statistics II - 1 Hour
Hypergeometric distribution, negative binomial distribution, gamma and chi-square distributions, multivariable distributions, marginal and conditional distributions, order statistics. Prerequisite: MA 321 or concurrent registration in MA 321. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 331 Linear Algebra - 3 Hours
Systems of linear equations, matrices, determinants, vector spaces, linear transformations, change of basis, eigenvalues, eigenvectors, and discrete dynamical systems. Prerequisite: MA 120. Offered spring semester in even-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 335 Differential Equations - 3 Hours
Linear differential systems, nonlinear first-order equations, series methods, and numerical algorithms. Prerequisite: MA 221 and MA 331. Offered fall semester in even-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 340 History of Mathematics - 4 Hours
Includes Greek mathematics, non-Western mathematics, the development of calculus, mathematics of the 18th and 19th centuries, non-Euclidean geometry, and set theory. Prerequisite: MA 121 or consent of instructor. Offered spring semester in odd-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 350 Topics In Mathematics - 3-4 Hours
Selected topics in Mathematics announced. May be repeated for credit with different topic. Prerequisites: MA 121, MA 122. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 360 Theory of Interest - 3 Hours
This course covers the material on the Society of Actuaries/Casualty Actuarial Society Exam FM (Financial Mathematics Exam). Topics include time value of money, nominal and effective rates of interest, discount rates, force of interest, annuities, amortization of loans, sinking funds, bonds, duration, immunization, interest rate swaps, and determinants of interest rates. Prerequisite: MA 122. Offered fall semester in odd-numbered years. Delivery mode: Deerfield traditional undergraduate.

MA 390 Actuarial Examination Preparation - 1 Hour
Prepares students to take a particular actuarial exam. Students do problems from practice actuarial exams and study guides. Prerequisite: consent of instructor. May be repeated for credit. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 411 Abstract Algebra - 3 Hours
Groups, rings, fields, and Galois theory. Prerequisite: MA 121. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 412 Geometry - 3 Hours
Euclidean geometry, axiomatic systems, neutral geometry, non-Euclidean geometry, higher-dimensional geometry, transformations, tessellations. Prerequisite: MA 122. Offered fall semester in odd-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 413 Real Analysis - 3 Hours
The real number system, limits continuity and differentiability of real functions, the Riemann integral. Prerequisite: MA 122. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 420 Number Theory - 3 Hours
Divisibility, primes, congruences, elementary group theory, diophantine equations, applications to cryptography, continued fractions, and algebraic numbers. Prerequisite: MA 120 or MA 121. This course fulfills the IDS 499X Integrative Thought Capstone requirement for students in the Mathematics major for Deerfield traditional undergraduate. Offered fall semester in odd-numbered years. Delivery mode: Deerfield traditional undergraduate.

MA 430 Graph Theory - 3 Hours
Graphs, directed graphs, trees, circuits, Eulerian graphs, Hamiltonian graphs, decomposition and colorization of graphs. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 445 Internship - 1-6 Hours
The opportunity to work in a business or professional organization to analyze and interpret data, to develop concepts, and to engage in problem solving. Prerequisites: Instructor approval and permission of the Dean of the College. Delivery mode: Deerfield traditional undergraduate.

MA 450 Independent Study - 1-4 Hours
Research and specialization studies designed to meet the needs of individual students. Prerequisite: consent of instructor. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

MA 498 Professional Experience - 0-1 Hours
A supervised experience in one or more professional environment(s) which demonstrates the student's ability to relate knowledge and skills developed in the major to practical tasks in the workplace, graduate school, or professional school. Requires at least 45 clock hours of prepared, supervised, and evaluated experience which demonstrates practical application of major-related knowledge and skills. The professional experience must have prior approval by the department. Offered each semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.