

(MS) MATHEMATICS

Courses

MS 092. Fundamentals of Mathematics. 4 Hours.

This course reviews fundamental principles and applications of arithmetic and serves as preparation for MS 093 Core Arithmetic and Algebra. The course does not satisfy degree requirements. Five contact hours per week. A minimum grade of C is required. Four credit hours.

MS 093. Core Arithmetic and Algebra. 4 Hours.

Core Arithmetic and Algebra provides a review of necessary concepts and skills required for success in general education college mathematics, and serves as preparation for MS 141 Contemporary College Algebra. The course does not count toward the degree. A minimum grade of C is required. Students are registered based on the results of their Initial Math Assessment.

MS 102. Arithmetic and Algebra. 4 Hours.

Arithmetic and Algebra develops students' competency and confidence in foundational mathematics, preparing them for MS 141: Contemporary College Algebra. The course begins with number concepts introduced through real-world, intuitive contexts and moves toward formal principles. Topics include operations with negative numbers, fractions, and the order of operations. Students learn to determine and carry out the appropriate calculations to solve real-world problems, with calculator support. Algebraic concepts grow directly from arithmetic foundations. Topics include percentages from an algebraic perspective, simplifying expressions, solving equations, interpreting word problems, and an introduction to graphing. The course follows a mastery-based structure in which students must demonstrate proficiency in each key concept before progressing. Students develop journals from lesson videos and online assignments; these receive instructor feedback and serve as study materials. A minimum grade of C is required. Students are registered based on the results of their Initial Math Assessment.

MS 113. Principles of College Algebra. 3 Hours.

This course relates college algebra to everyday life. It starts with number systems, exponents and scientific notation, radicals, polynomials, and factoring. The course continues with equations including coordinate systems, linear equations of one variable, and modeling using linear equations. It finishes with quadratic equations and their real-world applications. Functions and fundamental concepts include domain, range, rates of change, graphs, composition of functions, transformations of functions, and finally inverse functions. The course concludes with a deeper dive into linear, quadratic, exponential, and logarithmic functions.

MS 131. Logic and Problem Solving. 3 Hours.

This course is designed to develop logical thought processes and to lead to critical forms of reading and thinking. Topics include statement forms and types of statement connectives. Techniques of problem solving are taught.

MS 132. Probability and Statistics. 3 Hours.

This course is an introduction to the theory and application of probability and statistical analysis. Both descriptive and inferential techniques will be studied, with emphasis placed on statistical sampling and hypothesis testing. Also considered will be linear regression, contingency table analysis, and decision-making under uncertainty. A prerequisite of MS 141 or higher or equivalent by the Initial Math Assessment is required. Prerequisite(s): MS 141 or MS 180 or MS 181 or MS 182.

MS 141. Contemporary College Algebra. 4 Hours.

Contemporary College Algebra provides students a college level academic experience that emphasizes the use of algebra and functions in problem solving and modeling, provides a foundation in quantitative literacy, supplies the algebra and other mathematics needed in partner disciplines, and helps meet quantitative needs in, and outside of, academia. Students address problems presented as real world situations by creating and interpreting mathematical models. Solutions to the problems are formulated, validated, and analyzed using mental, paper and pencil, algebraic, and technology-based techniques as appropriate. Four credit hours. A prerequisite of a C or better of MS 093 or equivalent by the Initial Math Assessment is required.

MS 160. Mathematics for Elementary Teachers. 3 Hours.

Mathematics for Elementary Teachers focuses on the building blocks of mathematics while integrating the Common Core Practice Standards. Students are expected to build upon prior mathematical understanding, as they learn new ways to demonstrate understanding of fluency in mathematics and the different algorithms used to teach a conceptual understanding of mathematics to elementary school students. It is of particular importance that teachers of mathematics are able to translate between multiple algorithms and varying perspectives on the same questions in mathematics. Among other topics, students will explore sets, place value, mental math, estimation, fractions, geometry, logic and basic computation. Prerequisite(s): MS 132.

MS 180. Precalculus with Trigonometry. 4 Hours.

This course is intended to prepare students for MS 181 Calculus with Applications as well as providing instruction in trigonometry to support subsequent studies in physics, chemistry, and mathematics. Emphasis is on the analysis of elementary functions and modeling, including polynomial and rational functions, exponential and logarithmic functions, and trigonometric functions. Topics in analytic trigonometry and analytic geometry are also included. Four credit hours. A prerequisite of MS 141 or equivalent by the Initial Math Assessment is required. Prerequisite(s): MS 141 or MS 113.

MS 181. Calculus with Applications. 4 Hours.

This course provides an introduction to single variable calculus and its application. Emphasis is on conceptual understanding of the major ideas of calculus including limits as models of approximation, derivatives as models of change, and integrals as models of accumulation. Concepts are explored by combining, comparing and moving among graphical, numerical, and algebraic representations. This course is a four credit hour course. A prerequisite of MS 180 or equivalent by the Initial Math Assessment is required. Prerequisite(s): MS 180.

MS 182. Calculus II. 4 Hours.

This course is a continuation of MS181 Calculus with Applications. It prepares students for subsequent studies in mathematics, science, and business. Students engage with concepts and applications of numerical integration, applications of integration, antidifferentiation, function approximation, improper integrals, and infinite series. Emphasis is placed on concepts, complementing symbolic with graphical and numerical points of view. The course integrates technology to support pedagogy and computation. A prerequisite of MS 181 or equivalent by the Initial Math Assessment is required. Prerequisite(s): MS 181.

MS 212. Intermediate Applied Statistics. 3 Hours.

This course builds off the concepts learned in MS 132 while also serving as an introduction to a statistical programming language (e.g., SAS, SPSS, or R). Through projects, major statistical methods are introduced including various hypothesis testing procedures, regression, analysis of variance, chi-square tests, and nonparametric statistics. Prerequisite(s): MS 132.

MS 299. Topic/. 1-6 Hour.

This course is intended to provide the opportunity to offer introductory courses in mathematics that would not normally be a part of the Husson curriculum. As such the topics will depend upon the interests of students and faculty.

MS 499. Topic/. 1-3 Hour.

This course is intended to provide the opportunity to offer advanced courses in mathematics that would not normally be a part of the Husson curriculum. As such the topics will depend upon the interests of students and faculty.