

MATHEMATICS

Cascade Campus
Student Services Building (SSB) Room 300
971-722-5677 or 971-722-5454

Rock Creek Campus
Building 2, Room 244
971-722-7605 or 971-722-7606

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6149

Sylvania Campus
Science Technology Building (ST), Room 104
971-722-4149 or 971-722-4172

DESCRIPTION

Mathematics includes the study of numbers, patterns, graphs, and abstract models using analytic reasoning and systematic problem solving skills. Mathematics and mathematical reasoning are used in situations as diverse as household budgeting and space shuttle design, subjects as different as art and law, and occupations as varied as nursing and computer programming. Mathematics can be used by everyone to enhance their understanding of the world.

PCC offers pre-college math courses (numbered below 100) that focus on algebraic skills and prepare students for certificate programs, two year degree programs, and college level coursework. Math courses at PCC numbered 100 and above are equivalent and transferable to the similarly numbered courses at Oregon's public universities. All math classes at PCC are designed to challenge students to improve their analytic reasoning, problem solving, and communication skills.

COURSE DESCRIPTIONS

MTH 10B Fundamentals of Arithmetic I 2.00 Use of whole numbers to write, manipulate, interpret, and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Prerequisite: Pre-Algebra COMPASS 1-20. Audit available.

MTH 10C Fundamentals of Arithmetic I 2.00 Use of whole numbers to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Prerequisites: Pre-Algebra COMPASS score 1-20. Audit available.

MTH 11B Fundamentals of Arithmetic II 2.00 Use of fractions and decimals to write, manipulate, interpret and solve applications and formulas. Concepts will be introduced numerically, graphically, symbolically and in oral and written form. Prerequisites: Pre-Algebra COMPASS score 1-20 or successful completion of MTH 10. Audit available.

MTH 11C Fundamentals of Arithmetic II 2.00 Use fractions and decimals to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Prerequisite: Pre-Algebra COMPASS score 1-20 or successful completion of MTH 10 with a "C" or better. Audit available.

MTH 15 Conquering Math Anxiety 1.00 How to manage anxiety and stress about mathematics. Personal development gives instruction in methods for dealing with excessive math anxiety. Relaxation techniques are demonstrated. Includes study skills information concerning the best ways to study and to change the perception of math anxiety. Audit available.

MTH 20 Basic Math (Arithmetic) 4.00 Use fractions, decimals, percents, integer arithmetic, measurements, and geometric properties to write, manipulate, interpret and solve application and formula problems. Introduce concepts of basic statistics, charts and graphs. Concepts will be introduced numerically, graphically, and symbolically, and in oral and written form. A scientific calculator is required. The TI-30X II is recommended. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 20B Basic Math 4.00 Use fractions, decimals, percents, integer arithmetic, measurements, and geometric properties to write, manipulate, interpret and solve application and formula problems. Introduces concepts of basic statistics, charts and graphs. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 21C Percentage and Statistics 1.00 Use fractions, decimals, and percents to write, manipulate, interpret and solve applications and formulas. Introduce concepts of basic statistics, charts and graphs. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 22 Measurements 1.00 Use both English and Metric measurements, conversions, temperature, and to write, manipulate, interpret, and solve applications and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisite: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 22C Measurements 1.00 Use both English and Metric measurements, conversions, temperature, and to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisite: ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 23C Introduction to Geometry 1.00 Use geometric properties to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisite: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 24C Pre-Algebra 1.00 Use integer arithmetic to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 25C Fractions 1.00 Use fractions to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 26C Decimals 1.00 Use decimals, to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 27C Applications in Mathematics 1.00 Use fractions, decimals, percents, integer arithmetic, and measurements to write, manipulate, interpret and solve applications and formulas. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 30 Business Mathematics 4.00 Application of arithmetic to a variety of problems found in the business field, including simple and compound interest, annuities, payroll preparation, pricing, invoice preparation, trade discounts, taxes, and depreciation. Scientific calculator required. Prerequisites: MTH 20; (RD 80 or ESOL 250). Audit available.

MTH 60 Introductory Algebra - First Term 4.00 Introduction to algebraic concepts and processes with a focus on linear equations and inequalities in one and two variables. Applications, graphs, functions, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Prerequisites: MTH 20 and RD 80 (or ESOL 250). Audit available.

MTH 61 Introductory Algebra - Part I 3.00 Introduces algebraic concepts and processes with a focus on linear equations and inequalities in one variable. Applications, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Must take both MTH 61 and MTH 62 to satisfy MTH 60 requirements. Prerequisite: MTH 20 AND (RD 80 or ESOL 250) Audit available.

MTH 62 Introductory Algebra - Part II 3.00 Introduces algebraic concepts and processes with a focus on linear equations in two variables, functions, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Must take both MTH 61 and MTH 62 to satisfy MTH 60 requirements. Must take both MTH 62 and MTH 63 to satisfy MTH 65 requirements. Prerequisite: (MTH 60 or MTH 61) AND (RD 80 or ESOL 250). Audit available.

MTH 63 Introductory Algebra - Part III 3.00 Introduces algebraic concepts and processes with a focus on functions, polynomials, and quadratic equations. Application graphs, functions, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Must take both MTH 62 and MTH 63 to satisfy MTH 65 requirements. Prerequisite: (MTH 60 or MTH 62) AND (RD 80 or ESOL 250). Audit available.

MTH 65 Introductory Algebra - Second Term 4.00 Introduces algebraic concepts and processes with a focus on functions, linear systems, polynomials, and quadratic equations. Applications, graphs, functions, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Prerequisites: (MTH 60 or MTH 62) and (RD 80 or ESOL 250) Audit available.

MTH 70 Review of Introductory Algebra 4.00 Review of algebraic concepts and processes with a focus on linear equations and inequalities in one and two variables, functions, linear systems, properties of exponents, polynomials, and quadratic equations. Applications, graphs, functions, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Prerequisites: (MTH 63 or MTH 65) and (RD 80 or ESOL 250) Audit available.

MTH 75 Introduction to Formal Geometry 4.00 Topics include: inductive and deductive reasoning, geometric constructions, line and angle properties, triangle properties, polygon properties, circles, transformations, area, volume, Pythagorean Theorem, similarity, and geometric proofs. Results communicated in oral and written form. Prerequisite: MTH 60. Audit available.

MTH 91 Intermediate Algebra Part I 2.00 Functions are explored graphically and symbolically with an emphasis on function notation. Functions, equations and graphs involving linear rational, and absolute value expressions are investigated. Technology is integrated throughout. A graphing calculator is required: TI 89/92 plus or Voyage 200 recommended. Must take both MTH 91 and MTH 92 to satisfy MTH 95 requirements. Prerequisite: MTH 63, MTH 65 or MTH 70 and placement into WR 115. Audit available.

MTH 92 Intermediated Algebra Part II 2.00 Functions are explored graphically and symbolically with an emphasis on function notation. Functions, equations and graphs involving quadratic, rational, and radical expressions are investigated. Technology is integrated throughout. A graphing calculator is required: TI 89/92 plus or Voyage 200 recommended. Must take both MTH 91 and MTH 92 to satisfy MTH 95 requirements. Prerequisites: MTH 91 and placement into WR 115. Audit available.

MTH 93 Intro to the TI Graphics Calculator 1.00 Explores the power of your programmable graphing calculator for use at school and home. The TI-89, TI 92+, or Voyage 200 graphing calculator is required. Audit available.

MTH 95 Intermediate Algebra 4.00 Explores functions graphically and symbolically with an emphasis on function notation. Investigate functions, equations, and graphs involving quadratic, rational, radical, and absolute value expressions. Technology is integrated throughout. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 63, MTH 65 or MTH 70 and placement into WR 115. Audit available.

MTH 105 Explorations in Mathematics 4.00 Students engage in the discovery and exploration of selected non-traditional topics in mathematics. Possible topics include mathematics of social choice, geometry, statistics, probability, and discrete mathematics. Technology will be used where appropriate. Students communicate results in oral and written form. Prerequisites: WR 115, RD 115 and MTH 95 or equivalent placement test scores. Audit available.

MTH 111 College Algebra 5.00 Explores relations and functions graphically, numerically, symbolically, and verbally. Examines exponential, logarithmic, polynomial, and rational functions. Investigates applications from a variety of perspectives. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisite: MTH 95, RD 115, and WR 115, or equivalent placement. Audit available.

MTH 111H College Algebra: Honors 5.00 An honors version of College Algebra. Explores relations and functions graphically, numerically, symbolically, and verbally. Examines exponential, logarithmic, polynomial, and rational functions. Investigates applications from a variety of perspectives. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisite: MTH 95, RD 115, and WR 115, or equivalent placement."

MTH 112 Elementary Functions 5.00 Investigates trigonometric functions, equations and identities. Examines right and oblique triangles, vectors, polar coordinates, parametric equations, and complex numbers. Explores topics graphically, numerically, symbolically, and verbally. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisite: (MTH 111 or MTH 111B or MTH 111C), RD 115, and WR 115, or equivalent placement. Audit available.

MTH 211 Foundations of Elementary Math I 4.00 Surveys mathematical topics for those interested in the presentation of mathematics at the K-9 levels. Topics emphasized are problem solving, patterns, sequences, set theory, logic, numeration systems, number bases, arithmetic operations, and number theory. Various manipulative and problem solving strategies are used. Prerequisite: MTH 95 or higher, and WR 115 and RD 115 or equivalent placement test scores. Audit available.

MTH 212 Foundations of Elementary Math II 4.00 Surveys mathematical topics for those interested in the presentation of mathematics at the K-9 levels. Various manipulatives and problem solving approaches are used to explore rational numbers (fractions, decimals, percents), integers, the set of irrational numbers, the set of real numbers, and simple probability and statistics. Prerequisite: MTH 211 and its prerequisite requirements. Audit available.

MTH 213 Foundations of Elementary Math III 4.00 Surveys mathematical topics for those interested in the presentation of mathematics at the K-9 levels. Various manipulatives and problem solving approaches are used to explore informal geometry, transformational geometry, and measurement systems. Prerequisite: MTH 211 and its prerequisite requirements. Audit available.

MTH 241 Calculus for Management, Life and Social Science 4.00

Includes limits, continuity, derivatives, and integrals. Investigates applications from science, business, and social science perspectives. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisite: (MTH 111 or MTH 111B or MTH 111C) and their prerequisite requirements. Audit available.

MTH 243 Statistics I 4.00 Topics include displaying data with graphs, numerical descriptions of data, producing data, elementary probability, probability distributions, and introduction to confidence intervals. Applications are investigated from science, business, and social science perspectives. TI graphing calculator with advanced statistical programs and/or computer software, see instructor. Prerequisites: (MTH 111 or MTH 111B or 111C) and their prerequisite requirements. Audit available.

MTH 244 Statistics II 4.00 Topics include confidence interval estimation; tests of significance including z-tests, t-tests, ANOVA, and chi-square; and inference for linear regression. Applications are investigated from science, business, and social science perspectives. TI graphing calculator with advanced statistical programs required and/or computer software, see instructor. Prerequisites: MTH 243 and its prerequisite requirements. Audit available.

MTH 251 Calculus I 4.00 Includes limits, continuity, derivatives and applications of derivatives. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 112 or CMET 131; and their prerequisite requirements. Student must also register for a MTH 251 lab section. Audit available.

MTH 252 Calculus II 5.00 Includes antiderivatives, the definite integral, topics of integration, improper integrals, and applications of integration. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 251 and its prerequisite requirements. Audit available.

MTH 253 Calculus III 5.00 Includes infinite sequences and series (emphasis on Taylor series), an introduction to differential equations, and vectors in three space. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 252 and its prerequisite requirements. Audit available.

MTH 254 Vector Calculus I 5.00 Includes multivariate and vector-valued functions from a graphical, numerical, and symbolic perspective. Applies integration and differentiation of both types of functions to solve real world problems. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 253 and its prerequisite requirements. Audit available.

MTH 256 Differential Equations 5.00 Includes a variety of differential equations and their solutions, with emphasis on applied problems in engineering and physics. Differential equations software will be used. Students communicate results in oral and written form. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 253 and its prerequisite requirements. Audit Available.

MTH 261 Applied Linear Algebra I 5.00 Surveys linear algebra with some applications. Includes linear systems, vectors, and vector spaces, including eigenspaces. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 253 and its prerequisite requirements. Audit available.