MATH COURSE DESCRIPTIONS

Math 10C (5 credits)
(MINIMUM REQUIREMENT: 50% in Math 9)

Mathematics 10C students determine the surface area and volume of 3-D objects and use trigonometric ratios to solve problems involving right triangles. They simplify expressions that involve powers with integral and rational exponents and simplify or factor polynomial expressions. At this level, students also analyze linear relations, solve systems of linear equations and solve problems related to both of these sets of skills.

Math 10-3 (5 credits)
Mathematics 10-3 students solve linear and area measurement problems of 2-D shapes and 3-D objects using SI and imperial units. They use spatial reasoning to solve puzzles; solve problems involving right triangles and angles; solve unit pricing, currency exchange and income problems; and manipulate formulas to solve problems. They also use scale factors and parallel and perpendicular lines to solve problems.

Math 10-4 (5 credits)
Knowledge and Employability Mathematics 10-4 students solve everyday problems involving numbers and percents; explore patterns, variables, expressions and equations to solve problems; and solve problems involving estimation, measurement and comparison of objects. Students use visualization and symmetry to explore objects, shapes, patterns and designs; develop and apply a plan to collect, display and analyze data and information; and connect mathematical ideas to their everyday lives. Students who have experienced challenges or difficulty with their skills will be provided with additional strategies for success in the Knowledge and Employability -4 course sequence.

Math 20-1 (5 credits)
(RECOMMENDATION FOR SUCCESS – 65% in the previous course)

Mathematics 20-1 students investigate arithmetic and geometric patterns and use the sine and cosine laws to solve problems involving triangles. They investigate the properties of radicals and rational expressions. Mathematics 20-1 students also analyze the characteristics of absolute value functions and quadratic functions, solve quadratic equations and systems of equations in various ways, and analyze the relationship between a function and its reciprocal.

Math 20-2 (5 credits)
(MIMIMUM REQUIREMENT: 50% in Math 10C)

Mathematics 20-2 students use proportional reasoning to solve real-life problems involving 2-D shapes and 3-D objects. They use the properties of angles and triangles, including the sine and cosine laws, to solve problems; use reasoning to prove conjectures; use spatial reasoning to solve puzzles; and solve problems that involve radicals. They interpret statistical data, solve problems involving quadratics and research and present a mathematical topic of their choice.

Math 20-3 (5 credits)
Mathematics 20-3 students solve surface area, volume and capacity problems. They use primary trigonometry to solve problems involving two or three right triangles, and model and draw 3-D objects

and their views to scale. They use numerical reasoning to solve puzzles; create and analyze personal budgets; use proportional reasoning, unit analysis and manipulation of formulas to solve problems; and create and interpret graphs. Students use their understanding of slope and rate of change to interpret graphs.

Math 20-4 (5 credits)
Knowledge and Employability Mathematics 20-4 students solve everyday problems involving numbers and percents, and decide if the processes used are reasonable. They explore patterns, variables and expressions, and interpret variables, equations and relationships, to solve problems in practical situations. They estimate, measure and compare objects; read and interpret scale drawings and maps; develop and apply a plan to collect, display and analyze information; and use probability and statistics to make predictions and decisions. In most of their studies, Mathematics 20-4 students connect mathematical ideas to their everyday lives. Students who have experienced challenges or difficulty with their skills will be provided with additional strategies for success in the Knowledge and Employability - 4 course sequence.

Math 30-1 (5 credits)
(RECOMMENDATION FOR SUCCESS – 65% in the previous course)

Mathematics 30-1 students investigate the properties of logarithms; study the characteristics and transformations of trigonometric, polynomial, exponential and logarithmic functions by sketching and analyzing their graphs; and solve equations and problems related to these functions. Students also use basic counting principles to determine the number of permutations or combinations of the elements of a set to solve problems.

Math 30-2 (5 credits)
Mathematics 30-2 students use numerical and logical reasoning to solve puzzles, and solve real-life problems about the probability of events occurring. They solve problems algebraically involving rational equations; investigate exponential, logarithmic, polynomial and sinusoidal functions; and research and present a mathematical topic of their choice.

Math 30-3 (5 credits)
Mathematics 30-3 students investigate the limitations of measuring instruments, use trigonometry to solve problems involving triangles, and describe and illustrate properties of polygons. They investigate slides, rotations, flips and size changes of 2-D shapes or 3-D objects; they use logical reasoning to solve puzzles; and they solve various other problems involving financial situations, linear relations and probability.

Math 31 (5 credits)
(RECOMMENDATION FOR SUCCESS – 65% in Math 30-1)

Mathematics 31 students determine the limit of a function at finite or infinite values of the independent variable. They use derivative theorems to determine the derivative of a function, either explicitly or implicitly, and use derivatives to sketch graphs of functions and solve optimization problems. They also investigate the relationship between differentiation and integration.