MATHEMATICS/CALCULUS & PRE-CALCULUS

MAC 1105, College Algebra College Algebra
3 hrs., 3 crs.,
(Offered fall, spring, and summer). Prerequisite: Math placement test or minimum grade of "C" in MAT1033. In this course, students will develop problem-solving skills, critical thinking, computational proficiency, and contextual fluency through the study of equations, functions, and their graphs. Emphasis will be placed on quadratic equations, exponential, and logarithmic functions. Topics will include solving equations and inequalities, definition and properties of a function, domain and range, transformations of graphs, operations on functions, composite and inverse functions, basic polynomial and rational functions, exponential and logarithmic functions, and applications. A graphing calculator is required. The TI-83/84 are the only allowable calculators for test days. If a student wishes to use any other calculator, they must see their instructor in advance for approval.

MAC 1105H, Honors College Algebra Honors College Algebra
3 hrs., 3 crs.,
(Offered fall, spring, and summer). Prerequisite: Math placement test or minimum grade of "C" in MAT1033. In this course, students will develop problem-solving skills, critical thinking, computational proficiency, and contextual fluency through the study of equations, functions, and their graphs. Emphasis will be placed on quadratic equations, exponential, and logarithmic functions. Topics will include solving equations and inequalities, definition and properties of a function, domain and range, transformations of graphs, operations on functions, composite and inverse functions, basic polynomial and rational functions, exponential and logarithmic functions, and applications. A graphing calculator is required. The TI-83/84 are the only allowable calculators for test days. If a student wishes to use any other calculator, they must see their instructor in advance for approval.

MAC 1114, Plane Trigonometry Plane Trigonometry
3 hrs., 3 crs.,
(Offered fall, spring, and summer). Prerequisite: Math placement test or minimum grade of "C" in MAC1105. A graphing calculator is required. The TI-83/84 are the only allowable calculators for test days. If a student wishes to use any other calculator they must see their instructor in advance for approval. Topics included are properties and graphs of trigonometric functions, properties and graphs of inverse trigonometric functions, trigonometric identities, conditional trigonometric equations, solutions of triangles, vector algebra, parametric equations, polar coordinates, and applications.

MAC 1114H, Honors Plane Trigonometry Honors Plane Trigonometry
3 hrs., 3 crs.,
(Offered fall, spring, and summer). Prerequisite: Math placement test or minimum grade of "C" in MAC1105. A graphing calculator is required. The TI-83/84 are the only allowable calculators for test days. If a student wishes to use any other calculator they must see their instructor in advance for approval. Topics included are properties and graphs of trigonometric functions, properties and graphs of inverse trigonometric functions, trigonometric identities, conditional trigonometric equations, solutions of triangles, vector algebra, parametric equations, polar coordinates, and applications.

MAC 1140, Precalculus Algebra Precalculus Algebra
3 hrs., 3 crs.,
(Offered fall, spring, and summer). Prerequisite: Math placement test or minimum grade of "C" in MAC1105. A graphing calculator is required. The TI-83/84 are the only allowable calculators for test days. If a student wishes to use any other calculator they must see their instructor in advance for approval. Topics included are properties and graphs of polynomial and rational functions, polynomial and rational inequalities, properties and graphs of exponential and logarithmic functions, piecewise defined functions, conic sections, matrices and determinants, sequences and series, mathematical induction, binomial theorem, and applications.

MAC 1140H, Honors Precalculus Algebra Honors Precalculus Algebra
3 hrs., 3 crs.,
(Offered fall, spring, and summer). Prerequisite: Math placement test or minimum grade of "C" in MAC1105. A graphing calculator is required. The TI-83/84 are the only allowable calculators for test days. If a student wishes to use any other calculator they must see their instructor in advance for approval. Topics included are properties and graphs of polynomial and rational functions, polynomial and rational inequalities, properties and graphs of exponential and logarithmic functions, piecewise defined functions, conic sections, matrices and determinants, sequences and series, mathematical induction, binomial theorem, and applications. NOTE: While MAC1114, Plane Trigonometry is not a prerequisite for MAC1140, Pre-Calculus Algebra, the math faculty at GCSC strongly suggest that you take MAC1140, Pre-Calculus before taking MAC1114, Plane Trigonometry.

MAC 2233, Calculus for Business and Social Science I Calculus for Business and Social Science I
3 hrs., 3 crs.,
(Offered fall, spring, and summer). Prerequisite: Minimum grade of "C" in MAC1105. A graphing calculator is required. The TI-83/84 are the only allowable calculators for test days. If a student wishes to use any other calculator they must see their instructor in advance for approval. Topics included are a review of algebraic preliminaries, rates of change and optimization methods, integration, and applications to business and social sciences.

MAC 2311, Calculus with Analytic Geometry I Calculus with Analytic Geometry I
4 hrs., 4 crs.,
(Offered fall, spring, and summer). Prerequisite: Math placement test or minimum grade of "C" in MAC1140 and MAC1114. Placing into MAC2311 by only placement test scores requires permission of the mathematics division chair. To receive permission, the student who has not successfully completed MAC1114 (Plane Trigonometry) must verify successful completion (?C? or higher) of a trigonometry course at the high school level or higher. A graphing calculator is required. The TI-83/84 are the only allowable calculators for test days. If a student wishes to use any other calculator they must see their instructor in advance for approval. In this course, students will develop problem solving skills, critical thinking, computational proficiency, and contextual fluency through the study of limits, derivatives, and definite and indefinite integrals of functions of one variable, including algebraic, exponential, logarithmic, and trigonometric functions, and applications. Topics will include limits, continuity, differentiation and rates of change, optimization, curve sketching, and introduction to integration and area. NOTE: For the Calculus sequence, the math faculty at GCSC strongly advise that students complete the entire sequence at a single institution. Course content may vary depending on the institutions. Completing the sequence assures that no content is lost in transfer.

MAC 2311H, Honors Calculus With Analytic Geometry I Honors Calculus With Analytic Geometry I
4 hrs., 4 crs.,
(Offered fall, spring, and summer). Prerequisite: Math placement test or minimum grade of "C" in MAC1140 and MAC1114. Placing into MAC2311 by only placement test scores requires permission of the mathematics division chair. To receive permission, the student who has not successfully completed MAC1114 (Plane Trigonometry) must verify successful completion (?C? or higher) of a trigonometry course at the high school level or higher. A graphing calculator is required. The TI-83/84 are the only allowable calculators for test days. If a student wishes to use any other calculator they must see their instructor in advance for approval. In this course, students will develop problem solving skills, critical thinking, computational proficiency, and contextual fluency through the study of limits, derivatives, and definite and indefinite integrals of functions of one variable, including algebraic, exponential, logarithmic, and trigonometric functions, and applications. Topics will include limits, continuity, differentiation and rates of change, optimization, curve sketching, and introduction to integration and area. NOTE: For the Calculus sequence, the math faculty at GCSC strongly advise that students complete the entire sequence at a single institution. Course content may vary depending on the institutions. Completing the sequence assures that no content is lost in transfer.

MAC 2312, Calculus with Analytic Geometry II Calculus with Analytic Geometry II
4 hrs., 4 crs.,
(Offered fall and spring). Prerequisite: Minimum grade of "C" in MAC2311. A graphing calculator is required. The TI-83/84 are the only allowable calculators for test days. If a student wishes to use any other calculator they must see their instructor in advance for approval. Topics included are applications of integrals, principles of integral evaluation, L'Hospital's rule, parametric equations, improper integrals, mathematical modeling with differential equations, infinite series, and topics in analytical geometry.

MAC 2313, Calculus with Analytic Geometry III Calculus with Analytic Geometry III
4 hrs., 4 crs.,
(Offered fall and spring). Prerequisite: Minimum grade of "C" in MAC2312. A graphing calculator is required. The TI-83/84 are the only allowable calculators for test days. If a student wishes to use any other calculator they must see their instructor in advance for approval. Topics included are three dimensional space, vectors, vector-valued functions, partial derivatives, and multiple integrals.

MAC 2313H, Honors Calculus with Analytic Geometry III Honors Calculus with Analytic Geometry III
4 hrs., 4 crs.,
(Offered fall and spring). Prerequisite: Minimum grade of "C" in MAC2312. A graphing calculator is required. The TI-83/84 are the only allowable calculators for test days. If a student wishes to use any other calculator they must see their instructor in advance for approval. Topics included are three dimensional space, vectors, vector-valued functions, partial derivatives, and multiple integrals.

MAC 2949, COOP/Work Experience/Mathematics COOP/Work Experience/Mathematics
1 hr., 1 cr.,
1-3 crs. Cooperative Education courses may be taken toward completion of most of the Associate in Arts and Associate in Science degree programs. A maximum of six credit hours may be used in meeting the A.A. degree requirements. Prerequisite: Minimum of 2.0 GPA, meet with the co-op coordinator, and availability of co-op work experience slot. Supervised, practical work experience that seeks to combine theories and apply practical skills to projects in the student?s major field of study. Requirements include online weekly, mid-term, and end-of-term reflection assignments.