

MAC: Mathematics: Calculus and Precalculus Courses

Courses

MAC 1105 College Algebra

College of Sci and Engineering, Department of Mathematics & Statistics

3 sh (may not be repeated for credit)

Prerequisite: MAT 1033 OR 123 PERT Math OR 22 ACT Math OR 520 SAT Math OR 26 SAT15 Math Sub OR 35 ALEKS Proctored test

Provides the concepts and techniques of algebra that are needed to understand subjects such as statistics and economics which contain a considerable amount of quantitative reasoning. Is additionally a preparatory course for the study of calculus. Major topics include: the concept of functions, graphs of functions and relations, operations on functions, rational functions, exponentials and logarithms, systems of equations and inequalities, applications. Prerequisite course or appropriate score on placement test is required. Meets General Education requirement in Mathematics. Meets Gordon Rule Theoretical Mathematics Requirement.

MAC 1105C College Algebra with Lab

College of Sci and Engineering, Department of Mathematics & Statistics

4 sh (may not be repeated for credit)

Provides the concepts and techniques of algebra that are needed to understand subjects such as statistics and economics, which contain a considerable amount of quantitative reasoning. It is, additionally, a preparatory course for the study of calculus. This course reviews the material contained in intermediate algebra and covers the material in college algebra. Major topics include: the concept of functions, operations on function, rational functions, exponentials and logarithms, systems of equations and inequalities, applications. Students may not earn credit for both MAC 1105C (Intensive College Algebra) and MAC 1105 (College Algebra). Meets General Education requirement in Mathematics. Meets Gordon Rule Theoretical Mathematics Requirement.

MAC 1114 Trigonometry

College of Sci and Engineering, Department of Mathematics & Statistics

3 sh (may not be repeated for credit)

Prerequisite: MAC 1105 OR MAC 1105C OR MAC 1140 OR 520 SAT Math OR 22 ACT Math OR 123 PERT Math OR 26 SAT15 Math Sub OR 50 ALEKS Proctored test

Trigonometric functions, their properties and graphs, inverse trigonometric functions, their properties and graphs, trigonometric identities, conditional trigonometric equations; solutions of triangles, vector algebra, parametric equations, polar coordinates, applications. College Algebra or a strong high school algebra background is required. Meets General Education requirement in Mathematics. Meets Gordon Rule Theoretical Mathematics Requirement.

MAC 1140 Precalculus Algebra

College of Sci and Engineering, Department of Mathematics & Statistics

3 sh (may not be repeated for credit)

Prerequisite: MAC 1105 OR MAC 1114* OR 123 PERT Math OR 22 ACT Math OR 520 SAT Math OR 083 CPT Elemen. Algebra

Stresses the aspects of algebra that are important for the calculus sequence. Lays emphasis on graphs in the study of functions and algebraic relations. Covers polynomials; rational functions; logarithmic, exponential, and piecewise defined functions; inequalities; conic sections; matrices; sequences, and series; mathematical induction. Prerequisite course or appropriate score on placement test is required. Meets General Education requirement in Mathematics. Meets Gordon Rule Theoretical Mathematics Requirement.

MAC 1147 Precalculus with Trigonometry

College of Sci and Engineering, Department of Mathematics & Statistics

4 sh (may not be repeated for credit)

Prerequisite: MAC 1105 OR 22 ACT Math OR MAC 1105C OR 520 SAT Math OR 123 PERT Math OR 26 SAT15 Math Sub OR 50 ALEKS Proctored test

This course stresses the aspects of algebra and trigonometry that are important for the calculus sequence. The course lays emphasis on graphs in the study of functions and algebraic relations; covers polynomials, rational functions, logarithmic, exponential, and piecewise define functions; inequalities; conic sections; matrices; and sequences and series. Additionally, the course covers angles, trigonometric functions and graphs; inverse trigonometric functions and graphs; trigonometric formulas, identities and equations; solutions of triangles; and polar coordinates, equations, and graphs. Meets General Education requirement in Mathematics. Meets Gordon Rule Theoretical Mathematics Requirement.

MAC 1905 Directed Study

College of Sci and Engineering, Department of Mathematics & Statistics

1-12 sh (may be repeated indefinitely for credit)

MAC 2233 Calculus with Business Applications

College of Sci and Engineering, Department of Mathematics & Statistics

3 sh (may not be repeated for credit)

Prerequisite: MAC 1147 OR MAC 1105 OR MAC 1105C OR MAC 1140 OR 50 ALEKS Proctored test

Sets and functions; derivatives; areas under a curve; integration; exponentials and logarithms; applications of derivatives and integrals. Meets General Education requirement in Mathematics. Meets Gordon Rule Theoretical Mathematics Requirement.

MAC 2311 Analytic Geometry and Calculus I

College of Sci and Engineering, Department of Mathematics & Statistics

4 sh (may not be repeated for credit)

Prerequisite: MAC 1147 OR (MAC 1105 AND MAC 1114) OR (MAC 1114 AND MAC 1140) OR (MAC 1105C AND MAC 1114) OR 75 ALEKS Proctored test

Differential and Integral Calculus of Algebraic, Trigonometric, and Transcendental functions of single variables. Related applications. Meets General Education requirement in Mathematics. Meets Gordon Rule Theoretical Mathematics Requirement.

MAC 2312 Analytic Geometry and Calculus II

College of Sci and Engineering, Department of Mathematics & Statistics

4 sh (may not be repeated for credit)

Prerequisite: [MAC 2311](#)

Application of the Definite Integral. Hyperbolic and Inverse Trigonometric Functions. Methods of Integration. Sequences and Infinite Series. Meets General Education requirement in Mathematics. Meets Gordon Rule Theoretical Mathematics Requirement.

MAC 2313 Analytic Geometry and Calculus III

College of Sci and Engineering, Department of Mathematics & Statistics

4 sh (may not be repeated for credit)

Prerequisite: [MAC 2312](#)

Analytic Geometry and Calculus. Vectors and Vector-Valued Functions. Partial Differentiation. Multiple Integration.

MAC 2905 Directed Study

College of Sci and Engineering, Department of Mathematics & Statistics

1-12 sh (may be repeated indefinitely for credit)

MAC 3905 Directed Study

College of Sci and Engineering, Department of Mathematics & Statistics

1-12 sh (may be repeated indefinitely for credit)

MAC 3949 Cooperative Education

College of Sci and Engineering, Department of Mathematics & Statistics

1-2 sh (may be repeated for up to 4 sh of credit)

Alternating full-time or consecutive parallel terms of practical experience in the intended field. Reinforcing academic preparation; confirming educational and career goals; personal and professional development; early start in career; earnings toward self-support; improved employability. (See program description under Cooperative Education). Graded on satisfactory / unsatisfactory basis only. Permission of director of Cooperative Education is required.

MAC 4905 Directed Study

College of Sci and Engineering, Department of Mathematics & Statistics

1-12 sh (may be repeated indefinitely for credit)

* This course may be taken prior to or during the same term.