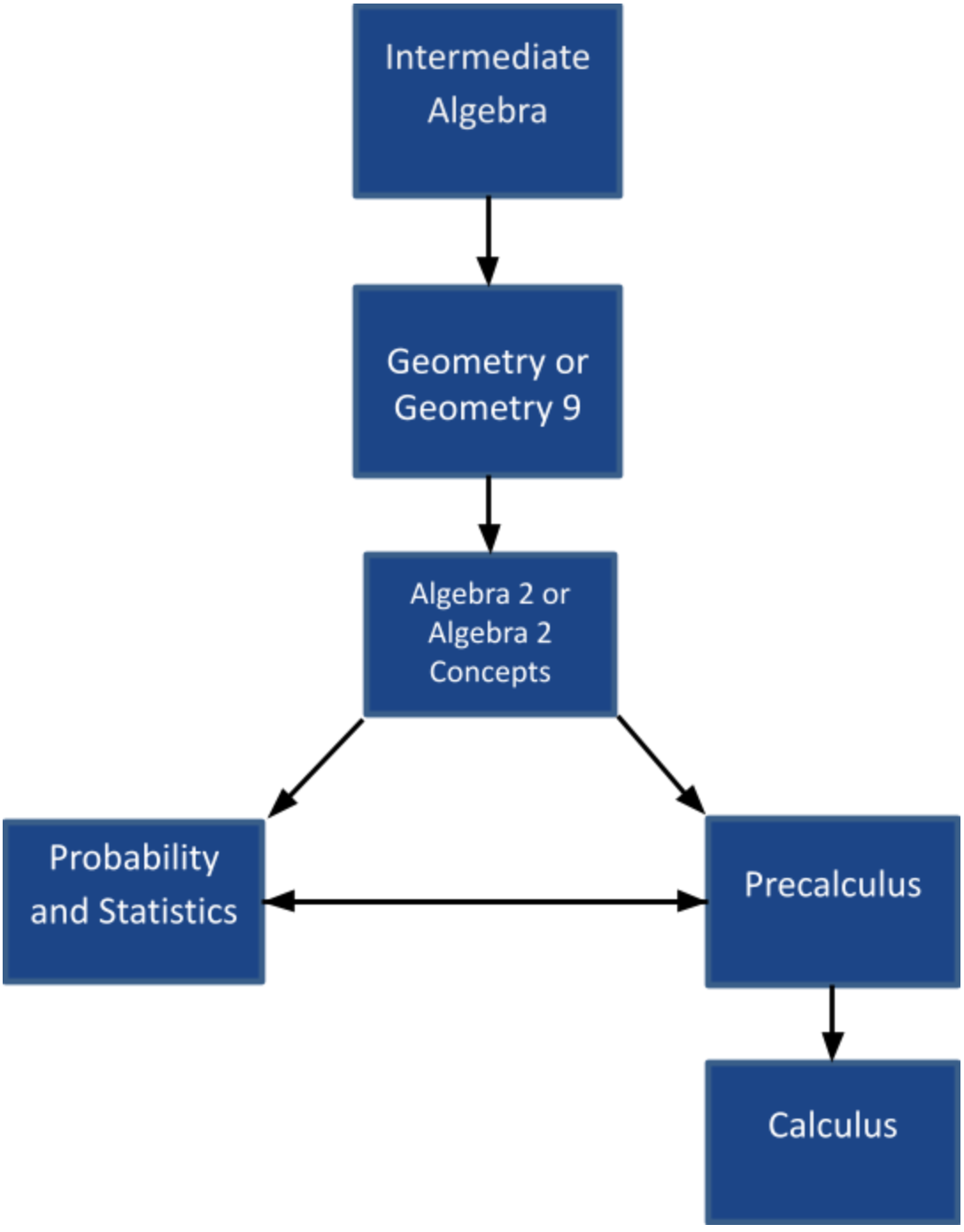
MATHEMATICS

REQUIRED FOR GRADUATION

Three (3) credits of mathematics are required for graduation from high school in Minnesota. Students must complete Intermediate Algebra, Geometry, Algebra 2 or its equivalent as part of the three (3) credit requirements. Four years of mathematics is recommended for students who plan on attending higher education. For students with Individualized Education Plans (IEPs) and through credit recovery programs. See your high school counselor and/or case manager for further information.



MATH

Course Key For details see page 24					
Also Available through AEO	Articulated College Credit	Advanced Placement (AP)	Career and Technical Education (CTE)	College in the Schools (CITS)	Repeatable

Credit: .5 per semester **Term(s):** S1 & S2 (Elective credit)	**180001-180002 Algebra 1** **Grade(s):** 9 Elective Credit Only

This course is designed for ninth graders who need to develop mastery of skills and concepts which are prerequisites for Intermediate Algebra. Topics of study include relationships of data represented in various forms, linear functions and linear models, and properties of congruent and similar figures. This course is based on 8th grade and high school math standards. The student would receive 1.0 elective credit upon successful completion of the course. Students will still need to take Intermediate Algebra, Geometry and Algebra 2/Algebra 2 Concepts to fulfill graduation requirements.

Credit: .5 per semester **Term(s):** S1 & S2	**181001-181002 Intermediate Algebra** **Prerequisites:** Algebra 1 **Grade(s):** 9 -12

This course is designed for students who have successfully passed 8th grade Algebra 1. Students will understand the concept of function and identify its important features. Students will recognize and solve math problems involving linear, quadratic, and exponential functions in mathematical situations and represent functions with tables, graphs and symbols.

Credit: .5 per semester **Term(s):** S1 & S2	**181201-181202 Geometry 9** **Prerequisites**: Intermediate Algebra **Grade(s):** 9

This course is designed for students who have successfully completed Intermediate Algebra in 8th grade. Students will calculate measurements of plane and solid geometric figures, solve geometric problems using algebraic methods, and construct logical arguments, based on axioms, definitions and theorems. Students will also know and apply properties of geometric figures (parallel and perpendicular lines, angles, triangles, quadrilaterals, Pythagorean Theorem, trigonometry, and circles) to solve real-world problems. Additional rigor will be incorporated into the course to extend students' learning.

Credit: .5 per semester **Term(s):** S1 & S2	**181401-181402 Geometry** **Prerequisites**: Intermediate Algebra **Grade(s):** 10 -12

This course is designed for students who have successfully completed Intermediate Algebra. Students will calculate measurements of plane and solid geometric figures, solve geometric problems using algebraic methods, and construct logical arguments, based on axioms, definitions and theorems. Students will also know and apply properties of geometric figures (parallel and perpendicular lines, angles, triangles, and quadrilaterals) to solve real-world problems.

Credit: .5 per semester **Term(s):** S1 & S2	**181501-181502 Algebra 2 Concepts** **Prerequisites:** Intermediate Algebra, Geometry **Grade(s):** 11 -12

This course is designed for those students that have successfully completed Geometry. It will offer a review of Intermediate Algebra, and incorporate concepts from Algebra 2 such as functions, probability, statistics and graph theory, and will place an emphasis on quadratics.

Credit: .5 per semester **Term(s):** S1 & S2	**181601-181602 Algebra 2** **Prerequisites:** Geometry or concurrently with Geometry **Grade(s):** 10 -12 

This course is designed for students who have successfully completed Geometry. Students will solve problems involving linear, quadratic, and exponential functions. Students will generate equivalent algebraic expressions involving polynomials, and radicals. Students are encouraged to purchase their own calculator.

Credit: .5 per semester **Term(s):** S1 & S2	**181651-181652 Probability and Statistics** **Prerequisites:** Algebra 2 or Algebra 2 Concepts **Grade(s):** 11 -12 

This course is designed for students that have successfully completed Algebra 2 Concepts, Algebra 2, or Precalculus. An introduction to college statistics, students will work with probability, data collection, descriptive and inferential statistics, and technological tools to draw conclusions, identify trends and describe relationships. Students will also study statistical measures of centrality and spread, methods of data collection, methods of determining probability, binomial and normal distributions, hypothesis testing, and confidence intervals. Students will use multiple representations to present data including written descriptions, numerical statistics, formulas, and graphs. Students are encouraged to purchase their own calculator.

Credit: .5 per semester **Term:** S1 & S2	**181701-181702 (CITS)* Precalculus** **Prerequisite**: Algebra 2 **Grade(s):** 11 -12 

This course is designed for students who excelled in Algebra 2 and intend to study in a field requiring higher mathematics. Precalculus serves as the bridge between Algebra and Calculus. Students will solve problems involving algebraic functions, equations, inequalities, absolute value graphing, logarithmic, exponentials, and analytic trigonometry. Students are encouraged to purchase their own TI-84 calculator.

***CITS**: Upon successful completion of this course, students have the opportunity to receive five (5) college credits from Lake Superior College (LSC). This course is equivalent to the LSC course Math 1150 - Precalculus. Minimum requirements: cumulative GPA of 3.0 or approval from cooperating college.*

**Please refer to page 14 for an Important Update Regarding College in the Schools (CITS) Courses.*

Credit: .5 per semester **Term:** S1 & S2	**181801-181802 AP (CITS)* Calculus** **Prerequisite:** Precalculus and Commitment Agreement required **Grade(s):** 12

This course is designed for students who excelled in Precalculus and intend to study in a field requiring higher mathematics. Students are strongly encouraged to purchase their own TI-83 calculator and will be expected to take the AP Exam for Calculus in May. Topics of study include: limits, logarithmic, exponential, and other transcendental functions, differentiation and integration.

The course adheres to rigorous standards set by the College Board. Students will be asked to cover the cost of testing.

CITS: *Upon successful completion of this course, students have the opportunity to receive five (5) college credits from the University of Minnesota Duluth (UMD). This course is equivalent to the UMD college course MATH 1296 - Calculus. Minimum requirements: cumulative GPA of 3.0 or approval from cooperating college.*

**Please refer to page 14 for an Important Update Regarding College in the Schools (CITS) Courses.*