



Mathematics/Statistics/ Computer Science Courses

We strongly recommend that all students take four years of mathematics in grades 9-12. Many colleges and universities are requiring three years and recommending four years of high school-level mathematics, along with experience in applied math and computer applications or programming. Vocational and technical schools also require a strong math background for many of their programs. In order to prepare for post-secondary studies and the future job market, students can benefit from a well-chosen plan of mathematical coursework that is appropriate for them. With this in mind, the Mathematics Department offers courses that are sequential and appropriate to meet each student's plan for the future.

To fulfill graduation requirements, all students are required to complete twelve quarter courses (three years). Computer Science credits do not count toward the mathematics graduation requirement, but are recommended for students considering post secondary training. Incoming ninth graders are enrolled in a math course based on input from the eighth grade math teacher, previous grades in mathematics, standardized test scores, and student/parent choice.

Calculators:

Intermediate Algebra and Geometry:

A scientific calculator is needed for courses in Intermediate Algebra and Geometry. We recommend the TI-30X or TI-30X II (solar). We do not recommend the TI-30Xa.

Algebra-2, CAPS, Pre-Calculus, Calculus, and AP Statistics:

A graphing calculator is necessary for courses Algebra-2, CAPS, Pre-Calculus, Calculus, and Statistics. Texas Instruments makes several user friendly calculators. Because the TI-83 and TI-84 series calculators are used for classroom demonstrations and discussion, the Eastview Math Department strongly recommends these models to students. Due to lack of ease in use or missing applications, we do NOT recommend the TI-85 or TI-86. The TI-89, TI-92 and TI-Nspire CAS are not allowed on tests and college entrance exams and therefore are discouraged. The TI-89 is not allowed on the ACT Exam. Cell phone/iPad calculators are not allowed on any assessments. Questions may be referred to the Math Department Coordinator.

Students who are interested in taking two math courses concurrently should consult with their math teacher. The preferred combination for doubling up is either Intermediate Algebra and Geometry or Geometry and Algebra-2. Doubling up requires a very strong math aptitude, commitment to extra study time outside of class, and teacher recommendation.

It is very important that you register for the mathematics/statistics class that best fits your background, skills, scholarly habits and future plans. Changing to a different course partway through the school year can be a very difficult situation, and there is no guarantee that a change could happen. You are advised to register for the course that you are most likely to learn the most in and complete successfully, not just "try out". If you are uncertain about correct registration and placement, please see your counselor or current math teacher. Near the end of the school year, re-check your registration and make any necessary changes at that time.

Students interested in honors or advanced placement courses are encouraged to review the "Characteristics of a Student Well-Suited for Honors Courses" on page ii before committing to the rigors of such a class.

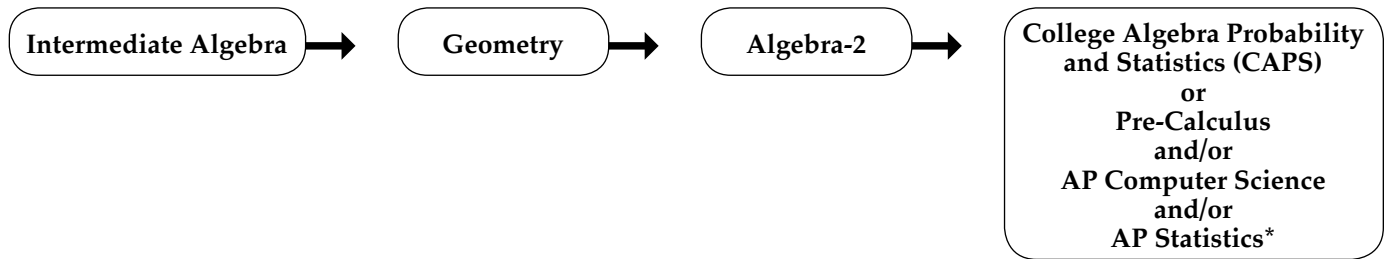
LEVELS OF STUDY AT EASTVIEW HIGH SCHOOL

NOTE: The flow charts are the recommended path for the majority of students

LEVEL 1: This level is suggested for students who have not successfully completed a full year of Intermediate Algebra in 8th grade and/or have experienced great difficulty with math. This path is designed to help fill in any gaps in understanding. To be successful at this level, students will need a desire to improve on their weaknesses and work hard to fill in any gaps in understanding. Students will be a full year behind their peers, but through the four years of math will be prepared for entrance to many non-math related post-secondary programs. A scientific calculator is required for both Intermediate Algebra courses and Geometry. A graphing calculator is needed for Algebra 2.

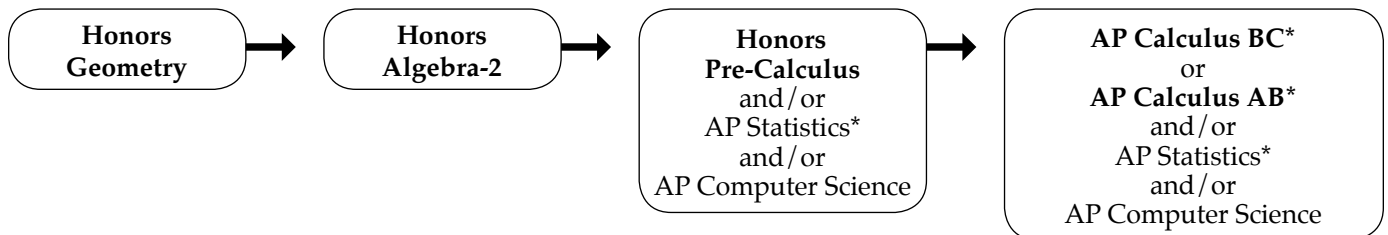


LEVEL 2: This level is suggested for students who have not completed a full year of Intermediate Algebra prior to entering high school but desire a standard high school curriculum necessary for entrance in most programs to most colleges, universities, and technical institutes. To be successful at this level, a student must have a solid math background along with good classroom, study, and homework skills. Courses at or above Algebra 2 require a graphing calculator. Due to the sequential nature of math courses, successful completion in each course is required before progressing to the next course.



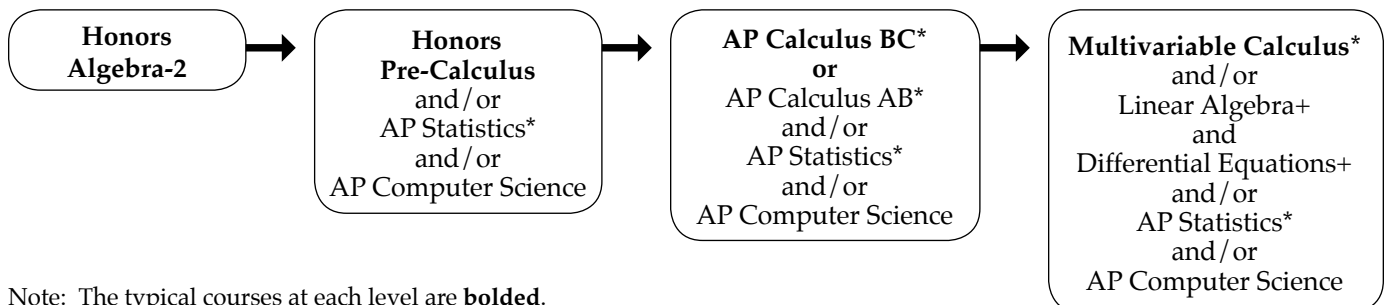
NOTE: Students who are very successful in Level 2 may have an opportunity to move to Level 3. Request a recommendation from your current math instructor if you are interested in that move.

LEVEL 3: This level is for students who have been accelerated a full year in math. These students have completed both Algebra 1 and Intermediate Algebra prior to entering high school and wish to engage in a more challenging mathematics curriculum. Students in level three are likely considering a college major and career that requires a rigorous mathematics preparation. To be successful, level three students need a strong math background and excellent classroom, study, attendance, and homework habits. All courses except Geometry require a graphing calculator.



NOTE: Students who are very successful in Level 3 may have an opportunity to move to Level 4. Request a recommendation from your current math instructor if you are interested in that move.

LEVEL 4: This level is for students who have been accelerated two full years in math. It is a rigorous path of study recommended for those that have a very strong aptitude in mathematics and wish to pursue a very math intensive college major and career. The second two years of this level are college level math courses. All courses require a graphing calculator.



Note: The typical courses at each level are **bolded**.

* Summer work may be required for these courses.

+ Linear Algebra and Differential Equations are each semester courses and are designed to be taken together as a year-long program. AP Statistics and AP Computer Science may be taken at any time after successful completion of Algebra-2.

EASTVIEW HIGH SCHOOL MATHEMATICS COURSE DESCRIPTIONS

Students should register for all courses in the sequence.

COURSES FOR GRADES 9, 10, 11 and 12

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|---|---|
| 0701 Intermediate Algebra Concepts A | Grades 9, 10 |
| 0702 Intermediate Algebra Concepts B | Prerequisite: Middle School Instructor Recommendation |
| 0703 Intermediate Algebra Concepts C | |
| 0704 Intermediate Algebra Concepts D | |

Intermediate Algebra Concepts is a course designed to prepare students for success in Intermediate Algebra. Students will build foundational math skills with work on fractions, decimals, and integers. Problems solving strategies will be developed with the use of proportions, tables, graphs, and equations. Linear algebra will also be a component of this course. This course is only offered to students with a significant need for remedial math intervention. Upon successful completion of this course, students will move on to Intermediate Algebra. **A scientific calculator is required. Students should register for all courses A, B, C, D.**

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|------------------------------------|---|
| 0705 Intermediate Algebra A | Grades 9, 10, 11, 12 |
| 0706 Intermediate Algebra B | Prerequisite: Completion of 8th Grade Algebra 1 |
| 0707 Intermediate Algebra C | |
| 0708 Intermediate Algebra D | |

Intermediate Algebra is a study beyond linear topics in Algebra. Topics include systems of equations, quadratic equations, polynomials, data and statistics, probability and simulation, transformations and connections to geometry. **A scientific calculator is required. Students should register for all courses A, B, C, D.**

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|------------------------|---|
| 0709 Geometry A | Grades 9, 10, 11, 12 |
| 0710 Geometry B | Prerequisite: Successful completion of Intermediate Algebra |
| 0711 Geometry C | |
| 0712 Geometry D | |

This course in plane and solid geometry includes points, lines, planes, polygons, and circles. Topics are studied within the context of reflections, transformations and real-world applications. Proofs will be included in the course. Additional topics include congruence, measurement, formulas, coordinate geometry, similarity, logic, trigonometry and vectors. **A scientific calculator is required This is a year-long course. Students should register for all courses A, B, C, D.**

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|-------------------------------|---|
| 0713 Honors Geometry A | Grades 9, 10, 11, 12 |
| 0714 Honors Geometry B | Prerequisite: Successful completion of 8th Grade Intermediate |
| 0715 Honors Geometry C | Algebra or an "A" in Intermediate Algebra or |
| 0716 Honors Geometry D | teacher recommendation |

This course in plane and solid geometry includes points, lines, planes, polygons, and circles. Topics are studied within the context of reflections, transformations and real-world applications. Proofs and projects will be included in the course. Additional topics include congruence, measurement, formulas, coordinate geometry, similarity, logic, trigonometry and vectors. **A scientific calculator is required. See "Characteristics of a Student Well-Suited for Honors Math Courses" above. This is a year-long course. Students should register for all courses A, B, C, D.**

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|-------------|----------------------------|-------------------------------------|
| 0726 | Geometry Concepts A | Grades 10, 11, 12 |
| 0727 | Geometry Concepts B | Prerequisite: Instructor Permission |
| 0728 | Geometry Concepts C | |
| 0729 | Geometry Concepts D | |

This course in plane and solid geometry includes points, lines, planes, polygons, and circles, using a more concrete hands-on approach. These concepts are studied within the context of reflections, transformations and real-world applications. The study of transformations will continue and be applied to the congruence of triangles. Measurement formulas will be applied to two- and three-dimensional figures. Additional topics covered in this course include coordinate geometry, similarity, logic reasoning, and trigonometry. **A scientific calculator is required. This is a year-long course. Students should register for all courses A, B, C, D.**

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|-------------|-----------------------------|-------------------------------------|
| 0730 | Algebra-2 Concepts A | Grades 10, 11, 12 |
| 0731 | Algebra-2 Concepts B | Prerequisite: Instructor Permission |
| 0732 | Algebra-2 Concepts C | |
| 0733 | Algebra-2 Concepts D | |

This second year course in Algebra will emphasize statistical analysis, trigonometry, exponential and linear functions. Discrete math will also be included. Technology will be integrated throughout. A graphing calculator will be required. The TI-83 or TI-84 is recommended. **NOTE: Some colleges and universities may NOT accept Algebra-2 Concepts in determining admission for students. College bound students are strongly urged to select Algebra-2.**

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| 0740 | Algebra-2A | Grades 9, 10, 11, 12 |
| 0741 | Algebra-2B | Prerequisite: Successful completion of a Geometry course |
| 0742 | Algebra-2C | sequence |
| 0743 | Algebra-2D | |

This second year course in Algebra will emphasize reading, problem solving, real-world applications, technology, the study of functions and provide for integration of geometry topics. Functions to be investigated include: variations, linear relations, quadratic, exponential, logarithmic, and trigonometric. This course will also study discrete math using matrices, probability, and statistics. Algebra-2 Is a “Gateway” course that prepares students for advanced mathematics and statistical offerings. Thus successful performance in this course and mastery of its content are especially important and valuable. A strong background in Algebra-2 (usually defined as B or better) is a prerequisite for AP Statistics and Pre Calculus. **This is a year-long course. Students should register for all courses A, B, C, D. A graphing calculator is required. Any of the TI-83 or TI-84 series is strongly recommended.**

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| 0744 | Honors Algebra-2A | Grades 9, 10, 11 |
| 0745 | Honors Algebra-2B | Prerequisite: Successful completion of Honors Geometry or |
| 0746 | Honors Algebra-2C | “A” grades in Geometry or teacher recommendation |
| 0747 | Honors Algebra-2D | |

This second year course in Algebra will emphasize reading, problem solving, real-world applications, technology and provide for integration of geometry topics. Functions to be investigated include: variations, linear relations, quadratic, exponential, logarithmic, and trigonometric. Students will complete projects that demonstrate their understanding of these functions in real applications. This course will also study discrete math using matrices, probability, and statistics. Algebra-2 Is a “Gateway” course that prepares students for advanced mathematics and statistical offerings. Thus successful performance in this course and mastery of its content are especially important and valuable. A strong background in Algebra-2 (usually defined as B or better) is a prerequisite for AP Statistics and Pre Calculus. **See “Characteristics of a Student Well-Suited for Honors & Advanced Placement Math Courses” above. This is a year-long course. Students should register for all courses A, B, C, D. A graphing calculator is required. Any of the TI-83 or TI-84 series is strongly recommended.**

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|------|----------------------|---|
| 1276 | Math Peer Tutoring A | Grades 9, 10, 11, 12 |
| 1277 | Math Peer Tutoring B | Prerequisite: Concurrently enrolled in Honors Algebra 2 or higher |
| 1278 | Math Peer Tutoring C | |
| 1279 | Math Peer Tutoring D | |

A Math Peer Tutor will have the opportunity to work with a specific math class (generally our math concepts courses) for an entire quarter. You will assist in answering questions and will work one-on-one with students or with students in small groups. Successful students in this class will earn a P for a .75 general credit. You will be assigned to a math class based upon your schedule and the schedule of math classes offered. **Students may enroll and receive credit for this course more than once.**

COURSES OFFERED TO STUDENTS IN GRADES 11 and 12

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| 0755 | Pre-Calculus A | Grades 11, 12 |
| 0756 | Pre-Calculus B | Prerequisite: Successful completion of Algebra-2 |
| 0757 | Pre-Calculus C | |
| 0758 | Pre-Calculus D | |

The Pre-Calculus course continues the study of functions and other pre-calculus topics including trigonometry, vectors, limits, and discrete mathematics. Reading mathematics, projects and technology applications are all included in this course. **A very strong background in Algebra-2 is required. This is a year-long course. Students should register for all courses A, B, C, D. A graphing calculator is required. Any of the TI-83 or TI-84 series is strongly recommended.**

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|------|-----------------------|--|
| 0759 | Honors Pre-Calculus A | Grades 11, 12 |
| 0760 | Honors Pre-Calculus B | Prerequisite: Successful completion of Honors Algebra-2 or "A" grades in Algebra-2 or teacher recommendation |
| 0761 | Honors Pre-Calculus C | |
| 0762 | Honors Pre-Calculus D | |

The Pre-Calculus course continues the study of functions, including parametrics and polars and other pre-calculus topics including trigonometry, analytical geometry, vectors, limits, and discrete mathematics. Reading mathematics, projects and technology applications are all included in this course. Continuation in this course sequence is contingent upon receiving a passing grade the previous quarter. Mathematical rigor necessary for Calculus will be emphasized. **See "Characteristics of a Student Well-Suited for Honors & Advanced Placement Math Courses" above. A very strong background in Algebra-2 is required. This is a year-long course. Students should register for all courses A, B, C, D. A graphing calculator is required. Any of the TI-83 or TI-84 series is strongly recommended.**

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| 0763 | Advanced Placement Statistics A | Grades 11, 12 |
| 0764 | Advanced Placement Statistics B | Prerequisite: Successful completion of Honors Algebra-2 or "B" grades in Algebra-2 or teacher permission. MCA-II Math Proficiency Required. |
| 0765 | Advanced Placement Statistics C | |
| 0766 | Advanced Placement Statistics D | |

Advanced Placement Statistics is an advanced mathematics course for college bound students who are intending to pursue a major in the social sciences, business, psychology, or health sciences along with the technically-oriented math/science majors. Topics include descriptive and inferential statistics. Experiments and projects are a major part of the course. The course is presented at a sufficient level of rigor to prepare for the main goal: success on the Advanced Placement Exam in May. **Students need a very strong background in Algebra-2.** (usually defined as B or better) **See "Characteristics of a Student Well-Suited for Honors & Advanced Placement Math Courses" above. This is a year-long course. Students should register for all courses A, B, C, D. Because of its built-in statistical functions, the TI-83 or TI-84 series graphing calculator is REQUIRED.**

COURSES FOR GRADE 12

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|-------------|--------------------------------|---------------|---|
| 0751 | Technical Mathematics A | Grades 12 | |
| 0752 | Technical Mathematics B | Prerequisite: | Instructor Permission or MCA-II Math test deficiency. |
| 0753 | Technical Mathematics C | | |
| 0754 | Technical Mathematics D | | |

Technical Mathematics will begin by building estimation and problem solving skills. Units on logic and various voting methods will follow. The course will then review topics of number theory, algebra, and geometry. New topics of consumer mathematics, financial management, measurement, probability, statistics, and trigonometry will round out the course. Technical Mathematics is appropriate for students who experienced difficulty in Algebra-2. The Technical Mathematics A, B, C, D sequence is recognized as one year of an appropriate mathematics course by the National Collegiate Athletic Association (NCAA) Initial Eligibility Clearinghouse. **This is a year-long course. Students should register for all courses A, B, C, D.**

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| 0776 | College Algebra/ Probability/ Statistics A | Grade 12 | |
| 0777 | College Algebra/ Probability/ Statistics B | Prerequisite: | Algebra-2 or Algebra-2 Concepts |
| 0778 | College Algebra/ Probability/ Statistics C | | |
| 0779 | College Algebra/ Probability/ Statistics D | | |

College Algebra, Probability, and Statistics (CAPS) has been designed to meet the needs of seniors who have demonstrated an interest in continuing their mathematics study beyond Algebra-2 and are not intending to pursue a post-secondary course of study with a math/science focus. The target group of students include those who demonstrate skills and abilities in mathematics that are greater than those needed for Tech Math but may be problematic for success in Pre-Calculus. Topics will include analyzing data, chance and probability, functions and trigonometry. **Students should register for all courses A, B, C, D. Because of its built-in statistical functions, the TI-83 or TI-84 series graphing calculator is REQUIRED.**

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| 0788 | Advanced Placement: Calculus AB-A | Grade 12 | |
| 0789 | Advanced Placement: Calculus AB-B | Prerequisite: | Successful completion of Honors Precalculus or "A" grades in Precalculus or teacher recommendation. |
| 0790 | Advanced Placement: Calculus AB-C | | |
| 0791 | Advanced Placement: Calculus AB-D | | |

The major emphasis of this course is to prepare students to pass the AP exam given in the spring. Students will be expected to take the exam. This course will consist of topics in analytical geometry, differential calculus, and integral calculus. Additional concepts will include limits, related rates, max./min. applications, and graphing. Area under a curve and volumes of solids of revolution will also be investigated. Applications to real problems as well as calculus of trigonometric and other transcendental functions will occur in both differential and integral calculus. We will use the graphing calculator extensively. **See "Characteristics of a Student Well-Suited for Honors & Advanced Placement Math Courses" above. This is a year-long course. Students should register for all courses A, B, C, D. A graphing calculator is required. Any of the TI-83 or TI-84 series is strongly recommended. The TI-89 may be used in this class and on the AP Exam.**

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| 0792 | Advanced Placement: Calculus BC-A | Grade 12 |
| 0793 | Advanced Placement: Calculus BC-B | Prerequisite: Successful completion of Honors Precalculus |
| 0794 | Advanced Placement: Calculus BC-C | or "A" grades in Precalculus or teacher |
| 0795 | Advanced Placement: Calculus BC-D | recommendation. |

The major emphasis of this course is to prepare students to pass the AP exam given in the spring. Students will be expected to take the exam. The rigor and pace will be much more than that of Advanced Placement AB Calculus. The BC course includes all of the AB curriculum plus 3 additional chapters. Additional topics will include L'Hopital's Rule, Improper Integrals, Partial Fractions, Infinite Series, Taylor's Theorem, Parametric Functions, Polar Functions, and Vectors. Students pursuing careers in engineering and the physical sciences would benefit from selecting the BC course. **See "Characteristics of a Student Well-Suited for Honors & Advanced Placement Math Courses" above. Passing the AP Calculus BC Exam would earn a full year's college credit.** Instructor's permission required. We will use the graphing calculator extensively. **This is a year-long course. Students should register for all courses A, B, C, D. A graphing calculator is required. The TI-83 or TI-84 series is strongly recommended. The TI-89 may be used in this class and on the AP Exam.**

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|-------------|---|---|
| 1565 | Advanced Placement: Computer Science A | Grades 11, 12 |
| 1566 | Advanced Placement: Computer Science B | Prerequisite: Algebra-2 or Honors Algebra-2 or Instructor |
| 1567 | Advanced Placement: Computer Science C | Recommendation |
| 1568 | Advanced Placement: Computer Science D | |

This course is designed for college-bound students who are interested in learning to program computers. The course will be taught using the Java language. Major topics will include knowledge of computer systems, variables, expressions, input-output, conditionals, loops, object oriented programming, arrays, parameters, simple recursion, searching, sorting, and strings. Application projects will be assigned. This course will help prepare students for the advanced placement test in the computer language Java. This is a year-long course. Students should register for all courses A, B, C, D. **See "Characteristics of a Student Well-Suited for Honors Math Courses" above. NOTE: This course is an elective credit and does not qualify as one of the eight quarter courses in math required for graduation.**

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|-------------|---------------------------------|---|
| 0796 | Multivariable Calculus A | Grade: 12 |
| 0797 | Multivariable Calculus B | Prerequisites: Successful completion of Advanced |
| 0798 | Multivariable Calculus C | Placement Calculus BC class and AP exam |
| 0799 | Multivariable Calculus D | or instructor recommendation. |

This course is designed for the gifted math student. It covers the same material as a college-level Multivariable Calculus class, including the same rigor, expectations, and special technological skills found in many 2nd and 3rd year college courses. Topics covered include a brief review of infinite series and parametric and polar coordinates, vector geometry and 3-dimensional graphing techniques, vector-valued functions, differentiation of several variables, multiple integration, line and surface integrals, and fundamental theorems of vector analysis. Students will also learn to use the mathematical software package Maple to aid in their understanding of the material and to complete assignments and projects. We will use graphing calculators extensively. The TI-83 or TI-84 series is strongly recommended. The TI-89 may be used in this class. Students pursuing careers in engineering and the physical sciences would benefit from selecting this course. **This is a year-long course. Students should register for all courses A, B, C, D.**

- 0768 Linear Algebra/Differentiated Equations A
- 0769 Linear Algebra/Differentiated Equations B
- 0770 Linear Algebra/Differentiated Equations C
- 0771 Linear Algebra/Differentiated Equations D

Grade: 12

Prerequisites: Successful completion (C or better) of Multivariable Calculus or instructor recommendation. May be taken concurrently with Multivariable with instructor permission.

The first semester is an introductory course in linear algebra, intended for students who plan on majoring in math, science, computer science, and/or engineering in college. Topics include systems of linear equations, matrices, determinants, vector spaces, linear transformations and eigenvalues, eigenvectors, etc. Selected applications and use of technology will be included. Second semester is an introductory course in Differential Equations. Topics include basic definitions, ideas, and terminology of ordinary differential equations. Emphasis will be placed on the techniques of problem solving. Specific topics covered include solutions and applications of first-order differential equations, solutions of linear differential equations of higher order, applications of second-order linear differential equations, power series solutions, the Laplace transform, and systems of linear differential equations. There is also an introduction to numerical and graphical methods of solution. Knowledge of the software package “Maple” (or similar) is expected. Prerequisites are the same as those for Linear Algebra. The TI-83 or TI-84 series is strongly recommended; the TI-89 may also be used in this class. **This is a year-long course. Students should register for all courses A, B, C, D.**