River Dell Regional School District

230 Woodland Avenue
River Edge, NJ 07661
www.riverdell.org

AP course curriculum is coordinated in conjunction with The College Boards. Each year, an audit is submitted as part of the process.

Advanced Placement Calculus AB

Grade 12
5 credits/full year

PREREQUISITE:
Honors Pre-Calculus AB with a grade of 80 or above

The content of this course is determined primarily by the AB-level syllabus of the program in Advanced Placement Mathematics, published by the College Entrance Examination Board. An introduction to the basic concepts of limits, continuity, differential and integral calculus, with applications to velocity, accelerations, curve sketching, related rates, and max/min problems will be given. This course will focus on the theoretical developments and derivation of each of these topics. Techniques of differentiation and integration will be studied and applied. Students are required to take the Advanced Placement Exam in the spring. It is possible for students to earn up to three college credits by performing well on the AP Calculus AB Exam.

Advanced Placement Calculus BC

Grade 12
5 credits/full year

PREREQUISITE:
Honors Pre-Calculus BC with a grade of 80 or above

The content of this course is determined primarily by the BC-level syllabus of the program in Advanced Placement Mathematics published by the College Entrance Examination Board. This course will include all the Advanced Placement AB topics, but the exercises will be more rigorous. Also considered will be topics in sequences, series, parametric, and polar functions, slope fields, applications of integrals, integration by parts and partial fractions, and logistic differential equation. Students are required to take the Advanced Placement Exam in the spring. It is possible for students to earn up to six college credits by performing well on the AP Calculus BC Exam.

Advanced Placement Statistics

Grades 11-12
5 credits/full year

PREREQUISITE:
Advanced Algebra 2 w/Trig with a grade of 90 or above

The AP Statistics course is an in-depth study of statistics designed for the highly motivated student. This course introduces students to the major concepts and tools used to collect, analyze, and draw conclusions from data. Students will be exposed to broad conceptual themes, including exploring data, planning a study, anticipating patterns, and statistical inference. According to The College Board, "the number of college students who take a Statistics course is almost as large as the number who take a Calculus course. At least one Statistics course is typically required for majors such as Engineering, Psychology, Sociology, Health Science, and Business." Students are required to take the Advanced Placement Exam in the spring.

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Advanced Placement Computer Science Principles

Grades 10-12
5 credits/full year

PREREQUISITE:
Algebra 1

The AP Computer Science Principles course is designed to be equivalent to a first-semester introductory college computing course. In this course, students will develop computational thinking skills vital for success across all disciplines, such as using computational tools to analyze and study data and working with large data sets to analyze, visualize, and draw conclusions from trends. The course engages students in the creative aspects of the field by allowing them to develop computational artifacts based on their interests. Students will also develop effective communication and collaboration skills by working individually and collaboratively to solve problems, and will discuss and write about the impacts these solutions could have on their community, society, and the world.

AP Computer Science A

Grades 11-12
5 credits/full year

PREREQUISITE:
Algebra 2 ***plus*** one year of Computer Programming

AP Computer Science A is equivalent to a first-semester, college level course in computer science. The course introduces students to computer science with fundamental topics that include problem solving, design strategies and methodologies, organization of data (data structures), approaches to processing data (algorithms), analysis of potential solutions, and the ethical and social implications of computing. The course emphasizes both object-oriented and imperative problem solving and design using Java language. These techniques represent proven approaches for developing solutions that can scale up from small, simple problems to large, complex problems. The AP Computer Science A course curriculum is compatible with many CS1 courses in colleges and universities.