

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 Biology

Grade 12
10 credits/full year

PREREQUISITE:
85+ average in Honors
Biology/90 average in
Biology.
Anatomy & Physiology is
recommended before
enrollment in AP Biology
and
All AP Criteria (pg. 11)

The Advanced Placement Biology curriculum contains 12 units of study. Each unit of study incorporates one or more of the following four Big Ideas. The process of evolution drives the diversity and unity of life. Biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain dynamic homeostasis. Living systems store, retrieve, transmit and respond to information essential to life processes. Biological systems interact, and these systems and their interactions possess complex properties. In addition to these four Big Ideas, emphasis is placed on scientific process. Students will design, implement and present findings from independent investigations. Students are required to take the Advanced Placement Exam in May.

Advanced Placement Environmental Science

Grade 12
10 credits/full year

PREREQUISITE:
Chemistry and
All AP Criteria (pg. 11)

AP Environmental Science is an applied science that has deep roots in problem-solving. Environmental scientists search for viable solutions to environmental problems, solutions that are based as much as possible on solid scientific knowledge. The main focus will be to attempt to understand how the biosphere changes naturally and how human activities are altering it. For example, industry, transportation, water and resource use, energy production, agriculture, waste production and expansion of cities, all go on in a mostly unsustainable way. Many of the environmental problems we face are due to excessive population growth and unsustainable system design. In this class, students will be able to apply knowledge from the basic sciences and mathematics to these very interdisciplinary practical global problems. To take this course, the student must be capable of reading college level textbooks and journals. Students are required to take the Advanced Placement Exam in May.

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Advanced Placement Chemistry

Grades 11-12
10 credits/full year

PREREQUISITE:
All AP Criteria (pg. 11)
CO-REQUISITE:
Enrollment in Pre-Calculus
or Calculus

AP Chemistry is an intensive second-year chemistry course, which is equivalent to first-year college chemistry. Abstract concepts, mathematical analysis, and sophisticated laboratory work characterize the course. This course prepares students to take the Advanced Placement Exam in the spring, and to experience college level chemistry at the high school level.

Advanced Placement Physics C

Grade 12
10 credits/full year

PREREQUISITE:
All AP Criteria (pg. 11)
CO-REQUISITE:
Calculus

AP Physics is a calculus-based science course dealing with the branch of Physics known as Mechanics. Students will develop the ability for mathematical reasoning and analysis to solve practical laboratory problems on the level of a first-year college physics course. Students will take the Advanced Placement Exam in May.

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.

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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.