

SCIENCE CURRICULUM

Title:	Biology 1	BIOI / 322101CW
Unit credit	1	
Grade Levels	9-12	
Prerequisite	Science teacher recommendation	

This course is designed for students desiring a formal background in biology. It includes laboratory work and extensive study of specimens. Course content encompasses interrelationships of living things, levels of biological organization, human biology, social implications, biochemistry, and genetics.

Title:	Biology 1 Honors	BIOIH / 322103HW
Unit credit	1	
Grade Levels	9-12	
Prerequisite	Algebra 1 Honors and/or Science teacher recommendation	

This honors-level course is for motivated students who need an in-depth and challenging program. Course content encompasses interrelationships of living things, levels of biological organization, human biology, social implications, biochemistry, and genetics. Extensive laboratory work and problem-solving are essential components.

Title:	Applied Biology 1	ABIOI / 322601TW
Unit credit	1	
Grade Levels	9-12	
Prerequisite	Science teacher recommendation	

This course emphasizes problem-solving, decision-making, critical thinking, and applied learning. Students explore the concepts and principles of biology and chemistry and apply these concepts and principles to issues in the workplace, in society, and in personal-life experiences. Laboratory work is an essential component. Applied Biology is designated to be both academically rigorous and realistic for students pursuing technical careers through further education or through practical experience in the workforce after high school.

Title:	Applied Biology 2	ABIOH / 322701TW
Unit credit	1	
Grade Levels	10-12	
Prerequisite	Applied Biology 1 and/ or Science teacher recommendation	

This course is a continuation of Applied Biology 1 and emphasizes problem-solving, decision-making and hands-on learning. Laboratory work is an essential component. Students continue to explore concepts in biology and chemistry and apply them to issues in the workplace, in society, and in personal life experiences. It is designed for those students pursuing technical careers through further education or through experience in the workforce after high school.

Title:	Biology 2	BIOII / 322201CW
Unit Credit	1	
Grade Levels	11-12	
Prerequisite	Chemistry 1, Biology 1 and/or Science teacher recommendation	

This course is an extension of topics taught in Biology 1 and includes laboratory work in biology.

Title:	Physical Science	PHYSCI / 321101CW
Unit credit	1	
Grade Levels	9-12	
Prerequisite	Science teacher recommendation	

This course will serve as a foundation for students wishing to study chemistry or physics. Concepts include measurements, matter, simple forms of energy, magnetism, light, sound, heat and electricity. This course is heavily oriented towards laboratory investigations. **The course is not accepted as a laboratory science by South Carolina public colleges and universities.**

Title:	Physics for the Technologies 1	PHYSTEC / 324301TW
Unit credit	1	
Grade Levels	10-12	
Prerequisite	Completion of Math Tech 2 or Algebra 1 and Science teacher recommendation	

This course is designed to be both academic and practical in preparing highly motivated students for technical careers. The students will apply principles of physics to the operation of modern equipment and will concentrate on the mechanical, fluid, electrical, and thermal energy systems. Most instruction will be hands-on laboratory experiments with a strong emphasis on mathematical problem-solving.

Title:	Physics 1	PHYS / 324101CW
Unit credit	1	
Grade Levels	11-12	
Prerequisite	1 unit of science, concurrent enrollment in Algebra 2, and/or Science teacher recommendation	

This course familiarizes students with fundamental principles of physics and their applications. The course includes topics on mechanics, electricity, magnetism, thermodynamics, optics, sound and an introduction to quantum physics. Math, graphing, and problem-solving skills will comprise the basis of instruction.

Title:	Physics 1 Honors	PHYSH / 324103HW
Unit Credit	1	
Grade Levels	11-12	
Prerequisite	1 unit of Honors science, and concurrent enrollment in Algebra 2 Honors, and Science teacher recommendation	

This honors-level course focuses on the basic principles which determine the interactions between matter and energy with extensive laboratory work. The course includes topics on mechanics, electricity, magnetism, thermodynamics, optics, sound and an introduction to quantum physics. Students in this course will gain a basic knowledge of physics which they can build on in future college classes. Students in this course will be required to work with more intensity, at a deeper level, and produce a wider range of more complex material.

Title: Advanced Placement Physics C—Mechanics APPHYSCM / 327505AW
Unit credit 1
Grade Levels 11-12
Prerequisite Calculus or Calculus concurrent and approval of AP Teacher

This course gives a student a rigorous background in calculus-based college freshman level mechanics. Such a course is required for engineering students and some other types of science majors. While the course uses some calculus, it focuses heavily on topics taught in Algebra and Pre-Calculus with heavy emphasis on vector analysis. Mathematical models are used to solve problems in mechanics. Students must take the AP Physics – C Mechanics Exam in May.

Title: Advanced Placement Physics C—Electricity and Magnetism APPHYSC E / 327605AW
Unit credit 1
Grade Levels 11-12
Prerequisite Calculus or Calculus concurrent and approval of AP Teacher

This course gives a student a rigorous background in calculus-based college freshman level Electricity and Magnetism. Such a course is required for engineering students and some other types of science majors. While the course uses some calculus, it focuses heavily on topics taught in Algebra and Pre-Calculus. Mathematical models are used to solve problems in electricity and magnetism. Students must take the AP Physics –C Electricity and Magnetism Exam in May.

Title: Introduction to AP Physics B INTAPPSB / 329963HW
Unit Credit 1
Grade Levels 11-12
Prerequisite Approval of AP Teacher

This honors-level course for elective credit is a **fall** introduction to AP Physics B, which is offered in the **spring** semester. Students will begin practicing the critical thinking and inquiry skills that will be more fully developed in the AP course. Content will introduce students to topics explored more in-depth in the AP Physics B course.

Title: Advanced Placement Physics B APPHYSB / 327405AW

Unit credit	1
Grade Levels	11-12
Prerequisite	Approval of AP Teacher

This course is a rigorous study of freshman college-level physics. Traditional topics of mechanics, wave theory (optics and sound), thermodynamics, electricity, magnetism and modern physics. Problem solving skills using algebra and trigonometry are emphasized. Application of theory in laboratory is also a major component. Students must take the AP Physics B exam in May.

Title:	Chemistry 1 Honors	CHEMIH / 323103HW
Unit credit	1	
Grade Levels	10-12	
Prerequisite	1 unit of Honors science, concurrent Algebra 2 Honors, and/or Science teacher recommendation	

This is a course designed for students with exceptional academic talent and a strong desire to major in the sciences. This course is a prerequisite for Advanced Placement Chemistry. After a short review of fundamental topics covered in Physical Science Honors, students will study atomic structure, quantum mechanical theory, bonding, shapes of molecules, gases, thermochemistry, electrochemistry, oxidation reduction, nuclear chemistry, acids and bases. The course contains a major lab component.

Title:	Chemistry for the Technologies	CHEMTEC / 323601TW
Unit credit	1	
Grade Levels	10-12	
Prerequisite	Math Tech 2 or Algebra 1 and/or Science teacher recommendation	

This course is designed to be both academically rigorous and realistic for students pursuing technical careers. The emphasis will be on the technological aspects of chemistry with laboratory experiences comprising most of the course work. The focus is on the understanding and application of chemical skills as they relate to current industry practice.

Title:	Chemistry 1	CHEMI / 323101CW
Unit credit	1	
Grade Levels	10-12	
Prerequisite	1 unit of science, concurrent Algebra 2 and/ or Science teacher recommendation	

This course is rigorous and demands a high level of abstract thinking, memorization, working with symbols, and application of knowledge to problem-solving. Student participation in laboratory activities is essential for success in this course. The course content includes organization of matter, chemical bonding, atomic structure, gases, states of matter, nomenclature, and skill development.

Title:	Advanced Placement Chemistry	APCHEM / 327305AW
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Unit credit	1
Grade Levels	11-12
Prerequisite	Approval of AP Teacher

This course is designed to be equivalent to college-freshman general chemistry. Topics include: theoretical aspects of chemistry, structure of matter, kinetic theory of gases, chemical equilibria, chemical kinetics, electrochemistry, stoichiometry, and thermodynamics. There is strong emphasis on chemical calculations. Accuracy and speed problem -solving are stressed. All students taking this course are required to take the AP exam in May.

Title:	Laboratory Assistant	LABASIT / 329968CH
Unit Credit	$\frac{1}{2}$	
Grade Levels	10-12	
Prerequisite	Science teacher recommendation and completion of two science courses.	

Students who are interested in any field of science have an opportunity to serve as a laboratory assistant for a year. The laboratory assistant will aid the teacher in classroom lab preparations. Also, the assistant will be required to prepare laboratory materials, maintain the laboratory area and perform general housekeeping duties (i.e., washing lab glassware, sweeping, cleaning). In order to earn A half unit of elective credit, the student must complete an individual science project in addition to the duties outlined.