

0311 PHYSICAL SETTING: EARTH SCIENCE R

PREREQUISITES: ALGEBRA I, GEOMETRY CONCURRENT

GRADES 9-12 ♦ FULL YEAR - 1 UNIT

This course is a study of the major areas of Earth Science including; Geology, Astronomy, and Meteorology. Students investigate such areas as rocks and minerals, natural disasters, changing landscapes, celestial motion, weather, and water resources. This course meets six periods per week. The course concludes with the NYS Physical Setting/Earth Science Regents exam.

0311H PHYSICAL SETTING: EARTH SCIENCE H

PREREQUISITES: ALGEBRA I OR GEOMETRY CONCURRENT AND TEACHER RECOMMENDATION

GRADES 9-12 ♦ FULL YEAR - 1 UNIT

This class will cover all aspects of Regents Earth Science and studies topics more in depth. In addition, the students will complete: independent projects, enriched labs, independent research, presentations, problem solving labs, field work, and higher level reading and analyzing of documents and data. This course meets six periods per week. The course concludes with the NYS Physical Setting/Earth Science Regents exam. *Students should possess strong organizational and communication skills as well as have an A- final average in previous science and math courses.*

0321 LIVING ENVIRONMENT: BIOLOGY R

PREREQUISITE: GRADE 9: EARTH SCIENCE AND ALGEBRA I IN GRADE 8. GRADES 10-12: PHYSICAL

SETTING: EARTH SCIENCE

GRADES 9-12 ♦ FULL YEAR - 1 UNIT

This course will provide students with an awareness of the natural world and a basic understanding of biological processes. Investigations include problem-solving skills, the collection and analysis of data, and selected dissections. It is designed to provide a survey of topics including ecology, biochemistry, human physiology, reproduction and development, plants, genetics and evolution. This course meets six periods per week. The course concludes with the NYS Living Environment Regents exam.

0321H LIVING ENVIRONMENT: BIOLOGY HONORS

PREREQUISITE: GRADE 9: REGENTS EARTH SCIENCE AND ALGEBRA I IN GRADE 8. GRADES 10-12:

PHYSICAL SETTING: EARTH SCIENCE AND GEOMETRY

GRADES 9-12 ♦ FULL YEAR - 1 UNIT

This class will cover all aspects of Regents Biology. This curriculum will provide more in depth-study of current topics and additional topics not presented in the Regents Biology Curriculum. This course is designed for highly motivated students with an interest in a postsecondary education science major and/or a professional career related to the life sciences. Students should possess strong organizational and communication skills as well as have an A- average in previous science and math courses. This course meets six times a week. The course concludes with the NYS Living Environment Regents exam.

0331 PHYSICAL SETTING: CHEMISTRY R

PREREQUISITE: TWO UNITS OF REGENTS SCIENCE CONCURRENT ALGEBRA II WITH TRIGONOMETRY

GRADES 10-12 ♦ FULL YEAR - 1 UNIT

This course is designed primarily for college bound students who have demonstrated high ability, motivation and interest toward science and mathematics. Emphasis is placed on the mathematics and the theory of chemistry. Topics include atomic structure, bonding, periodic table, kinetics, equilibrium, acids, bases, redox, electrochemistry, organic chemistry and nuclear chemistry. The course meets six periods per week. The course concludes with the NYS Physical Setting/Chemistry Regents exam.

0331H PHYSICAL SETTING: CHEMISTRY H

PREREQUISITE: TWO UNITS OF REGENTS SCIENCE CONCURRENT ALGEBRA II WITH TRIGONOMETRY

GRADES 9-12 ♦ FULL YEAR - 1 UNIT

This class will cover all aspects of Regents Chemistry and will provide more in depth-study of theoretical and mathematical concepts not presented in Regents Chemistry. The course is designed for highly motivated students with an interest in a postsecondary education science major and a professional career related to physical science. Students should possess strong organizational and study skills as well as have an A- average in previous science and math courses. The course will cover extended topics in atomic structure, bonding, kinetics, redox, organic and nuclear chemistry. This course meets six times a week. The course concludes with the NYS Physical Setting/Chemistry Regents exam.

0332 CHEMISTRY G

PREREQUISITE: TWO UNITS OF REGENTS SCIENCE AND ALGEBRA I OR TEACHER RECOMMENDATION

GRADES 11-12 ♦ FULL YEAR - 1 UNIT

This course is designed for average junior and senior students, who, though not planning a career in science, desire a high school chemistry course. Objectives are to develop an appreciation of scientific methods and a familiarity with basic scientific facts and principles. The topics are similar to those in Regents Chemistry. However, there is an emphasis on the application of Chemistry to everyday life. The teacher may require an independent study or research project. Students should be familiar with the use of equations to solve problems. The class meets five periods per week.

0343 PHYSICS G

PREREQUISITE: ALGEBRA I AND GEOMETRY OR TEACHER RECOMMENDATION

GRADES 11-12 ♦ FULL YEAR - 1 UNIT

This course is offered for the student who wishes to learn more about the scientific aspects of the physical world in a more practical, less theoretical way than Regents Physics. Most of the student's understandings develop from laboratory experiences and should help the student to gain an appreciation for the scientific method, increase a willingness to change beliefs after carefully weighing new evidence, and provide an opportunity to develop critical thinking. Emphasis is on the Physics of everyday events and applications, the practical understanding of Physics. This course meets five periods per week.

0341 PHYSICAL SETTING: PHYSICS R

PREREQUISITE: TWO UNITS OF REGENTS SCIENCE CONCURRENT ALGEBRA II COMMON CORE

GRADES 11-12 ♦ FULL YEAR - 1 UNIT

The course presents a modern view of Physics with major emphasis on the fundamental concepts underlying this science. The course is designed for students with above average ability in both science and math. Topics include mechanics, waves, electricity, heat, light, sound and atomic and nuclear physics. A large part of the course relies on laboratory activities and individual initiative. Extensive use is made of computers – no programming experience is needed. The course concludes with the NYS Physical Setting/Physics Regents exam.

0342 PHYSICAL SETTING: PHYSICS H

PREREQUISITE: TWO UNITS OF REGENTS SCIENCE CONCURRENT ALGEBRA II COMMON CORE

ADVANCED OR HONORS AND PRECALCULUS ADVANCED OR HONORS CONCURRENT OR TEACHER RECOMMENDATION

GRADES 11-12 ♦ FULL YEAR - 1 UNIT

This course should be considered by students who wish to pursue careers in engineering, math, physics related fields, and is strongly recommended for students considering AP Physics C. This course presents a modern view of Physics with major emphasis on the fundamental concepts underlying this science. Topics include mechanics, waves, electricity, magnetism and atomic and nuclear physics. Extensive use is made of computers – no programming experience is needed. This course meets six periods a week. The course concludes with the NYS Physical Setting/Physics Regents exam. Students will have the option of writing the "B" level Advanced Placement exam. *Students should possess above final average ability in math and science and have at least maintained an A- average in both areas.*

0351 ADVANCED PLACEMENT BIOLOGY

PREREQUISITE: 3 UNITS OF REGENTS LEVEL SCIENCE (INCLUDING REGENTS BIOLOGY AND CHEMISTRY)

GRADES 11-12 ♦ FULL YEAR - 1 UNIT ♦ 7 Periods/Week

The emphasis of this course is on inquiry-based learning of essential concepts. Students are provided the opportunity to develop advanced inquiry and reasoning skills, such as designing a plan for collecting data, analyzing data, applying mathematical routines, and connecting concepts in and across domains. The major themes that recur throughout the course are: 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 process; Biological systems interact, and these systems and their interactions possess complex properties. The course concludes with a nationally administered examination approved by the College Entrance Board and all other assignments through the end of the PCSD school year. Many colleges award advanced placement status, credit, or both on the basis of the examination results.

0352 ADVANCED PLACEMENT CHEMISTRY

PREREQUISITE: 3 UNITS OF REGENTS LEVEL SCIENCE

GRADES 11-12 ♦ FULL YEAR - 1 UNIT ♦ 7 Periods/Week

The AP Chemistry course is organized around six "big ideas" in chemistry, which serve to structure the course. The emphasis of this course is on inquiry-based learning of essential concepts surrounding these six big ideas. The course supports student achievement through multiple opportunities to test, evaluate, and refine explanations and predictions of natural phenomena. Students will focus on the following science practices: generating representations and models, developing strategies for collecting data, and making connections across scales, concepts, and domains. The course supports students in mastering the quantitative aspects of chemistry, by enhancing their qualitative understanding and visualization of the particulate nature of matter. The course concludes with the Advanced Placement College Board exam, and all other assignments through the end of the PCSD school year. Many colleges award advanced placement status, credit, or both on the basis of the examination results.

0355 ADVANCED PLACEMENT PHYSICS C

PREREQUISITE: 3 UNITS OF REGENTS LEVEL SCIENCE (INCLUDING REGENTS LEVEL PHYSICS) AND PRECALCULUS WITH CALCULUS CONCURRENT

GRADES 11-12 ♦ FULL YEAR - 1 UNIT ♦ 7 Periods/Week

Class work and laboratory work combine to derive the basic physical laws in the correct mathematical form rather than the approximation used for the Regents courses. The areas that will be explored are mechanics, electricity, and magnetism. The "C" program is more demanding mathematically and may result in college credit for the potential Physics major. It is the equivalent of one semester of Mechanics and one semester of Electricity and Magnetism. Each part may be taken separately for a semester's worth of college credit. Since calculus is used extensively, advanced study in mathematics is highly recommended. The course concludes with the completion of the Advanced Placement College Board exam, and all other assignments through the end of the PCSD school year. Many colleges award advanced placement status, credit, or both on the basis of the examination results.

0353 ADVANCED PLACEMENT ENVIRONMENTAL SCIENCE

PREREQUISITE: 3 UNITS OF REGENTS LEVEL SCIENCE

GRADES 11-12 ♦ FULL YEAR - 1 UNIT

The goal of the AP Environmental Science course is to provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving or preventing them. Environmental science is interdisciplinary; it embraces a wide variety of topics from different areas of study. Yet there are several major unifying constructs, or themes, that cut across the many topics included in the study of environmental science. The course concludes with the Advanced Placement College Board exam, and all other assignments through the end of the PCSD school year. Many colleges award advanced placement status, credit, or both on the basis of the examination results.