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| **Science SB4** | |
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| 9. What are the science credit requirements for a student who enters grade 9 in 2012-2013? | **Three credits to include:**   1. Two courses with a laboratory component 2. One credit in Biology 1 or a series of courses equivalent to Biology 1 earned by passing the Biology EOC Assessment |
| 10.  What are the science credit requirements for a student who enters grade 9 in 2013-2014and subsequent years? | **Three credits to include:**   1. One credit in Biology 1 or a series of courses equivalent to Biology 1 earned by passing the Biology EOC Assessment 2. Two Equally Rigorous Courses |
| ***Courses not Equally Rigorous change to elective credit for 9th graders entering 2013 and thereafter.*** | |
| Possible scenario for advanced students entering 9th grade: student may have taken and passed Bio EOC prior to entering HS. If student passed, student still needs 3 equally rigorous science credits. | |

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| **Integrated Science I** | |
| **Course #** | 20024001,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | None |
| **Credit** | 1 |
| This course features the concepts fundamental to physical, biological, and earth/space sciences. Topics such as scientific processes, the earth and solar system, resource management, matter and energy, and human growth and development are included. | |

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| **Integrated Science II** | |
| **Course #** | 20024201,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Integrated Science I |
| **Credit** | 1 |
| This course is the second of a three-year sequence featuring the concepts fundamental to physical, biological, and earth/space sciences. Topics such as scientific processes, biological foundations of life, force, energy, electricity, and magnetism are included. Special Note: Integrated Science II will not meet the admission requirement of a four year state university, unless all three levels are completed. | |

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| **Integrated Science III** | |
| **Course #** | 20024401,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Integrated Science II |
| **Credit** | 1 |
| This course is the third of a three-year sequence featuring the concepts fundamental to physical, biological, and earth/space sciences. Topics such as scientific processes, atomic structure, relationships of force, motion and energy, biological processes, and geological changes are included. Special Note: Integrated Science will not meet the admission requirement of a four year  State university, unless all three levels are completed. | |

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| **Forensic Sciences 1** | |
| **Course #** | 2002480 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | None |
| **Credit** | 1 |
| Laboratory investigations that include the use of scientific inquiry, research, measurement, problem solving, laboratory apparatus and technologies, experimental procedures, and safety procedures are an integral part of this course. | |

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| **Q Experimental Science 1 Honors** (EXP SCI 1 HON) | |
| **Course #** | 200234001,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year Elective Credit |
| **Prerequisite** | None |
| **Credit** | 1 |
| **Note** | *This course should be paired with AP Environmental Science.* |
| In addition to the course related benchmarks, this course requires additional science content that must include benchmarks from at least one other Body of Knowledge. The additional benchmarks must include rigor appropriate for Level 3 courses. Laboratory investigations that include the use of scientific inquiry, research, measurement, problem solving, laboratory apparatus and technologies, experimental procedures, and safety procedures are an integral part of this course. | |

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| **Earth/Space Science** | |
| **Course #** | 20013101,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | None |
| **Credit** | 1 |
| This course provides opportunities for the student to develop concepts basic to the earth, including its materials, processes, history, and environment in space. Topics such as the origin of the universe and solar system, life cycle of stars, formation of rocks, land forms, plate tectonics, glaciers, meteorology, and geologic periods are included. | |

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| **Q Earth/Space Science Honors** | |
| **Course #** | 20013201,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | None |
| **Credit** | 1 |
| This course includes typical topics contained in regular earth/space science, but will require that students demonstrate a deeper level of understanding. Students will be required to complete additional projects and communicate scientific concepts with clarity. | |

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| **Biology I** | | |  | | --- | | **EOC** | |
| **Course #** | 20003101,2 | |
| **Grade Level** | 9-12 | |
| **Length** | 1 year | |
| **Prerequisite** | None | |
| **Credit** | 1 | |
| This course focuses on the study of life through the examination of fundamental concepts such as cellular biology, genetics, ecology, evolution and physiology. The scientific process and laboratory skills are emphasized along with biology’s connections to other scientific disciplines. Students learn scientific writing skills and also examine current biological issues. | | |
| **Students are required to take the state Biology End-of-Course Exam.** | | |

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| **Credit Recovery Courses** | |
| **Becomes effective with the 2012-2013 entering ninth and subsequent years.** | |
| **Course #** | **2000315 Biology 1 for Credit Recovery** |
|  | **BIO 1 CR (EL Credit)** |
| **Grade Level** | 9-12 |
| **Credit** | 1 |
| **Special notes:** Credit Recovery courses are credit bearing courses with specific content requirements defined by Next Generation Sunshine State Standards and/or Common Core State Standards. **Students enrolled in a Credit Recovery course must have previously attempted the corresponding course (and/or End-of-Course assessment)** since the course requirements for the Credit Recovery courses are exactly the same as the previously attempted corresponding course. For example, Geometry (1206310) and Geometry for Credit Recovery (1206315) have identical content requirements. It is important to note that Credit Recovery courses are not bound by Section 1003.436(1) (a), Florida Statutes, requiring a minimum of 135 hours of bona fide instruction (120 hours in a school/district implementing block scheduling) in a designed course of study that contains student performance standards, since the students have previously attempted successful completion of the corresponding course. **Additionally, Credit Recovery courses should ONLY be used for credit recovery, grade forgiveness, or remediation for students needing to prepare for an End-of-Course assessment retake.** | |

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| **Q Biology I Honors** | |
| **Course #** | 20003201,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Advanced 8th grade science with recommended grade of C or higher. |
| **Credit** | 1 |
| This advanced course will cover essentially the same topics as regular biology, but at higher levels of complexity, greater depth, and faster pace. The reading level will be higher and more reading will be required. Students will be required to use a higher level of vocabulary, do more writing, do more homework, and meet the standards of more challenging tests. | |
| **Students are required to take the state Biology End-of-Course Exam.** | |

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| **Biology Technology** | |
| **Course #** | 20004301,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Recommended Biology 1 or 1H |
| **Credit** | 1 |
| The purpose of this course is to provide an advanced study of cellular organization and function, with specific emphasis on microbiology, recombinant DNA, and hospital/college-level research techniques. Laboratory investigations, which include the use of scientific research, measurement, laboratory techniques and safety procedures, are an integral part of this course. Exploratory experiences with real-life applications will be provided. | |
| **Students are required to take the state Biology End-of-Course Exam.** | |

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| **Anatomy and Physiology** | |
| **Course #** | 20003501,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Recommended Biology 1 or 1H |
| **Credit** | 1 |
| This course will provide students with a general introduction to the structure and function of the components of the human body. Topics such as cells and tissues, skeletal system, muscular system, nervous system, sensory organs, immune response, and inheritance are included. | |

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| **Q Anatomy and Physiology Honors** | |
| **Course #** | 20003601,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Recommended Biology 1 or 1H |
| **Credit** | 1 |
| This advanced course will cover essentially the same topics as regular anatomy and physiology but at higher levels of complexity, greater depth, and faster pace. The reading level will be higher and more reading will be required. Students will be required to use a higher level of vocabulary, do more writing, do more homework, and meet the standards of more challenging tests. | |

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| **Ecology** | |
| **Course #** | 20003801,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Biology |
| **Credit** | 1 |
| This course provides students with a study of the natural mutual relationships between organisms, and of other factors comprising their environment. Topics such as food chains and webs, energy relationships, endangered species, pollution, resource use, and recycling are included. | |

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| **Marine Science I** | |
| **Course #** | 20025001,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | None |
| **Credit** | 1 |
| This course is designed to present an integrated overview of the principles and concepts of the geology, chemistry, physics, and biology as they relate to the world’s oceans. | |

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| **Q Marine Science Honors** (MARINE SCI 1 HON) | |
| **Course #** | 20025101,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 years |
| **Prerequisite** | None |
| **Credit** | 1 |
| This advanced course will cover essentially the same topics as regular Marine Science 1, but at higher levels of complexity, greater depth, and faster pace. The reading level will be higher and more reading will be required. | |

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| **Q Marine Science II Honors** | |
| **Course #** | 20025201,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Marine Science 1 |
| **Credit** | 1 |
| This course will provide an in-depth study of the marine environment begun in marine science. Its goal is to present science in a social context and to give students the foundation needed to be intelligent participants in important societal discussions that involve environmental issues touching on oceans, climate and coastal zones. | |

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| **Q Biology II Honors** | |
| **Course #** | 20003301,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Biology I or IH with recommended average grade of C or better in biology. |
| **Credit** | 1 |
| This course will expand the study of the biological concepts introduced in the first year biology course, and will introduce new and more advanced topics. Topics such as population dynamics, properties of life, species continuity, cellular metabolism, and animal and plant physiology are included. | |

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| **Physical Science** | |
| **Course #** | 20033101,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | None |
| **Credit** | 1 |
| This course provides students with a qualitative, investigative study of the introductory concepts of physics and chemistry. Topics include dynamics, periodic table, forms of energy, electricity and magnetism and chemical interactions. | |

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| **Environmental Science** | |
| **Course #** | 20013401,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | None |
| **Credit** | 1 |
| The purpose of this course is to study man's interaction with the environment. The content should include, but not be limited to the following: forms of pollution, conservation, environmental planning and policy, public land usages, population dynamics and major forms of energy. | |

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| **Astronomy Solar/Galactic** | |
| **Course #** | 20013501,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | None |
| **Credit** | 1 |
| The purpose of this course is to enable students to develop and apply knowledge of the universe and compare the conditions, properties, and motions of bodies in space. Emphasis shall be placed on concepts basic to the earth, including materials, processes, history, and the environment. | |
| **This course is recommended as an elective course for 12th grade students.** | |

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| **Q AP Environmental Science** | |
| **Course #** | 20013801,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Recommended Biology and Chemistry |
| **Credit** | 1 |
| The purpose of this course is to provide a college level course in environmental science, and to prepare the students to seek credit and/or appropriate placement in college environmental science courses. To parallel college science courses that have a required laboratory section, it is recommended that this course be accompanied by or paired with Earth/Space Science Honors to insure sufficient time for the required laboratory experiences. | |
| **Students are required to take the Advanced Placement examination.** | |

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| **Q Advanced Placement Biology** | |
| **Course #** | 20003401,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Recommended Biology and Chemistry |
| **Credit** | 1 |
| The purpose of this course is to provide a college level course in biology, and to prepare the student to seek credit and/or appropriate placement in college biology courses. To parallel college science courses that have a required laboratory section, it is recommended that this course be accompanied by or paired with Biology II Honors to insure sufficient time for the required laboratory experiences. | |
| **Students are required to take the Advanced Placement examination.** | |

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| **Chemistry I** | |
| **Course #** | 20033401,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Algebra I |
| **Credit** | 1 |
| This course will provide students with the study of the composition, properties, and changes associated with matter. Topics such as atomic theory, periodic table, bonding, chemical formulas, behavior of gases, and chemical reactions are included. | |

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| **Q Chemistry I Honors** | |
| **Course #** | 20033501,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Algebra 1 |
| **Credit** | 1 |
| This course will provide students with a rigorous study of the composition, properties, and changes associated with matter. Topics include heat, atomic structure, mole concept, reaction rates and equilibrium, solutions, and electrochemistry. | |

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| **Q Chemistry II Honors** | |
| **Course #** | 20033601,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Recommended Chemistry 1 or 1H |
| **Credit** | 1 |
| This course will expand the study of chemical concepts introduced in first year chemistry, and introduce new topics. Topics include ionic equilibrium, kinetics and thermodynamics, nuclear chemistry, and descriptive inorganic chemistry. | |

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| **Q Advanced Placement Chemistry** | |
| **Course #** | 20033701,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Recommended Chemistry 1 or 1H |
| **Credit** | 1 |
| The purpose of this course to provide a college level course in chemistry, and to prepare the student to seek credit and/or appropriate placement in college chemistry courses. To parallel college science courses that have a required laboratory section, it is recommended that this course be accompanied by or paired with Chemistry II Honors to insure sufficient time for the required laboratory experiences. | |
| **Students are required to take the Advanced Placement examination.** | |

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| **Physics I** | |
| **Course #** | 20033801,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Algebra 1 |
| **Credit** | 1 |
| This course will provide students with an introductory study of the theories and laws governing the interaction of matter, energy and the forces of nature. Topics such as kinematics, dynamics, work and power, thermodynamics, wave characteristics and magnetism are included. | |

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| **Q Physics I Honors** | |
| **Course #** | 20033901,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Algebra 1 |
| **Credit** | 1 |
| This course will provide students with a rigorous introductory study of the theories and laws governing the interaction of matter, energy and the forces of nature. Topics include energy, heat, light, electricity and nuclear physics. | |

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| **Q Physics II Honors** | |
| **Course #** | 20034101,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Physics 1 and 1H |
| **Credit** | 1 |
| This course will expand the study of physical concepts introduced in first year physics, and introduce new topics. Topics such as astrophysics, relativity, fluid dynamics, magnetic fields, and quantum mechanics are included. | |

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| **The AP Program offers four physics courses:** |
| The AP Program offers four physics courses: AP Physics 1: Algebra-based, AP Physics 2: Algebra-based, AP Physics C: Mechanics, and AP Physics C: Electricity and Magnetism.  Guided by the National Research Council and National Science Foundation, the AP Program collaborated with college and university educators and AP teachers to develop two, yearlong AP Physics courses to replace AP Physics B.  **AP Physics 1:** Algebra-based and  **AP Physics 2:** Algebra-based are the equivalent of the first and second semesters of introductory, algebra-based college courses. Because these courses are intended to be yearlong courses, teachers have time to foster deeper conceptual understanding through student-centered, inquiry-based instruction. Students have time to master foundational physics principles while engaging in science practices to earn credit or placement. |
| In addition, there are two AP Physics C courses: |
| **Physics C:** Mechanics  **Physics C:**  Electricity and Magnetism  Each corresponds to one semester of an introductory, calculus-based college course.  Physics C: Mechanics is taught prior to Physics C:  Electricity and Magnetism. |

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| **Q AP Physics I** | |
| **Course #** | 2003421 0,1,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Students should have completed geometry and be concurrently taking Algebra II or an equivalent course. Although the Physics 1 course includes basic use of trigonometric functions, this  understanding can be gained either in the concurrent math course or in the AP Physics 1 course itself. No prior course work in physics is necessary. |
| **Credit** | 1 |
| Students explore principles of Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory, simple circuits. The course is based on six Big Ideas, which encompass core scientific principles, theories, and processes that cut across traditional boundaries and provide a broad way of thinking about the physical world. The following are Big Ideas:  • Objects and systems have properties such as mass and charge.  Systems may have internal structure.  • Fields existing in space can be used to explain interactions.  • The interactions of an object with other objects can be described by forces.  • Interactions between systems can result in changes in those systems.  • Changes that occur as a result of interactions are constrained by conservation laws.  • Waves can transfer energy and momentum from one location to another without the permanent transfer of mass and serve as a mathematical model for the description of other phenomena. | |

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| **Q AP Physics II** | |
| **Course #** | 2003422 0,1,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Students should have had AP Physics 1 or a comparable introductory course. Students should have taken or be concurrently taking precalculus or an equivalent course. |
| **Credit** | 1 |
| Students explore principles of fluids, thermodynamics, electricity, magnetism, optics, and topics in modern physics. The course is based on seven Big Ideas, which encompass core scientific principles, theories, and processes that cut across traditional boundaries and provide a broad way of thinking about the physical  world. The following are Big Ideas:  • Objects and systems have properties such as mass and charge.  Systems may have internal structure.  • Fields existing in space can be used to explain interactions.  • The interactions of an object with other objects can be described by forces.  • Interactions between systems can result in changes in those systems.  • Changes that occur as a result of interactions are constrained by conservation laws.  • Waves can transfer energy and momentum from one location to another without the permanent transfer of mass and serve as a mathematical model for the description of other phenomena.  • The mathematics of probability can be used to describe the behavior of complex systems and to interpret the behavior of quantum mechanical systems. | |

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| **Q Advanced Placement Physics C** | |
| **Course #** | 20034301,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Chemistry, physics, and must be enrolled in calculus. |
| **Credit** | 1 |
| This course will provide a college level course in physics and will prepare students to seek credit and/or appropriate placement in college physics. Unlike AP Physics B, this course will involve the students in calculus applications. To parallel college science courses that have a required laboratory section, it is recommended that this course be accompanied by or paired with Physics II Honors to insure sufficient time for the required laboratory experiences. | |
| **Students are required to take the Advanced Placement examination.** | |

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| **Principles of Technology I** | |
| **Course #** | 20036001,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Chemistry |
| **Credit** | 1 |
| This course is designed to offer a detailed study of the laws governing the interaction of matter, energy and forces. Topics typically studied in physics are included, with emphasis given to technological and social implications and interactions. Computer and lab bench applications will be featured. | |

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| **Principles of Technology II** | |
| **Course #** | 20036101,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Principles of Technology I |
| **Credit** | 1 |
| This course features a second-year look at concepts developed in Principles of Technology I. Topics will include robotics, computer assisted design (CAD) and manufacture (CAM), and energy control systems. | |

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| **Zoology** | |
| **Course #** | 20004101,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Biology, with a recommended average grade of C or better |
| **Credit** | 1 |
| This course will provide an in –depth study of the animal kingdom including terminology, cell structure and physiology, genetics, change and adaptation, taxonomy, invertebrate and vertebrate anatomy/physiology, animal behavior, reproduction and development, and ecological relationships. | |
| **This course is recommended as an elective course for 12th grade students.** | |

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| **Q Astronomy Solar/Galactic Honors** | |
| **Course #** | 20209101,2 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | None |
| **Credit** | 1 |
| The purpose of this course is to develop and apply concepts basic to the earth, its materials, processes, history, and environment in space. | |
| **This course is recommended as an elective course for 12th grade students.** | |

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| **SPECIAL COURSES OFFERED ONLY BY IB/PRE-IB MAGNET PROGRAMS** |

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| **Q Biology I - PRE IB** | |
| **Course #** | 20008005 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Acceptance into IB |
| **Credit** | 1 |
| This course is designed as a biological survey course. Laboratory experiments and research investigations are emphasized. Students will be evaluated by performance on tests, laboratory reports, class participation, and individual research investigations. In-depth study of the following topics will be included: scientific methods, taxonomy, cytology, genetics, botany, microbiology, zoology, ecology, human anatomy and physiology.  *Students are required to take the state Biology End-of-Course Exam.* | |

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| **Q Biology II/III - IB** | |
| **Course #** | 20008105 & 20008205 |
| **Grade Level** | 9-12 |
| **Length** | 1 year each |
| **Prerequisite** | Pre IB Biology |
| **Credit** | 1 or 2 |
| IB Biology covers a wide range of topics in three major areas: cell biology and biochemistry, genetics and human anatomy and physiology. First unit emphasizes relationships between cell organelles and vital processes such as respiration and photosynthesis. Genetics is approached from both the cell level and the molecular level. Similarities and uniqueness of design are both noted with respect to possible origins. Laboratory experience varies from dissections to operation of electrophoresis equipment.  (a) Higher Level: The biochemical base; control of the individual organism; interactions between organisms and their environment; diversity among living things; special problems relating to man.  (b) Subsidiary Level: Energy flow; the cell; Homeostasis; continuance of life; ecological and evolutionary biology. | |

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| **Q Chemistry I - PRE IB** | |
| **Course #** | 20038005 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Acceptance into IB |
| **Credit** | 1 |
| Areas of study include atomic theory and structure, periodic properties, qualitative and quantitative studies of reactions, bonding, gas laws, acid-base theory, kinetics, equilibria, and redox systems. Extensive laboratory work includes lab techniques, analysis and report writing. | |

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| **Q Chemistry II/III - IB** | |
| **Course #** | 20038105 & 20038205 |
| **Grade Level** | 9-12 |
| **Length** | 1 year each |
| **Prerequisite** | Pre IB Chemistry |
| **Credit** | 1 or 2 |
| Areas of study include chemical equilibrium, thermodynamics, reaction kinetics, Redox system, organic chemistry and electrochemistry.  (a) Higher Level: Atomic structure; bonding; kinetic theory of matter; kinetics; equilibria energies; periodicity; carbon chemistry; extension areas.  (b) Subsidiary Level: Atomic models; periodic system; chemical bonding; kinetic theory; energetics; kinetics; equilibrium structure and shape of molecules; properties of functional groups in molecules | |

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| **Q Physics I - Honors** | |
| **Course #** | 20033905 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Acceptance into IB |
| **Credit** | 1 |
| Various topics of mechanics including kinematics, composition and resolution of forces, torque, motion in two dimensions, work and energy relationships are covered first semester. The second semester includes wave properties, geometric optics, interference phenomena, electromagnetic spectrum, photoelectric effect, wave-particle concepts and the study of heat. Extensive lab work emphasizes manipulation, observation, planning, communication, interpretation, and analysis. Scientific method and problem solving are stressed. | |

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| **Q IB Physics II and III** | |
| **Course #** | 20038455 & 20038505 |
| **Grade Level** | 9-12 |
| **Length** | 1 year each |
| **Prerequisite** | Pre IB Physics |
| **Credit** | 1 or 2 |
| Areas of study continue those introduced in PIB Physics with greater depth. Plus:  (a) Higher Level: The course examines mechanics in greater depth including combinations of forces, motion in two dimensions, projectile, circular, rotary and simple harmonic motion, conservation of energy and momentum, and elastic/inelastic collisions. Problem solving and lab work are major course components.  (b) Subsidiary Level: The first semester covers topics in electricity and magnetism with appropriate lab work. The second semester comprises topics in modern physics including relativity, spectra and quantum mechanics, nuclear physics and high energy interactions. Problem solving and lab work are major course components. | |

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| **SPECIAL COURSES OFFERED ONLY by the Cambridge University**  **MAGNET PROGRAMS at**  **Clearwater, Dixie Hollins, and**  **Tarpon Springs High Schools** |

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| **Q AICE Environmental Management Science** | |
| **Course #** | 2001381 |
| **Grade Level** | 11-12 |
| **Length** | 1 year |
| **Prerequisite** | Acceptance into AICE |
| **Credit** | 1.0 |
| This AS syllabus covers environmental issues and their management, especially the human aspect. Through their studies, learners gain an understanding of environmental resources and their human exploitation, and the goal of sustainable environmental management. Learners also consider a range of case study material which can feature local, regional or global examples. Although Cambridge International AS Level Environmental Management extends and complements the relevant Cambridge O Level and Cambridge IGCSE syllabuses, learners do not need to have studied the subject before starting the course. | |

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| **Q AICE Marine Science I** | |
| **Course #** | 2002515 |
| **Grade Level** | 11-12 |
| **Length** | 1 year |
| **Prerequisite** | Acceptance into AICE |
| **Credit** | 1.0 |
| Cambridge International AS and A Level Marine Science provides a coherent and stimulating introduction to the science of the marine environment. The AS part of the course concentrates on the scientific study of the sea and its ecosystems, while the A Level part concentrates on human activities that depend on the sea and have an impact on it. No prior study at Cambridge IGCSE or Cambridge O Level is assumed. The emphasis throughout is on the understanding of concepts and the application of ideas to new contexts as well as on the acquisition of knowledge, and the course encourages creative thinking and problem-solving skills which are transferable to any future career path. It is expected that practical activities will underpin the teaching of the whole course, and learners may be asked about practical activities in examination questions, but there is no practical paper and no coursework. Cambridge International AS and A Level Marine Science can form part of an ideal subject combination for learners who want to study Marine Biology or Environmental Science at university or to follow a career in shipping, fisheries, tourism or aquaculture. | |

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| **Q Pre-AICE Biology** | |
| **Course #** | 20003220 |
| **Grade Level** | 9-12 |
| **Length** | 1 year |
| **Prerequisite** | Acceptance into Pre-AICE |
| **Credit** | 1 |
| This course is a challenging, concept-oriented and hands-on course designed to provide a strong foundation for AICE Biology. This course will teach students to better understand the technological world in which they live, and take an informed interest in science and scientific developments. Students will learn about the basic principles of biology through a mix of theoretical and practical studies. Students will also develop an understanding of the scientific skills useful in everyday life. As they progress, students will learn how science is studied and practiced, and become aware that the results of scientific research can have both good and bad effects on individuals, communities and the environment.  **Students are required to take the state Biology End-of-Course Exam.** | |

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| **Q AICE Biology 1 AS** | |
| **Course #** | 2000321 |
| **Grade Level** | 11-12 |
| **Length** | 1 year |
| **Prerequisite** | Acceptance Into AICE |
| **Credit** | 1.0 |
| Cambridge International AS and A Level Biology builds on the skills acquired at Cambridge IGCSE (or equivalent) level. The syllabus includes the main theoretical concepts which are fundamental to the subject, a section on some current applications of biology, and a strong emphasis on advanced practical skills. Practical skills are assessed in a timetabled practical examination. The emphasis throughout is on the understanding of concepts and the application of biology ideas in novel contexts as well as on the acquisition of knowledge. The course encourages creative thinking and problem-solving skills which are transferable to any future career path. Cambridge International AS and A Level Biology are ideal for learners who want to study biology or a wide variety of related subjects at university or to follow a career in science. Please note that the Scheme of Assessment has changed since 2005. | |

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| **Q Pre-AICE Chemistry** | |
| **Course #** | 2003372 |
| **Grade Level** | 9-10 |
| **Length** | 1 year |
| **Prerequisite** | Acceptance into PRE-AICE |
| **Credit** | 1 |
| As well as a subject focus, the IGCSE Chemistry syllabus enables students to better understand the technological world in which they live, and take an informed interest in science and scientific developments. Students learn about the basic principles of Chemistry through a mix of theoretical and practical studies. Students also develop an understanding of the scientific skills essential for further study at A Level, skills which are useful in everyday life. As they progress, students learn how science is studied and practiced, and become aware that the results of scientific research can have both good and bad effects on individuals, communities and the environment. | |

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| **Q AICE Chemistry I AS** | |
| **Course #** | 2003371 |
| **Grade Level** | 11-12 |
| **Length** | I year |
| **Prerequisite** | Acceptance into AICE |
| **Credit** | 1.0 |
| Cambridge International AS and A Level Chemistry builds on the skills acquired at Cambridge IGCSE (or equivalent) level. The syllabus includes the main theoretical concepts which are fundamental to the subject, a section on some current applications of chemistry, and a strong emphasis on advanced practical skills. Practical skills are assessed in a timetabled practical examination. The emphasis throughout is on the understanding of concepts and the application of chemistry ideas in novel contexts as well as on the acquisition of knowledge. The course encourages creative thinking and problem-solving skills which are transferable to any future career path. Cambridge International AS and A Level Chemistry are ideal for learners who want to study chemistry or a wide variety of related subjects at university or to follow a career in science. Please note that the Scheme of Assessment has changed since 2005. | |

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| **Q Pre-AICE Physics** | |
| **Course #** | 2003432 |
| **Grade Level** | 9-10 |
| **Length** | 1 year |
| **Prerequisite** | Acceptance into PRE-AICE |
| **Credit** | 1 |
| As well as a subject focus, the IGCSE Physics syllabus enables students to better understand the technological world in which they live, and take an informed interest in science and scientific developments. Students learn about the basic principles of Physics through a mix of theoretical and practical studies. Students also develop an understanding of the scientific skills essential for further study at A Level, skills which are useful in everyday life. As they progress, students learn how science is studied and practiced, and become aware that the results of scientific research can have both good and bad effects on individuals, communities and the environment. | |

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| **Explanation of Symbols** | |
| **Symbol** | **Explanation** |
| All of the high school science courses include labs. | |
| **Description: C:\Users\HOLLOWAYL\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Outlook\VFNRH0QY\ScreenHunter_09 Aug  26 12 44.gif** | The virtual symbol indicates this course is available in a virtual learning environment.  All Pinellas Virtual School (PVS) courses are aligned with the Next Generation Sunshine State Standards (NGSSS) and in the Board approved MS and HS Course Code Directories. |