

Royal St. George's College
Science, Grade 9, Academic (SNC1D)
Course Outline

Course Description

This course enables students to develop their understanding of basic concepts in biology, chemistry, earth and space science, and physics, and to relate science to technology, society, and the environment.

Throughout the course, students will develop their skills in the processes of scientific investigation. Students will acquire an understanding of scientific theories and conduct investigations related to sustainable ecosystems; atomic and molecular structures and the properties of elements and compounds; the study of the universe and its properties and components; and the principals of electricity.

Instructor: Jeff Enfield, Julie Girvan, Phil Spacie

Textbook: *Science Perspectives 9*; Nelson, 2010

Curriculum: The Ontario Curriculum, Grades 9 and 10: Science, 2008 (revised)

Course Content:

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|------------------|---|-------------------------------------|
| Unit I: | Biology: Sustainable Ecosystems <ul style="list-style-type: none"> • <i>Earth's four spheres</i> • <i>Photosynthesis & cellular respiration</i> • <i>Energy flow through ecosystems</i> • <i>Matter cycles in ecosystems</i> • <i>Human influence on ecosystems</i> • <i>Biotic and abiotic components</i> • <i>Equilibrium of ecosystems</i> • <i>Biodiversity</i> • <i>Designed ecosystems</i> | 25 hrs <i>(Sept. – Oct.)</i> |
| Unit II: | Chemistry: Atoms, Elements & Compounds <ul style="list-style-type: none"> • <i>Particle theory of matter</i> • <i>Chemical & physical changes/properties</i> • <i>Mixtures & pure substance</i> • <i>Atomic theory & atomic structure</i> • <i>Periodic table</i> • <i>Chemical bonding</i> | 35 hrs <i>(Oct. – Dec.)</i> |
| Unit III: | Physics: The Characteristics of Electricity <ul style="list-style-type: none"> • <i>Electrostatics</i> • <i>Current electricity</i> • <i>Ohm's Law</i> • <i>Parallel and series circuits</i> • <i>Electricity generation & the environment</i> | 25 hrs <i>(Dec. – Mar.)</i> |
| Unit IV: | Earth & Space Science: The Study of the Universe <ul style="list-style-type: none"> • <i>Observing the night sky</i> • <i>History of the solar system model</i> • <i>Formation of the solar system</i> • <i>Earth shape and motions</i> • <i>Moon & its motions</i> • <i>Stellar measurements and star types</i> • <i>Lifecycle of stars</i> • <i>Human space exploration</i> | 25 hrs <i>(Mar. – May)</i> |
| <i>Total:</i> | | <i>110 hrs</i> |

Homework:

Regular completion of homework is the key to success in this course. While bigger homework assignments will be evaluated, most assigned homework will not. Random homework checks will be performed to monitor the completion of homework. Homework check records will be documented but not included in the student's grade.

Evaluation:

Evaluation methods will include unit tests, mini-tests, laboratory reports including data analysis, research projects including oral and written communication, group work, and homework assignments.

There will be a final exam that will account for 30% of the final grade in the course.

Throughout the year and within the final exam, the course will be evaluated based on the following categories of learning: *knowledge, inquiry/problem solving, application, and communication*

Evaluation Summary:

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|-------------------------|------------|
| Unit Tests: | 25% |
| Mini-Tests: | 15% |
| Projects & Assignments: | 15% |
| Laboratory Assignments: | 15% |
| <i>Final Exam:</i> | <i>30%</i> |

What to bring to class:

1. Healthy computer
2. Binder
3. Uniform
4. Writing utensil(s)
5. No food is permitted. Please attempt to come to class with a snack in your belly.
6. No backpacks or bags are permitted. Please only bring the items you need for class.

Expectations

1. All assigned work is to be completed and handed in ON TIME.
 - a. Late work will be subject to a penalty of a 5% deduction per day up a maximum of 20%.
 - b. After an assignment has been graded and returned to students, any outstanding assignment receives a grade of zero.
2. All tests & mini-tests are compulsory and are included in the overall grade.
3. Any assignments/tests/labs missed must be completed on an arranged time with the instructor.
4. Appropriate behaviour and safety procedures must be used in the lab at all times. Failure to do so may result in your removal from the classroom and a mark of zero on the corresponding lab.
5. Whenever necessary, extra help is available at a time to be discussed with the teacher.
6. Students must closely monitor the [SSD Website](#) for upcoming or missed events/assignments/tests/etc.