

**Course Syllabus – SNC2D**

Science, Grade 10 Academic

**Teachers:** Mr. Kaiser  
dankaiser.rchs@gmail.com

Mr. Hamilton  
ahamilton@rchs.on.ca

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**Description**

This course takes a look at *Tissues, Organs, and Systems of Living Things*, with an emphasis on the social and ethical implications of medical developments. The Physics unit on *Light and Geometric Optics* will explore how we use lenses and mirrors to manipulate the characteristics and properties of light, and how society benefits from the wide range of optical devices and technologies that have been developed.

In *Chemical Reactions*, we look at how matter at the most basic level is organized and reacts; as well as the impact of various chemical technologies on the environment, both negative and beneficial.

In the Earth and Space Sciences unit, we will investigate the factors that influence global *Climate Change*, while learning about the systems and processes that produce our dynamic climate. The impacts of climate change, and our possible role in reducing this impact, will also be considered, along with a variety of Christian perspectives on the issue.

God's sovereignty and care for creation are evident in all of the areas studied in this course. We will consider how humanity's knowledge, in submission to God, can be used to glorify Him.

**Outline of Course Content**

Topic	Text reference
Unit 1: Biology – Tissues, Organs, and Systems	Ch. 1, 2, 3
Unit 2: Chemistry – Chemical Reactions	Ch. 4, 5, 6
Unit 3: Earth and Space Science – Climate Change	Ch. 7, 8, 9
Unit 4: Physics – Light and Geometric Optics	Ch. 10, 11, 12

**Text:** ON Science 10, T. Dickinson et al, McGraw-Hill Ryerson, 2009.  
*Replacement cost if lost or damaged: \$65*

**Course Materials**

- 3-ring binder with plenty of loose-leaf lined paper and graph paper, and some dividers
- A supply of pens & pencils; eraser, ruler
- Calculator (two-line recommended; only non-graphing allowed on tests/exams)

## Assessment As, Of, and For Learning

- Assessment *FOR* learning are activities that help you learn course concepts while also informing you and your teacher of how you are progressing in the course – without counting towards your final grade (homework, quiz, observation/discussion, worksheet...).
- Assessment *AS* learning (eg. self and peer assessment) are activities that cause you to reflect on your own (or someone else's) learning, and to act on your thinking to improve your learning.
- Assessment *OF* learning is the course work (tests, assignments, labs ...) that demonstrates formally what you have learned in the course. This is evaluated by your teacher and will make up 70% of your final grade. Your final exam will be worth 30%.

Evaluation	Categories	Weighting
Term Work	Knowledge / Understanding	25 %
	Thinking / Problem Solving	15 %
	Communication	15 %
	Application	15 %
Final Evaluation	Final Exam	30%

## Absences and Late Assignments

- Talk to the teacher if you know you will be away for a test or to negotiate an extension on an assignment. Tests missed due to skipping will be recorded as zero. Tests missed due to legitimate absence will be written on the return of the student during lunch or after school.
- **Paper copies** of assignments are due **on my desk** at the **beginning of class** on their **due date**. Late assignments will be deducted 10% per day and the student assigned to Study Hall until complete.

## Student Expectations

Active class participation and regular completion of assignments, labs, and homework are important tools for success in this course. Don't hesitate to ask questions (though I may not always have answers).

## Classroom Rules

1. Bring ALL books/materials to class AND take them all with you when you leave.
2. Be in your assigned seat and ready to work when the bell rings.
3. Treat each person in the room with dignity and respect (me and each other).
4. Follow directions the first time they're given.
5. Follow all procedures and policies as outlined in the RCHS student handbook.

## Classroom Procedures

- Go to the bathroom before class. Do not expect to be allowed to go during class.
- Keep a neat and organized notebook. Notes should have dates and should be in order. **You** are responsible for getting any notes or assignments missed when you are absent. Keep tests and quizzes to study from.
- Complete your homework on time with proper headings (name, date, page). Homework will be assigned and checked regularly. Repeated failure to complete homework will result in study hall.
- The bell does not dismiss you – the teacher does. Stay in your seat until you are told you may go.

## **SNC2D – Course Overall Expectations**

### *A. SCIENTIFIC INVESTIGATION SKILLS AND CAREER EXPLORATION*

Throughout this course, students will:

1. demonstrate scientific investigation skills (related to both inquiry and research) in the four areas of skills (initiating and planning, performing and recording, analysing and interpreting, and communicating);
2. identify and describe a variety of careers related to the fields of science under study, and identify scientists, including Canadians, who have made contributions to those fields.

### *B. BIOLOGY: TISSUES, ORGANS, AND SYSTEMS OF LIVING THINGS*

By the end of this course, students will:

1. evaluate the importance of medical and other technological developments related to systems biology, and analyse their societal and ethical implications;
2. investigate cell division, cell specialization, organs, and systems in animals and plants, using research and inquiry skills, including various laboratory techniques;
3. demonstrate an understanding of the hierarchical organization of cells, from tissues, to organs, to systems in animals and plants.

### *C. CHEMISTRY: CHEMICAL REACTIONS*

By the end of this course, students will:

1. analyse a variety of safety and environmental issues associated with chemical reactions, including the ways in which chemical reactions can be applied to address environmental challenges;
2. investigate, through inquiry, the characteristics of chemical reactions;
3. demonstrate an understanding of the general principles of chemical reactions, and various ways to represent them.

### *D. EARTH AND SPACE SCIENCE: CLIMATE CHANGE*

By the end of this course, students will:

1. analyse some of the effects of climate change around the world, and assess the effectiveness of initiatives that attempt to address the issue of climate change;
2. investigate various natural and human factors that influence Earth's climate and climate change;
3. demonstrate an understanding of natural and human factors, including the greenhouse effect, that influence Earth's climate and contribute to climate change.

### *E. PHYSICS: LIGHT AND GEOMETRIC OPTICS*

By the end of this course, students will:

1. evaluate the effectiveness of technological devices and procedures designed to make use of light, and assess their social benefits;
2. investigate, through inquiry, the properties of light, and predict its behaviour, particularly with respect to reflection in plane and curved mirrors and refraction in converging lenses;
3. demonstrate an understanding of various characteristics and properties of light, particularly with respect to reflection in mirrors and reflection and refraction in lenses.

**LEARNING SKILLS AND WORK HABITS IN GRADES 1 TO 12**

<b>Learning Skills and Work Habits</b>	<b>Sample Behaviours</b>
Responsibility	<p>The student:</p> <ul style="list-style-type: none"> <li>• fulfils responsibilities and commitments within the learning environment;</li> <li>• completes and submits class work, homework, and assignments according to agreed-upon timelines;</li> <li>• takes responsibility for and manages own behaviour.</li> </ul>
Organization	<p>The student:</p> <ul style="list-style-type: none"> <li>• devises and follows a plan and process for completing work and tasks;</li> <li>• establishes priorities and manages time to complete tasks and achieve goals;</li> <li>• identifies, gathers, evaluates, and uses information, technology, and resources to complete tasks.</li> </ul>
Independent Work	<p>The student:</p> <ul style="list-style-type: none"> <li>• independently monitors, assesses, and revises plans to complete tasks and meet goals;</li> <li>• uses class time appropriately to complete tasks;</li> <li>• follows instructions with minimal supervision.</li> </ul>
Collaboration	<p>The student:</p> <ul style="list-style-type: none"> <li>• accepts various roles and an equitable share of work in a group;</li> <li>• responds positively to the ideas, opinions, values, and traditions of others;</li> <li>• builds healthy peer-to-peer relationships through personal and media-assisted interactions;</li> <li>• works with others to resolve conflicts and build consensus to achieve group goals;</li> <li>• shares information, resources, and expertise and promotes critical thinking to solve problems and make decisions.</li> </ul>
Initiative	<p>The student:</p> <ul style="list-style-type: none"> <li>• looks for and acts on new ideas and opportunities for learning;</li> <li>• demonstrates the capacity for innovation and a willingness to take risks;</li> <li>• demonstrates curiosity and interest in learning;</li> <li>• approaches new tasks with a positive attitude;</li> <li>• recognizes and advocates appropriately for the rights of self and others.</li> </ul>
Self-regulation	<p>The student:</p> <ul style="list-style-type: none"> <li>• sets own individual goals and monitors progress towards achieving them;</li> <li>• seeks clarification or assistance when needed;</li> <li>• assesses and reflects critically on own strengths, needs, and interests;</li> <li>• identifies learning opportunities, choices, and strategies to meet personal needs and achieve goals;</li> <li>• perseveres and makes an effort when responding to challenges.</li> </ul>

