

Level of Instruction: Senior High

Curriculum Overview:

Earth Systems 3209 is an academic provincial science course that aims to develop scientific literacy. Scientific literacy is an evolving combination of the science related attitudes, skills, and knowledge students need to develop inquiry, problem-solving, and decision-making abilities; to become lifelong learners; and to maintain a sense of wonder about the world around them.

NOTE: If a student receives 80% or higher on the Earth Systems 3209 public exam, MUN will give credit for Earth Sciences 1000. If a student receives between 70 and 79% on the public, then the student will have to write a multiple choice exam. MUN will give a student credit for Earth Sciences 1000 if a student receives 70% or higher on that multiple choice exam.

Authorized Learning Resource:

Earth: An Introduction to Physical Geology (Pearson Prentice Hall)
http://www.pearsoned.ca/highered/divisions/virtual_tours/tarbuck/

Unit Plan:

Earth Systems 3209 is composed of five units that contain 7 core labs and 5 core STSE's in total. All schools are expected to complete these and adhere to the sequence of units outlined below.

Unit 1: Introduction to Earth Science

Core STSE 1: *The Search for other Solar Systems*

Unit 2: Historical Geology

Core Lab 1: *Interpreting Historical Geologic Events*

Core Lab 2: *Estimating Dinosaur Size and Speed from Trackways*

Core STSE 2: *Labrador Zircons and their Link to Radiometric Dating and Absolute Time*

Unit 3: Earth Materials

Core Lab 3: *Mineral Identification and Specific Gravity*

Core Lab 4: *Igneous, Sedimentary and Metamorphic Rocks*

Core STSE 3: *Diamonds - Their Formation and Properties*

Unit 4: The Forces within Earth

Core Lab 5: *Locating an Earthquake Epicentre*

Core STSE 4: *The Geology of Newfoundland*

Unit 5: Earth Resources: Real-Life Applications

Core Lab 6: *Geologic Mapping and Cross-Sections*

Core Lab 7: *Seismic Reflection Imaging*

Core STSE 5: *Well Logging*

Assessment:

Assessment in this course is governed by the *Assessment and Evaluation Policy* of the Eastern School District. This policy is located at <http://www.esdnl.ca/about/policies/esd/IL.pdf>. The regulations are located at

<http://www.esdnl.ca/aboutesd/policies/regulations.jsp?cat=I&code=IL>

Assessment is intended to inform instruction, provide feedback to students, and meet the needs of diverse learners. It is used for the purposes of grading, certifying, and promoting students. All assessments should be outcome-based and designed to test students' basic knowledge of content, their understanding and ability to apply content, and ability to synthesize and problem solve. Assessments should provide equal opportunity for all students according to their abilities, needs, and interests. As a result, teachers make adaptations to accommodate the diverse range of learners in their classes.

Assessment and Evaluation Plan for Earth Systems 3209:

Evaluation is the process of analysing, reflecting upon, and summarizing assessment information, and making judgments or decisions based upon the information gathered. All schools are expected to adhere to the evaluation scheme below for Earth Systems 3209.

Tests/Quizzes	20%
Performance Assessment	15%
Midyear Examination	15%
Public Examination	50%

Note: All evidence of learning shall be considered when determining a student's final grade. Averaging shall not be used as a sole indicator of a student's level of attainment of the course outcomes.

Midyear Examination:

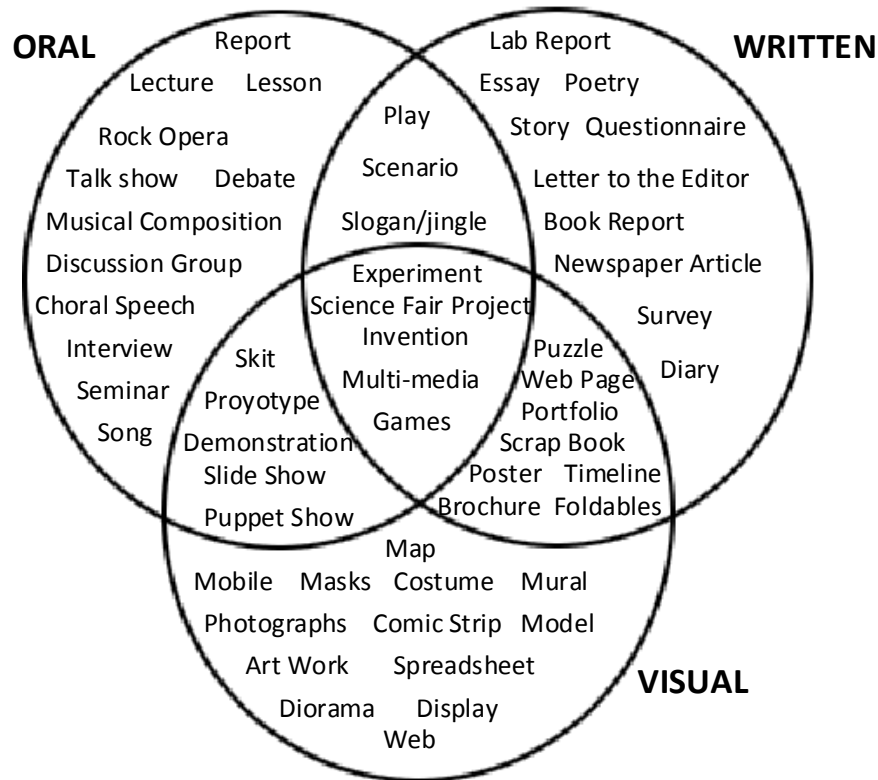
The mid-year examination tests all course outcomes to that point. It will include selected response (multiple-choice) and constructed response items. The examination is designed to be completed in a 2-hour time period.

Final Examination:

The final provincial (public) examination in Earth Systems 3209 is composed of two parts and is designed to be completed in a 3 hour time period. Part I contains 60 selected response questions (multiple choice) that measure students' achievement at all levels of cognitive learning. Part II contains constructed response questions that measure students' achievement only at the higher levels of cognitive learning.

Performance Assessment:

Performance assessments should emphasize project-based learning and require students to show what they can do by using a wide variety of activities that permit students to have their learning styles addressed. Performance assessment should also include student self-assessment. Some suggestions are included in the diagram below.



Source: K. O'Connor, *The Mindful School: How to Grade for Learning* (Skylight Publications, 1999)

Rubrics are used to inform and measure learning during performance assessments. A rubric defines the expectations to achieve at a certain level. It also provides information about how well students performed an activity, and it provides a clear indication of what students need to accomplish in the future to better their performance. Links to samples of rubrics for different types of performance assessments can be found on

<http://www.esdnl.ca/programs/rubricresources/>. The Assessment tab of the Teacher Resource contains rubrics and checklists.

Resource Links:

Department of Education Curriculum Guide for Earth Systems 3209

<http://www.ed.gov.nl.ca/edu/k12/curriculum/documents/science/highschool.html#earth3209>

Science Resources and Support Documents - Senior High

<http://www.ed.gov.nl.ca/edu/k12/curriculum/documents/science/highschool.html>