

Geology 12 Course Outline 2017

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Text: The Changing Earth: *Exploring Geology and Evolution*

Lab Text: Laboratory Manual in Physical Geology

Website: <http://geomodderfied.weebly.com/> or <http://geomodderfied.weebly.com/geology-12.html>

Introduction:

Science helps us to understand the world around us: developing our international mindedness and giving us the opportunity to better understand our community, and environment. Throughout the course every effort will be made to show how Science connects to other areas of study and life in general.

Geology 12 is a course designed to familiarize students with the geologic world. Students will be given the opportunity to apply their knowledge of geologic processes to interpret geologic situations from both a global and local perspective.

Students will be encouraged to communicate their ideas and consider the thoughts and opinions of others. Students will also work to develop themselves as communicating, caring, inquiring, risk taking, knowledgeable, reflective, open-minded, principled, balanced, and thinking individuals.

Aims and Objectives:

This is aims to be an Inquiry based course meant to cover the Big Ideas, Content, and Curricular Competencies (course curricula) set out by the BC Ministry of Education for Geology 12 (https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/10-12/science/en_s_12_geo_elab.pdf) while concurrently addressing and developing the Core Competencies (cross curricula skills) described by the same Ministry for all subjects and grades K-12 (<https://curriculum.gov.bc.ca/competencies>).

Methodology

Though primarily taking a Concept-Based Inquiry approach, various methods of learning will be used throughout the course, such as: Inquiry-based learning, Concept-Based learning, Resource-based learning, Problem-based learning, Project-based learning, Place-based Learning, Cooperative learning, and Collaborative Learning.

Curricular Competencies:

Curricular Competencies will be a major focus of development throughout this course as Scientific mindset, methodology and skill development will be valued and weighted as or more important than the actual content. Assessment and evaluation will reflect this value placement.

Curricular Competencies : <i>Questioning and predicting, Planning and conducting</i>
Curricular Competencies : <i>Processing and analyzing data and information, Evaluating</i>
Curricular Competencies : <i>Applying and innovating, Communicating</i>

Core Competencies:

Throughout this Inquiry course, we will be using various approaches to learning to address the [Core Competencies](#), these include: using cooperative learning in triads comprised of heterogeneously-matched students, working collaboratively with peers, communicating in Scientific language - orally and in written form on mini assignments, projects, presentations and lab reports, considering different aspects of scientific research and technology, reflecting and self-evaluating/ co-evaluating on their learning, and group dynamics problem solving.

Personal and Social	<ol style="list-style-type: none">1. <i>Personal Awareness and Responsibility</i>2. <i>Social Responsibility</i>3. <i>Positive Personal and Cultural Identity</i>
Communication	<ol style="list-style-type: none">1. Connect and engage with others (to share and develop ideas)2. Acquire, interpret, and present information (includes inquiries)3. Collaborate to plan, carry out, and review constructions and activities4. Explain/recount and reflect on experiences and accomplishments
Thinking	<ol style="list-style-type: none">1. <i>Critical thinking</i>2. <i>Creative Thinking</i>

Concept Based Learning through Big Ideas and Statements of Inquiry:

The concept based inquiry approach recognizes the integrity of subject disciplines, but learning is richer and deeper when conceptually driven. Building a deep understanding requires meaningful reflection beyond the discipline and classroom. Concept based Inquiry uses a fluid, differentiated model to encourage learning beyond the subject and extend thought and reflection toward global context. We will be using the Big Ideas and Statements of inquiry as a context to drive inquiry toward meaningful engagement and understanding of the Curricular Competencies.

The global contexts and key/ related concepts will be addressed in Geology 12 by exploring the following Big Ideas and their associated Statements of Inquiry:

Content:

The course is broken down into five specific units based on the prescribed BIG IDEAS (not in this order):

Big Ideas	Statements of Inquiry
Earth Materials	Minerals and rocks are the foundation of the rock cycle and can be used as resources that drive industry and global economies.
Geologic Time	Geologic time is preserved in Earth's rock record as fossils and reflects profound changes in the history of life on Earth.
Plate Tectonic Theory	Tectonic plates are in constant motion and their interactions produce earthquakes, volcanoes, and characteristic landforms on the Earth's surface
Deformation and Mapping	Geological maps and models are tools used to represent surface features and subsurface structures.
Surface Processes and the Hydrosphere	Weathering and erosion processes shape landscapes through the interaction of the geosphere and hydrosphere.

Assessment and Evaluation

During the semester you will be assessed using variety of formative and summative assessments.

Tests or summative assessments will generally be at the end of each unit and will last a full class period. Short quizzes will be given periodically, and will last about 15-20 minutes. You will be told about all tests and quizzes in advance.

Summative (projects, labs, reports, presentations, etc.) and formative assignments will be given ample notification and time for completion, and must be handed in on time. Any assignments that are handed in after marked assignments have been returned to the class are considered overdue and must be completed during FLEX with penalty for time frame infraction. Intellectual dishonesty (plagiarism, cheating etc) will result in a mark of zero for the assignment or test, and possibly more serious consequences. Please read about intellectual dishonesty in your student agenda book.

Methods of assessment:

Formative Assessment: Students will have frequent mini quizzes/assignments to demonstrate what they understand versus what they still need help with. Students will also have class work and homework that they will correct with classmates and the teacher. Students will be encouraged to discuss their thinking about the various problems and topics covered in class.

- Use to check students' progress
- The information gained guides the next steps in instruction and helps consider the additional learning opportunities needed to ensure success
- Formative assessment information fed forward into an instructional model that allows for responsiveness to student need

Summative Assessment: At the end of each section, at midterm, and at the end of the course students will engage in summative assessment tasks, ie. projects, reports, presentations, write tests or exams. Students will also partake in individual and group projects and do self-assessments of their learning. Students will be required to demonstrate their knowledge, their understanding, applications of skills and concepts in a manner that is clear and organized in all the above mentioned forms of summative assessment.

- Summative assessments provide information about the attainment of knowledge as well as skill progression
- Results are assessed and evaluated and will translate to an overall level of achievement by both teacher and student
- Self-evaluation and co-evaluation will be driven by evidence-based rubric alignment and communication, ideally this will lead to *self-regulation* and *self-determination*
(Personal Awareness and Responsibility)
- The goal is to evaluate student learning at the end of an instructional unit by comparing it to the Pre-set front-loaded ministry based standards
- All grading will be based on rubrics in relation to the Ministry mandates.

Evaluation Guide for Geology 12:

Knowing and Understanding	Curricular CONTENT
Inquiring and Designing	Curricular Competencies : <i>Questioning and predicting, Planning and conducting</i>
Processing and Evaluating	Curricular Competencies : <i>Processing and analyzing data and information, Evaluating</i>
Reflecting on the Impacts of Science	Curricular Competencies : <i>Applying and innovating, Communicating</i>

Attendance

You are expected to attend class on time every day. If you are expecting to be absent for a particular class please let me know ahead of time so that I can give you the work you will miss. If you are absent due to illness you must phone the school to inform me (and all your teachers). You will be expected to provide a note explaining your absences.

If you are late or absent on the day of a test, quiz or assignment you must have a valid reason. You must present your note or have a parent call BEFORE the test takes place. Without a valid reason you will receive a zero on that assignment or test. Tests or quizzes must be written on the day you return to school (on your own time, not during class).

When you miss a class you are still responsible for the work. Please contact a classmate to determine what you have missed.

Classmate's name: _____ Phone #: _____

E-mail: _____

Classmate's name: _____ Phone #: _____

E-mail: _____

Supplies

Please come prepared to every class with a pencil, pen, eraser, ruler, calculator (no cell phones), loose-leafed lined paper, and binder.

Technology in the Classroom

You are welcome to bring laptops/tablets to class to take notes, as long as you remain on task and are not disruptive. However, music players and cellular phones are NOT permitted for use in class, unless otherwise specified for task or assignment.

Extra Help

I am available before school, during FLEX, and after school almost every day. Please see me in my office (Science Prep Room) or send me an e-mail to make an appointment.

Classroom Expectations

Respect, it's that simple. Respect each other, respect your teacher and respect yourself. Use common sense and everything will be great.

☆ *By following these guidelines, you should be able to do well in this course, and as a bonus, you will enjoy it too! Good Luck!* ☆