Geological Science Syllabus – Dual credit with Oakton College

2011-2012 school year

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1) *Course goals and objectives*:
This year long course focuses on Earth's physical and geologic systems, processes and natural resources, and on the impact they have on humans, and the impact humans have on the environment. Included will be studies of the following: earthquakes; volcanoes; plate tectonics; minerals and rocks; global climate disruption; glaciation; weathering and erosion; groundwater; mapping and imaging the earth's surface; sedimentology and fluvial processes; structural geology; and geologic time.

Students will be expected to apply concepts and skills learned in the Chemistry I / Physics I sequence as well as in Biology I. **Students who register for the dual credit course with Oakton College will earn 4 semester hours of college science laboratory credit.**

Geological Science is a laboratory based class. Students will be exposed to different methods of teaching including: cooperative learning groupings; on-line activities; virtual labs; class discussion; small group study; blogs; small group presentation; laboratory investigations; research projects; multi-media presentations and projects; extensive use of internet based materials and technologies including Google docs collaborative work; and geologic investigations using GIS and GPS. The course includes two all day field work experiences and several on-campus field work experiences.

2) *Earth, an introduction to Physical Geology*, 10th edition, Tarbuck and Lutgens, 2011

3) *Required Materials:*

textbook: *Earth, 10th edition*
Flash drive – 1GB minimum
3-ring binder, 2 inch
10 dividers

4) *Units of study:*

Intro to Geology
Plate Tectonics
Deformation & Mountain Building
Earthquakes & Volcanoes
Matter & Mineral Resources
Igneous Rocks
Volcanic Activity
Mapping & Remote sensing
Weathering, Mass Wasting, Erosion & Soils
Sedimentary & Metamorphic Rocks
Geologic Time
Groundwater
Running Water
Glaciers
Climate Change / Climate Disruption

5) *Grading (approximate only)*

Type	% of Quarter Grade
Summative assessments	70%
Formative assessments	10%
Homework, Daily work	20%
Final exam	15% of semester grade

Grades will be updated daily in most cases and are available through the parent portal. Information regarding missing assignments, absences and tardies is also available on the parent portal.
Details of assignments are available on the class Google site at:

http://sites.google.com/a/maine207.org/geology/

Grading:

- ⇒ The importance of Summative assessments – Summative assessments include: exams, tests, projects, lab assessments, and other work performed to demonstrate mastery. Because you will have many opportunities to practice what you have learned through formative assessments, summative assessments will make-up the largest portion of your grade for the course. The best way to prepare for summative assessments is to review the learning objectives for the unit.
- ⇒ There will be an exam at or near the end of each quarter.
- ⇒ There will be at least one summative assessment for each unit of study.
- ⇒ Students may request a retake on quizzes or tests. To be eligible the student must meet with the teacher to discuss a study plan, and then meet with the teacher again before retaking the exam to demonstrate that they are prepared.
- ⇒ If you do not earn at least a 70% on a summative assessment you will be required to retake the assessment. Your parents will be contacted and be invited to sit in on a meeting to plan for the retake. All retakes of exams will be alternate versions.
- ⇒ Formative assessments and homework – You are expected to complete all assignments. Each of the learning objectives for each unit will be covered either in class, on homework, or both. Formative assessments allow you to practice and deepen your understanding and ability to apply what you are learning.

Expectations:

- ⇒ You are here to better yourself, whether that means preparing for college or for a job. The more diverse your knowledge, the better off you will be.
- ⇒ You will show respect for your classmates, teacher and surroundings.
- ⇒ You will show respect for yourself. Give yourself the best chance to succeed by doing your work in a timely fashion and always giving your best effort.
- ⇒ You will be held accountable for your actions.

Attendance

- ⇒ All attendance policies of the school will be strictly adhered to.
- ⇒ If you are absent it is YOUR responsibility to determine what you missed and make up the work.
- ⇒ Class tardies will result in detentions being assigned.

Homework

- ⇒ All homework will be listed on the course Google calendar. The course Google calendar is posted on the course webpage and embedded in your ePortfolio site.

http://sites.google.com/a/maine207.org/geology

How to contact the teacher:

- ⇒ during office hours, before or after school in my office (room 107) or by appointment
- ⇒ e-mail: aawad@maine207.org

Students are expected to complete all tests and assignments honestly and will not collaborate in dishonest actions. Students will not give or accept answers or assignments unless directed to by the teacher. Students caught cheating or plagiarizing will be subject to discipline as stated in the Student Handbook.

For the purposes of earning Oakton College credit the following information is important:

All Maine East Geology students are expected to complete the application process for Oakton Community College during the second quarter of the school year. This process includes paying the $25.00 application fee. Following acceptance, students will maintain a minimum of a "B" grade in the class to remain eligible to earn credit at Oakton College during the spring 2011 semester. Students who register for the dual credit course at Oakton during the spring 2011 semester will earn 4 credit hours of college credit at Oakton College. The course grade will be a blended grade made up of the semester 1 and semester 2 Maine East High School Geology course grades. No registration fees or other course fees are required beyond the $25.00 application fee. College credit earned through this program will be shown on the student's Oakton College transcript.

I. Oakton College course code and credit information:

Course Prefix	Course Number	Course Name	Credit	Lecture	Lab
EAS	101	Physical Geology	4	3	3

II. Oakton College Prerequisites:
None

III. Oakton College Course Description:
Course introduces major physical and chemical processes that operate to produce Earth's structural environment. Content includes examination of dynamics of Earth's rock and water cycles, examination of some other geologic features of the moon or one of the other planetary bodies in the solar system. Focus is on sea-floor spreading, plate tectonics and underlying causes that generate physical features of our world.

IV. Learning Objectives:
After successfully completing this course, a student should be able to:

A) Identify and define problems of a geologic nature, construct hypotheses, as well as, gather, analyze, and interpret geologic data and information. Further, the student will be able to effectively communicate findings in writing and in speech.

B) Differentiate between geologic facts and opinions as relating to common misconceptions about the operation of various geologic processes.

C) Differentiate between mineral and rock samples based on simple diagnostic properties of those samples.

D) Explain how the traditional rock cycle has been reinterpreted on the basis of the plate tectonics and sea floor spreading.

E) Determine the magnitude and location of an earthquake using seismographic data.

F) Describe the basic topographic features on the ocean floor resulting from sea floor spreading.

G) Discuss, within a historical context, the evolution of the theory of plate tectonics.

H) Explain how plate interactions result in earthquake activity, volcanism, and mountain building.

I) Read a geologic map.

J) Construct and read a topographic map.

K) Explain the water cycle.

L) Differentiate among landscapes in varying stages of development in arid, glacial, and fluvial settings.

M) Recognize physical features associated with emergent, submergent, and static coastlines.

N) Demonstrate an ability to work effectively with individuals of diverse backgrounds, both individually and in teams.

V. The Oakton College Academic Integrity policy:

Students and employees at Oakton Community College are required to demonstrate academic integrity and follow Oakton's Code of Academic Conduct. This code prohibits:

- cheating,
- plagiarism (turning in work not written by you, or lacking proper citation),
- falsification and fabrication (lying or distorting the truth),
- helping others to cheat,
- unauthorized changes on official documents,
- pretending to be someone else or having someone else pretend to be you,
- making or accepting bribes, special favors, or threats, and
- any other behavior that violates academic integrity.

There are serious consequences to violations of the academic integrity policy. Oakton's policies and procedures provide students a fair hearing if a complaint is made against you. If you are found to have violated the policy, the minimum penalty is failure on the assignment and, a disciplinary record will be established and kept on file in the office of the Vice President for Student Affairs for a period of 3 years.

Details of the Code of Academic Conduct can be found in the Oakton College Student Handbook.