**GEOL 101: Introduction to Geological Sciences**

***\*\*Online Hybrid\*\****

Cascadia Community College – Spring 2009

Lab: Mondays 9-10:40

Room CC1 351

Instructor: John VanLeer



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**Course Description:** Students will study the structure of the solid Earth and the physical processes which produce change. The class will stress environmental concerns as they relate to geology. Recent discoveries and observational techniques will be discussed, and students will apply geologic concepts in laboratory activities and simulations and take part in field investigations. Prerequisite(s): Completion of Math 075 with a grade of 2.0 or higher. (LAB)

**Course Overview:** Introduction to Geological Sciences is an introductory college level science course designed to enlighten students as to the Earth’s physical processes that arrange material and energy. They will, in turn, use that understanding to interpret the geologic past, and evaluate current impacts and future changes to our Earth. Students will use scientific methodologies, contemporary field techniques, and critical thinking to understand the changing landscape around them. Of particular concern will be the relationship between geology and humans. Students will study how geologic hazards affect human quality of life, how geology plays an important role in the world economy, and how human impacts combined with geologic processes are affecting our environment.

Students should expect to immerse themselves in activities and inquiries that will allow them to gather scientific information directly related to the topics of study. They will read, write, correspond, and speak regularly. They will work individually and collaboratively. Students will become enlightened in all aspects of the environment in which they live. Students will develop a sense of pride in their new understanding and a feeling of community with all members of the class. That combination of intellectual pride and community will make Introduction to Geological Sciences both an enjoyable and memorable component of a lifetime of learning.

**Text and Materials:**

***Introduction to Environmental Geology***, by Edward Keller, 4th ed.

* Portfolio folder
* Calculator



**Learning Outcomes:** As you are probably already aware, all of Cascadia’s courses are designed with four governing outcomes: Learn Actively; Think Critically, Creatively, and Reflectively; Communicate with Clarity and Originality; and Interact in Diverse and Complex Environments. These outcomes are woven throughout the class, and are offered in the following statements. Students will:

* understand how scientists gather evidence and develop theories. They will use this understanding to compare and contrast models used for understanding Earth processes active both in the past and present.
* apply those models to explain how human and non-human influence has historically and is currently changing the Earth and its systems.
* actively inquire as to the validity of these models and theories by gathering and analyzing scientific data obtained in the field and laboratory, and using satellite provided visualizations.
* work individually and collaboratively to critically evaluate and discuss all evidence and determine how it pertains to currently acceptable models and theories.
* extrapolate current understanding to develop new hypotheses.
* communicate their findings using oral, written, and graphic communication with the assistance of a variety of contemporary technological resources.

**Academic Success:** The best way to succeed in this class is to log on to Blackboard frequently and participate with vigor. Keep track of readings and assignments. INTERACT WITH YOUR COHORT MEMBERS. Ask them questions, provide feedback, have informal conversations. COMMUNICATE WITH THE INSTRUCTOR. Do not hesitate to ask for clarification. DO NOT FALL BEHIND. Catching up is far more difficult than maintaining your progress. NEVER MISS A LAB. Labs are our only chance to interact in person, and making up labs is difficult to impossible. ENJOY THE CLASS. This course is designed to make material interesting and relevant to your world. Relax, learn, and have a good time.



## Classroom Dignity: A classroom must be a safe and comfortable place for students to learn. This applies to a traditional classroom as well as a virtual classroom. As a result, the instructor and the students must respect each other’s individual differences whether they be cultural, racial, sexual, intellectual, physical, or of any other type. The atmosphere of this class will be a warm and inviting one for everyone. No behavior that interferes with the learning of any person or persons will be tolerated at any level. It should be noted that written dialog, which is the most common type of interaction during an online class, is very different from face-to-face dialog. Written dialog, or E-dialog, lacks intonations and body language. BE VERY AWARE of the multiple ways your written word may be understood by others. It is not uncommon for disputes to arise as a result of such misunderstandings.

**Students with Disabilities:** Students with disabilities requiring auxiliary aids, services, or other accommodations should contact a Student Success Facilitator or visit the Enrollment Services Office on the first floor.

**Assessments and Grading:** Students will be assessed in a variety of ways. These will include a literary interpretation, scientific inquiries, a final project and presentation, quizzes, take-home independent essay questions, and mid-term and final exams. They are outlined below. Additional information will be made available in the future.

All assignments will be graded on a scale of 0 – 100%. However, they will be weighted individually for calculation of the final grade.

* Portfolio of Scientific Inquiries and Laboratories (20%) : Scientific inquiries are investigations, using scientific methodologies, of phenomena related to topics studied during the course. They will be conducted during lab times. The inquiries vary in nature, as do the products that will be assessed. Products may include graphs, data sets, analyses of data, diagrams, maps, etc. All products will be posted in your portfolio, and will be assessed near the end of the quarter. This is the only non-electronic assessment in the class.
* Quizzes (15%) : Quizzes will be brief, multiple choice assessments designed to give the student feedback on their learning on a weekly basis. There will be approximately nine quizzes during the quarter, and each will be approximately 10-20 questions. All will be announced and are taken through Blackboard. No make-up quizzes are offered for any reason.
* Mid-term (15%) The mid-term examination is designed to test knowledge and conceptual understanding of material covered in the first half of the course. Questions will be multiple choice and essay. The test is offered through Blackboard.
* Final exam (15%) The final examination will similar in nature to the midterm but will cover material from the second half of the quarter.
* Online Forum Discussions (20%) As a regular component of the online class, forum discussions replace classroom discussions by requiring students to offer ideas, read others ideas, and engage in interaction. Each week specific forum discussions will be required.
* Final project (15%) The final project will surround our regional community’s awareness and preparedness for the many natural hazards that face it’s citizens. You will work collaboratively with other students to understand, assess, and make recommendations regarding these issues.

## Cascadia’s grading policy is detailed on page 40 of the catalog. This equates to a 100 point scale as follows:

|  |  |  |
| --- | --- | --- |
| 100% - 96% = 4.0 | 83% = 2.8 | 71% = 1.6 |
| 95% - 94% = 3.9 | 82% = 2.7 | 70% = 1.5 |
| 93% = 3.8 | 81% = 2.6 | 69% - 68% = 1.4 |
| 92% = 3.7 | 80% = 2.5 | 67% - 66% = 1.3 |
| 91% = 3.6 | 79% = 2.4 | 65% = 1.2 |
| 90% = 3.5 | 78% = 2.3 | 64% = 1.1 |
| 89% = 3.4 | 77% = 2.2 | 63% = 1.0 |
| 88% = 3.3 | 76% = 2.1 | 62% = 0.9 |
| 87% = 3.2 | 75% = 2.0 | 61% = 0.8 |
| 86% = 3.1 | 74% = 1.9 | 60% = 0.7 |
| 85% = 3.0 | 73% = 1.8 | <60% = 0 |
| 84% = 2.9 | 72% = 1.7 |  |

## Academic Honesty: Cascadia Community College’s Academic Honesty policy can be found on page 42 of the catalog. It deals with plagiarism, cheating, and other violations of integrity. Read it. Please be aware that any infraction will be dealt with quickly and aggressively.

**Schedule of Topics, Labs, and Reading Assignments:**

|  |  |  |
| --- | --- | --- |
| Week | Topic | Text Reading |
| **1** | Introduction  | Chapters 1 |
| *Lab* | *Geology at Cascadia* |   |
| **2** | Plate Tectonics | Chapter 2 |
| *Lab* | Discovering Plate Tectonics |   |
| **3** | Minerals & Rocks | Chapter 3 |
| *Lab* | *Minerals* |   |
| **4** | Natural Hazards | Chapter 5 |
| *Lab* | *Rocks* |   |
| **5** | Earthquakes | Chapter 6 |
| *Lab* | *Locating Hypocenters* |   |
| **6** | Volcanic Activity | Chapter 7 |
| *Lab* | *Mt. St. Helens* |   |
| **7** | Rivers & Flooding | Chapter 8 |
| *Lab* | *N. Creek Hydrology* |   |
| **8** | Slopes and Mass Movement; Coasts | Chapters 9-10 |
| *Lab* | *Topographic Maps* |   |
| **9** | Water Resources | Chapter 12 |
| *Lab* | *NO LAB* |   |
| **10** | Energy Resources | Chapter 15 |
| *Lab* | *TBD* |   |
| **11** | Final Project Work |   |
| *Lab* | *Climate Change* |   |

*\*Note: This schedule is subject to change and additions. Only an overview is provided here*