Welcome to our Coordinated Studies Course!

Almost every day we see articles in the newspaper about new discoveries in the solar system as well as events such as tsunamis, floods, earthquakes, volcanic eruptions, and landslides somewhere in the world. We see this course as an incredible journey into our solar system. We hope that as a result of this course, that you will enjoy learning about the entire solar system throughout the remainder of your life.

We will explore items that make it to the newspapers, but you may find that there are many other items that are of interest that you may not have ever considered. For example, the image in the upper left corner of the page is of sand dunes. You probably think immediately of a desert region on Earth, such as the Sahara. However, this image is a NASA (National Aeronautics and Space Administration) image from Mars. What does the presence of sand dunes tell us about the conditions on the surface of Mars? Is the sand the same as sand on Earth or different? We hope that as we progress through the quarter you will find topics of interest to you even if they are not of direct practical value.

Later in this syllabus there is a more complete listing of the subjects we will study and skills we will improve this quarter, but this quarter we will focus on three major goals:

1. To develop and improve our curiosity about how the Earth and the other planets and their moons work. Many of us take for granted the world in which we live. We hope you will more closely examine our world and maintain an interest in solar system exploration.

2. To have a general knowledge of astronomy and geology so that when statements are made in the press, you will be able to properly evaluate those statements.

3. To develop skills to solve problems and questions. We hope that the skills you learn in this class will carry over into your other classes.

To accomplish these goals there will be a variety of instructional activities: lecture-discussion sessions, group problem-solving, laboratory work, field trips, and individual readings and investigations.

Evaluation/Grades

1. Exams

There will be five unit examinations during the quarter. These exams will be about every two weeks, but we will post the schedule on the course web site (the URL is listed below). The questions on these exams will be both objective-type and essay-type in format. At the end of the quarter we will average the three best exam grades of the first four exams, so we will drop the lowest grade of the first four exam grades. You must take Exam #5.

There are no make-up exams if you miss one. If you know you will be missing an exam, see Dana or Bob and we may be able to arrange to have you take the exam early.

Study guides will be distributed to aid you in studying for the exams. These guides will give you the opportunity to try sample questions in preparation for the exam.
2. Laboratory

We have two lab modes: in the classroom and field trips. During the field trips and in the lab you will be given problems to solve. These lab assignments will be graded on a point basis. The point value of each lab will be indicated.

Two lab field trips are scheduled. You need to bring some footwear that does not have slick soles and rain gear or an umbrella. Your feet may get very wet from the wet grass, so you may want to have a change of shoes for after the trip. You should bring something to write on and write with on the trips.

3. Group discussion problems:

We have found that students get more from this course and have more fun if we use some of the class time to investigate the Solar System rather than just have us talk and talk and talk. So, on some days during class we will break into groups and work on the solution to an open-ended problem. You and your group will discuss the situation and submit one written answer by the end of the class. Only those present for the discussion will receive credit for the problem. You may drop two of these problems without penalty, and there will be no make-ups.

4. Reading Guides Quizzes:

To make our class discussions work, each person needs to be prepared when she/he comes to class. We cannot expect you to know the answers to the group questions if you have no background, so it is important that everyone complete the Reading Guides prior to our lecture/discussion of the topic.

You will receive Reading Guides to help you read the text books (title of texts given below). These guides will be distributed at the beginning of each unit or are available at the course web site (URL given below). We will have a quiz over the information in the Reading Guides on the dates noted on the Course web site schedule and/or that are announced in class. You may use your Reading Guides during the quiz and the quiz will cover just the information in the Reading Guides. You are welcome to ask us questions about parts of the Reading Guide that you did not understand or could not find in the text.

These quizzes will be graded on a basis of points. Most of the quizzes will be about 10-20 points each. See the grading scale for how the grades for these quizzes will be determined. Quizzes will be conducted during the first ten minutes of class. If you are late to class you will have less time to complete the quiz. The total possible number of quiz points will be ten less than the actual number (it is equivalent to dropping one 10 point quiz). There are no make-ups if you miss a quiz.

5. Project

A class project that explores the solar system will be required. We will distribute information about the requirements and expectation of the project at a later time. We hope that you will enjoy investigating a part of the solar system.
## GRADING

1. Exams 50%
2. Laboratory 20%
3. Group discussion problems 10%
4. Homework/Quizzes 10%
5. Project 10%

Our grading philosophy is that if you score above 90%, your grade is in the "A" category (3.5-4.0) and if your score is between 80% and 90% your grade is in the "B" category (2.5-3.5), etc. However, if we give a difficult exam and the average score is low, we may curve the grades so that the average grade is not below a 2.0. The exams and the project will be graded on the decimal scale of 0.1-4.0.

The labs, group discussion questions, and homework/quizzes are graded on the basis of points (the points for labs, group problems, and homework/quizzes do not count the same value) and these points will be converted to the decimal scale noted above. The cut-off for a 3.5 will be 90% of the total points; a 2.5 will be 76% of the total points, a 1.5 will be 66% of the total points, a 0.7 will be 57% of the total points.

At the end of the quarter the grades from the exams, labs, the project, group discussion problems, and the homework/quizzes will be averaged according to the weighting factors shown above to determine the final grade. If you have questions about your grade, please let Dana or Bob know.

### Resources in the course:

#### There are two textbooks for this course:


Both of these books are available in the GRCC bookstore in the Student Center.

The publisher of the geology text has a web page at [http://www.geologylink.com](http://www.geologylink.com)

This site may be helpful to you during the quarter. There are a variety of links to other courses around the country. Some have class notes. You might get an idea of the wide variety of topics discussed in the introductory geology courses at other schools.

#### Course Web Site: We have established a course web site at the address below. Most of the handouts will be listed at this address, so if you need an additional copy of an assignment, you can print it from this site.

[http://www.instruction.greenriver.edu/filson/expsolarsystem.html](http://www.instruction.greenriver.edu/filson/expsolarsystem.html)

#### Tutors: Ellen Jared (Wednesdays 11-1)

Ellen is a former student in several GRCC geology courses has been a tutor for several years. Ellen can help you in many ways, but she is probably most effective in helping you when you have read the material or have tried the assignment, but you are stuck. She can also ask you questions as you prepare for an exam. She volunteers her time because she is interested in geology and people.

George Coulbourn (Mondays Noon-1) George has a background in engineering and physics and he has taken both Geology 101 and Astronomy 101 within the past couple of years. George has taught in a variety of situations and occupies much of his time now volunteering at Mount Rainier National Park as a backcountry ranger.

Stop by SMT 233 this quarter to meet Ellen and George.
Tentative Topics for the Course
(We will post a schedule for the class on the course web site noted above).

**Unit 1**- January 3 to approximately January 19:
Introduction to the Course
Observation and Inference in Science
Overviews of the Solar System
Scales and Dimensions of the Solar System and the Galaxy
Planets and Stars, orbits and characteristics
Law of Gravity
Observations of the Moon
Seasons and Calendars
History of Thought in Astronomy and Geology
Kepler’s Laws of Planetary Motion
Volcanism and Igneous Processes
Topographic Maps
Hazards of Volcanoes and Mt. Rainier and Mt. St. Helens

**Unit 2**- January 23- approximately February 2
Origin of the atmosphere
What is Pressure?
Weathering and Erosion on the Earth/other planets
Erosion processes on Earth and the landforms created by erosion
Conditions that permit life to exist in our solar system
Cratering

**Unit 3**- February 6- approximately February 21
Rivers and Shorelines
Moon and Tides
Phases of the Moon and Eclipses
Relative ages
Determining history of the Solar System
Numerical dating techniques
Deformation (Folding and Faults)

**Unit 4**- February 22- approximately March 6
Earthquakes
Characteristics of the insides of the Planets
Origin of the Solar System
Asteroids and Comets
Electromagnetic Radiation
Characteristics of the Sun

**Unit 5**- March 7- approximately March 16
Life history of Stars
Doppler effect
Stars and Galaxies
Plate tectonics on Earth (and other planets?)
**Course Descriptions:**

**Astronomy 101:**
Presents a unified account of contemporary astronomy beginning here at home with our earth and moving outward toward infinity through our solar system, beyond to the stars of our galaxy and out into the physical universe. Laboratory portion has the purpose of introducing the students to methods and techniques commonly employed in astronomy. Actual experiments performed will vary depending upon weather conditions and which celestial objects are observable that season. Satisfies math/science/lab distribution requirements for the AA degree. Not open to students who have taken ASTRO 100.

**Geology 101:**
Survey of the physical systems that give the Earth its form. Emphasizes the dynamic nature of interior and exterior processes and their relevance to humans. Laboratory class with field trips. Satisfies natural science or lab science requirement for AA degree.

**Content Specific Learning Outcomes:** (Student Achievement during the course)

This course has several primary goals:

1. You will correctly apply information presented during the lectures to the solutions of open-ended questions.

2. You will correctly apply appropriate principles of physics to the study of astronomical objects

3. You will correctly identify common rocks and the processes that form them along with relative age history principles to discuss the history of a geological map.

4. You will correctly describe the historical development of the principles on which astronomy and geology are based.

5. You will make observations (in class and on field trips) and correctly link those observations to information from the course.

6. You will employ the Earth as a model when considering the other planets of the solar system.

7. You will correctly use a computer to analyze or obtain data.

8. You will use the sun as a model when considering the other stars in the galaxy

9. You will develop skills to work effectively with peers in finding solutions to geological problems

10. You will use our galaxy as a model for other galaxies of the universe.

11. You will recognize real-world applications and connections related to geology and astronomy.

These outcomes will be demonstrated by: 1) successful achievement on lab quizzes and exams, 2) reports from experiences in the laboratory and on field trips, 3) responses to group discussion questions.
Campus-wide Learning Outcomes

Written Communication

Written communication is an important skill that is necessary for conveying information and ideas. The overall goal of writing in this course is to assess student comprehension of reading assignments and ideas presented in lecture. Students in this course will be asked to demonstrate good writing skills by incorporating the following items in their writing:

1) Appropriate use of standard English

2) Clear expression of ideas

3) Attention to mechanics and usage including:
   a) Complete sentences
   b) No abbreviations and/or shorthand symbols

These campus-wide learning outcomes will be demonstrated by one or more of the following: reading, writing assignments, group/individual projects, summary tests, review exercises and/or quizzes.

Critical Thinking Ability:

You will be asked to examine your thinking by:

1) explaining your ideas to open-ended questions (in some cases we ask that students defend their choice of more specific answers)

2) observing geological features on field trips and applying them to questions posed in the lab

3) applying information from lecture to problems presented during class

4) using information on geological processes to determine the history of a geological map. Students must apply their knowledge of how various rocks and knowledge of relative age principles to a specific geologic map.

This outcome will be demonstrated by student responses to answers on examination, lab quizzes, lab reports from in-lab exercises and field trips, and group discussion problems during the class period.

Learner Responsibilities

- We expect you to be present in class each day at the beginning of class.
- We expect that you will treat all the students and me in the class with respect (no portable phones or audible pagers unless you check with us before class and it is an emergency).
- We expect that you will be prepared for class each day and that you will have read the assigned material for that day
- We expect that you will participate in class discussions and group assignments
- We expect that you will not talk to other classmates during class, unless we have divided you into groups for the purpose of discussion
• We expect that you will be ready to start class, at the beginning of the class time and will remain in the class until the end of the class period.

• We expect that if you miss class you will get the notes and class materials from a fellow classmate.

• We recommend that you maintain returned assignments as reference in the event of a discrepancy in grades.

**Characteristics of an "A" Student:**

Sometimes when a student is not doing as well in this course as they would like we hear the question, “What do I have to do to get an A?” There is no easy answer to that question, but we hope the discussion below will help you.

Although excellent students are not all the same, the following are characteristics that I have noted which are almost always present in "A" students:

• they attend class every day. Absence rates among “A” students are usually very low.

• they understand the material rather than relying upon memorization for the test. They are able to apply ideas learned in other parts of the class (and other classes) to the issues they are studying.

• they are prepared for class. They have read the assigned material before the class session and are ready to ask questions and discuss the material. Their work is on time and neat.

• they have the attitude that the primary responsibility for their learning is their own, not the instructor's. These students will do well in spite of the particular instructor in a class.

• they work well in groups. They have good communication skills and are willing to listen to the ideas of others.

• they study actively. They do not just sit and read the text. They use the study guides provided. They outline, take notes, and solve problems as they read. This helps their retention and understanding of the material.

**Policy on Late Papers:**

Papers must be submitted to Dana or Bob by 5 PM the day they are due or they will be marked late. You may submit one paper late with no penalty. Do not use class time to complete an assignment. If we see you working on a late assignment during class, the assignment is due at that time.

Any late paper must be submitted to Dana or Bob before we return the graded papers to the other students. We will not accept papers that are submitted after we have returned to the papers to the other students. If you have more than one late paper, all papers after the first late paper will be marked down 50% in grade.

**Policy on Academic Honesty:**

Academic honesty is required at all times. In this course you will be working in groups and by yourself. Individual assignments, such as most of the labs and homework may be discussed with another person, but **must be written individually. We will not tolerate copying!** This includes copying work from old assignments done by another student in a previous term. Do not give your paper to someone else! Exams are closed book, closed notes, and obviously are to be your own work. If individuals are found to be cheating (this includes both people involved if copying is involved), their names will be given to the Dean.
of Instruction for further action that may range from no credit in the exam/assignment to removal from the college.

**Policy on Visitors in Class:**
Faculty members at GRCC have been directed to not permit children of students to attend classes. We understand that sometimes it is very difficult to make daycare arrangements. However, the policy from our administration is very clear and we will have to enforce the rules. If a person is over 16 and would like to attend the class, please see us several days ahead of the class sessions to obtain permission.

**Special Needs**
If you believe you qualify for course adaptations or special accommodations under the Americans With Disabilities Act, it is your responsibility to contact the Disabled Students Services Coordinator in the LSC and provide the appropriate documentation. If you have already documented a disability or other condition that would qualify you for special accommodations, or if you have emergency medical information or special needs we should know about, please notify us during the first week of class. You can reach us by phone at 253-833-9111, extension 4324 or extension 4673. Or, you can schedule an office appointment to meet Bob in SMT 235 during his posted office hours or at another mutually determined time. If this location is not convenient for you, we will schedule an alternative place for the meeting. If you use an alternative medium for communicating, let us know well in advance of the meeting (at least one week) so that appropriate accommodations can be arranged.

**A FINAL NOTE**

We sincerely believe that each of us can be a resource in this course. I hope you will ask questions, initiate discussion, and take an active part in making our lectures more like discussions. In this way, I think we will all learn more!

Dana Rush  
Office hours: 5-6 M-Th  
SMT 229/230  
253-833-9111 (ext 4673)  
Toll free numbers from Tacoma (253-942-0180) and Seattle (206-464-6133)  
Campus email address is drush@greenriver.edu

Bob Filson  
Office hours: 9-10:20 TTh and 10-12 W  
SMT 235  
253-833-9111 (ext. 4324)  
Toll free numbers from Tacoma (253-942-0180) and Seattle (206-464-6133)  
Campus email address is bfilson@greenriver.edu
Syllabus Review

Please answer the following questions about the syllabus and return to us at our next meeting:

1. What is the difference between a Reading Guide and a Study Guide?

2. I can determine when the date of the quizzes over the Reading Guides by:

3. If I miss a quiz, what is the policy?

4. If I miss class, how else can I get a copy of the Reading Guide, if Bob or Dana is not available?

5. There will be ______ exams this quarter. You may drop the score from one of the first _____ exams. You must take exam _____.

6. Your grade in this class is determined by your grades on the exams and…. 

7. When is a lab considered late and what is the policy on late labs?

8. What is the policy on working to together on labs?

Please let us know when you have questions about the grading of the class or the subject material.