

ARSC/MCDB 2115 - Spring 2002

Course information and Syllabus

Dr. Samantha Messier Biological Sciences Initiative	(303) 492-8615	Porter B111	MW 3:45-5	messier@stripe.colorado.edu
Dr. Kristin Swihart Biological Sciences Initiative	(303) 492-5248	MCDB A1B27A	T 2-3	swihart@colorado.edu
Professor Mark Dubin MCD Biology	(303) 492-3491	Porter B129	M 4-5, Th 1:30-3	dubin@colorado.edu

Course Web Site: <http://mcdb.colorado.edu/courses/2115/>

Course Objectives

- Exploration of concepts important to the understanding of the biological components of the earth system, interactions between living organisms, and the interaction between living organisms and the non-living elements of their environment.
- Understanding of the process and philosophy of scientific inquiry and increasing familiarity with the nature of science and scientific debate.
- Development of critical thinking skills necessary for life-long learning of science content.
- Modelling of appropriate student-centered, constructivist, inquiry-based pedagogy through the consistent use of a constructivist approach in the way this course is organized and taught.
- Increase awareness and use of information technologies, including web-based activities, by incorporating them into all aspects of the course.

Course Format

Each of the seven content units (see following) will focus on an important concept or process inherent to the earth system's living components. Each content unit will take 3-5 class periods to complete. Each content unit will contain the following types of activities and assignments:

- **Exploration:** This activity will typically be performed in class. In this activity, we will explore what you already know, and your pre-existing ideas about a concept relevant to the content unit. We intend for this to assist you in identifying your own thoughts on the topic, any questions you may have, and any preconceived ideas you may have. This activity may be hands-on, computer-based, or web-based. It will serve to reveal the foundation of understanding on which you will construct a deeper understanding of the topic.
- **Expansion:** During this combination of lectures, guided discussions and lab, paper, or computer based activities, you will gain a greater understanding of the content material necessary to the unit. In addition to the in-class activities and guided discussions, we will recommend resources available on the Internet or at the library which you will be expected to read outside of class. These additional resources are intended to reinforce the classroom learning experience.

- **Application:** Both a learning exercise and an assessment, this activity will ask you to apply what you have learned during the exploration and expansion activities to a new but related concept.
- **Guided Reflection:** At the close of each unit, we will reflect as a group on the learning that has occurred.

Assessment

Approximately 50 points per class session plus 200-point take-home final.

The grading scale will be as follows:

- A = 90 - 100%
- B = 80 - 89%
- C = 70 - 79%
- D = 60 - 69%

Within each of the seven units, each activity will be worth a certain number of points, for a total of approximately 50 points per class session. Some of the activities will be completed in class. Others will be homework assignments. Our objective will be to reward both effort and demonstration of understanding. You will earn some points simply by participating, while other activities will require you to demonstrate that you understand the concepts in order to earn full credit.

For each unit, the instructor(s) for that unit will provide the total number of possible points for the entire unit and the points possible for each individual activity. We recommend that you keep track of points you receive for each activity in order to monitor your own performance in the class. For example, Unit One will have a total of 210 possible points. Thus, in order to stay on pace for an "A" in this course, you should aim to receive at least 189 (90% of 210) points for Unit One.

Every student can earn an "A", there is no curve that limits your possible grade.

Final Exam

The final exam will be an open-book, take-home exam consisting of multiple choice, short answer, and essay questions. It will cover all seven units of the course. The final exam will be distributed on the last day of class and is due on Thursday, May 9 no later than 10AM.

Students must work independently on the final exam. You may not share answers or discuss the questions.

Self-Assessment

Each unit will include a self-assessment for you to use to assess your own understanding of the concepts. It will not count toward your point total for the unit. The self-assessments will include questions similar but not identical to those that will be on the final exam.

Use of the WWW-Internet

The course will make extensive use of the Web. For example, there is no assigned text. Instead, all reading will be on sites and pages on the Web that are assigned via this course site. We will use e-mail to contact you and to receive assignments. **If you are unfamiliar with any aspect of Web use PLEASE ask us for help. Similarly, we hope you will make extensive use of our office hours.**

Material to be viewed on the Web requires that your browser be at least Netscape 4.x or higher, or Microsoft internet Explored 5.x or higher. Both Macintosh and PC/Wintel type machines will work.

Files in PDF/Adobe Acrobat format may need the most recent version of the Free, Adobe Acrobat Reader, available free on the Web at: <http://www.adobe.com/products/acrobat/readstep.html>

One of the course instructors, Mark Dubin, maintains an extensive, categorized list of over 2500 Internet Links, that you may find useful. It's at: <http://spot.colorado.edu/~dubin/bookmarks/index.html>

The Contract

We stress that the actual class sessions are an integral part of the course. Thus, by taking this class you agree to the following contract:

- to arrive on time and prepared for every class session
- to do any assignments required for class in advance of the class session
- assignments designated to be turned must be done by the date specified
- to participate in the class discussions. The amount you say is not as important as its cogency

We, the faculty, agree to be available during the listed office hours, and to meet you as often as you want to at other times by appointment. We will also answer all e-mail promptly.

Late assignments will usually be downgraded by 10% if turned in within one week of the due date and 20% within two weeks of the due date. Arrangements for handing in assignments late and without penalty, due to reasonable circumstances can be made (typically in advance) with one of the instructors.

Absence from class for good reason can be made up by alternate written assignments. Such absences should be arranged in advance when possible (or at least notify an instructor in advance by e-mail.) Instructors may ask you for documentation of the reason.

