Sample Syllabus
Starry Sky National Park
The following is a sample syllabus for a two-day-a-week discussion and writing based “First Year Seminar” for non-science majors.


Goals:

We will learn about the history and future of our understanding of the universe as seen through the window of the national parks. We will learn about such topics as: the geology of volcanoes, Native American astronomy, stellar navigation by the Lewis and Clark expedition, what the planets have to tell us about global warming, and how to see the evidence of the Big Bang for ourselves. The topics in this class will touch on an enormous range of scientific disciplines, and all will have elements that you will be able to see and do for yourself.

Organization:

Class time: There are 11 chapters in our text and roughly as many weeks in the semester. Each week will cover a different chapter. One day a week will be devoted to discussion of the chapter. The second day will involve either a lecture or labwork designed to familiarize the student with a deeper understanding of the material.

The Topics
Week 1: Chapter 1, the Milky Way in Yosemite NP.
Week 2: Chapter 2, Kepler’s Laws and Eclipses.
Week 3: Chapter 3, tidal forces on the seashore, frozen ocean’s on other planets.
Week 4: Chapter 4, volcano worlds, Yellowstone NP.
Week 5: Chapter 5, Mars: Red planet and red rock country of Utah and Arizona.
Week 6: Fall Break
Week 7: Chapter 6, climate change on Venus, Mars and Glacier National Park.
Week 8: Chapter 7, seasons and the Moon.
Week 9: Chapter 8, archeoastronomy, stars, and Chaco Culture National Historical Park.
Week 10: Chapter 9, planets around other stars, Lewis and Clark.
Week 11: Chapter 10, Big Bang and Thanksgiving
Week 12: Chapter 11, light pollution, conservation, and the national parks.
Week 13: Class Presentations
Week 14: Final Paper due
Assignments: There are 5 main assignments for the class:

1. Response papers for leading Discussion: Each student will receive a list of discussion questions for each week’s chapter. Because you are best able to discuss what you have already spent some time writing about, each student will sign up to write a two-page paper for two chapters beginning with chapter 2. While everyone is expected to come to each discussion prepared to discuss any of the provided questions, those who have written on that day’s topics are expected to help lead discussion based on what they wrote.

2. Additional Readings: The ability to search for, identify, and synthesize useful (and reliable) information is one of the most important skills you will develop in college. Starting with chapter 2, each student will be responsible for finding a supplementary reading related to two of the chapters using the library’s resources. The student will write a brief response paper describing the reading, why it was chosen, and how it augments that week’s material. This will be due at the start of class.

3. Observing projects: Each chapter ends with a “See for Yourself” section describing simple observing projects. Each student will choose one of these simple projects (with the approval of the professor) to perform during the semester.

4. In-class assignments: There will be several in-class laboratory type activities in class on days when we are not having a class discussion.

5. Final Project: Each student will choose a national park that is near his or her hometown (or that he or she has plans to visit) that is not included in the text. Using that park you will research and write a 5-page paper describing the park, its reason for creation, and what aspect of astronomy or planetary science one can learn about by visiting it. This final project will be presented to the class at the end of the semester with a final paper.

Grading: Grades depend upon 8 things.
   1. Attendance: (10%)
   2. Participation in class discussion: (20%)
   3. Short Response Papers: (10%)
   4. In-class assignments: (10%)
   5. Additional Readings: (10%)
   6. See-for-Yourself Observing Projects: (10%)
   7. Final project presentation: (10%)
   8. Final project paper: (20%)

This class is a discussion. You are expected to do the readings and come to class prepared to discuss them. Only by doing both of these on a regular basis can you hope to pass the course. The best way to succeed in this class, is the best way to succeed in college: Keep up with the work, and you will be rewarded in the end.
For the Instructor:
Suggested lab activities for selected chapters:
Download files at: http://bulldog2.redlands.edu/fac/tyler_nordgren/

Chapter 1: Galaxy Classification Lab
Chapter 4: Scale Solar System Lab
Chapter 6: Planetary Surfaces Lab
Chapter 7: Cratering Lab
Chapter 8: H-R Diagram Lab
Chapter 10: Expanding Universe Lab