

**Syllabus**  
**Geological Sciences 113 Planets and Moons**  
**Winter 2008**

**Instructor:** Prof. Peter van Keken, 4502 CC Little Building, [keken@umich.edu](mailto:keken@umich.edu)

**Lectures:** TTh 12-1p, 1800 Chemistry (first half of semester only)

**Office hour:** by appointment via e-mail only

**Home page:** on ctools

**Examination:** The grade is based exclusively on the final exam that is scheduled in the last day of class. The exam will consist of approx. 40-45 multiple choice questions. Mock quizzes (at the end of most lectures) and a practice exam (distributed through ctools) will help you prepare for the exam.

**Reading materials:** Lecture outlines and copies of many of the illustrations shown in class are available on the web. The recommended (but not required) text for additional reading is “The Planetary System” by D. Morrison or T. Owen, Addison-Wesley. Either the 2<sup>nd</sup> or 3<sup>rd</sup> edition can be used.

**Lecture schedule:**

- 1/3 Introduction, history of planetary studies, solar system panorama
- 1/8 Solar system formation and evolution
- 1/10 Ancient solar system material: meteorites, asteroids, comets
- 1/15 The Moon and Mercury: internal structure, chemistry, evolution
- 1/17 The Apollo missions: origin of the Moon
- 1/22 Earth: A planetary perspective
- 1/24 Venus: Earth’s twin?
- 1/29 Mars: internal structure and surface processes
- 1/31 Mars: atmosphere, early evolution and life?
- 2/5 Jupiter, new perspectives from Galileo and Cassini
- 2/7 Saturn and Titan: the ring system and a proto-Earth
- 2/12 Planets in the deep freeze: Neptune and Uranus
- 2/14 Wrap-up & overflow. Evaluation
- 2/19 Review (Q&A only)
- 2/21 Exam