# HONR 279W - SYLLABUS (Fall 2004)

# The Solar System

INSTRUCTOR: William F. McDonough (www.geol.umd.edu/~mcdonoug)
Department of Geology
OFFICE: 0229 Chemistry building
OFFICE HOURS: Wed. 10:00-11:00 AM (or e-mail for another appt. time)
OFFICE #: 301-405-5561
E-MAIL: mcdonough@geol.umd.edu (preferred communication medium)

COURSE HOURS AND LOCATION: TuTh 11:00 am – 12:15 pm, PLS 1162

REQUIRED TEXTBOOK: The New Solar System (1999) by J. Kelly Beatty, Carolyn Collins Petersen and Andrew Chaikin, 4th edition, Cambridge University Press, (published by Sky Publishing Corp., Cambridge, MA). ISBN#: 0 933346 86 7

COURSE GOAL: This will be a brief tour of the solar system. We will explore the origin and evolution of the sun, planets, moons, comets, and other ET-objects. We'll finish with the questions: Is there life elsewhere in the solar system? Are there "other" planetary systems?

COURSE REQUIREMENTS: You are required to participate in the discussions and presentations, therefore attendance is critical. Everyone will give at least two in-class 5-minute presentations; the first on a topic relevant to the lecture material and a second on your written assignment. This is a seminar course and thus students will be involved in active learning; in-class presentations and discussions are required and will be graded. There will be 1 written assignment (approx. 2000 words of text) and 4 exams, which includes the final exam (all exams are open book). Any need for make-up exams will be dealt with on a case-by-case basis.

COURSE GRADING: 20% course participation
60% exams (15% each exam)
20% written assignments

CLASSROOM POLICIES: I adhere to all the usual university policies, including no ringing cell phones! I support the university's honor pledge (http://www.jpo.umd.edu/aca/honorpledge.html) and I will assume that you too have taken this pledge and/or will abide by it.

DISABILITY NEEDS: Students with disabilities are to see me immediately in order to arrange for any special needs that they may have.

YOUR INSTRUCTOR: I am a planetary geochemist; I study the processes of formation and evolution of planets (particularly terrestrial types of planets) from a chemical perspective. I have published papers on the composition of the Earth and the Moon and their constitutive domains (i.e., core, mantle, and crust). See my web-page for further details.

# COURSE OUTLINE AND READING ASSIGNMENTS

| DATE | TOPIC | READING |
|---|---|---|
| Tu 31-Aug | Introduction to the Solar System | (to be completed before class) |
| Th 2-Sep | Structure and Physics of the Solar Sys. | Chapter 1 & 2 |
| Tu 7-Sep | The Sun | Chapter 3 |
| Th 9-Sep | The Earth | Chapter 9 |
| Tu 14-Sep | The Earth II | Chapters 12 |
| Th 16-Sep | Venus | Chapter 8 |
| Tu 21-Sep | Mars (outlines due today) | Chapter 11 |
| Th 23-Sep | **In class exam** | |
| Tu 28-Sep | Mercury | Chapter 7 |
| Th 30-Sep | Petrology & Geochemistry | TBA (=to be assigned) |
| Tu 5-Oct | The Moon | Chapter 10 |
| Th 7-Oct | Meteorites | Chapter 26 |
| Tu 12-Oct | The Asteroid Belt | Chapter 25 |
| Th 14-Oct | Collisions & Cratering | Chapter 6 |
| Tu 19-Oct | **In class exam** | |
| Th 21-Oct | Atmospheres of the Terrestrial Planets | Chapter 13 |
| Tu 26-Oct | Big Gaseous Planets | Chapter 14 & 15 |
| Th 28-Oct | The Big Gaseous Planets II | Chapter 14 & 15 |
| Tu 2-Nov | The Galilean Satellites | Chapter 17 & 18 |
| Th 4-Nov | The Galilean Satellites II (written assignment due ) | Chapter 19 |
| Tu 9-Nov | Titan & Saturn's Rings | Chapter 16 & 20 |
| Th 11-Nov | Triton, Pluto and Charon | Chapter 21 & 22 |
| Tu 16-Nov | **In class exam** | |
| Th 18-Nov | Student paper presentations* | |
| Tu 23-Nov | Student paper presentations* | |
| Th 25-Nov | ********** THANKSGIVING ********** | |
| Tu 30-Nov | Comets | Chapter 5 |
| Th 2-Dec | Comets II | Chapter 24 |
| Tu 7-Dec | Life in the Solar System | Chapter 27 |
| Th 9-Dec | Other Planetary Systems | Chapter 28 |
| Mon 13-Dec | **Final Exam** (Monday) | 8:00-10:00 am |

*Student presentation days will consist of each student giving a 5-minute summary presentation of his or her written assignment.