Astronomy 101/111
Introductory Astronomy:
The Solar System and the Search for Life Beyond Earth

This course presents an introduction to astronomy and astrophysics with an emphasis on the discoveries from space exploration. The first third of the course deals with understanding the history of astronomy, orbits, gravitation, optics and the properties of light and matter. The second third of the course investigates the properties, origin, and evolution of the major planets, asteroids, comets, the Sun and other components of the Solar System with particular emphasis on comparative aspects with respect to the Earth. Recent discoveries of extrasolar planets and the intensifying search for life on Mars will be highlighted in the last third of the course when we explore the developing field of Astrobiology, the study of the origins, evolution, distribution, and future of life in the universe. This course is intended for non-science concentrators with a basic high school math and science background. Astronomy 111 has a two-hour laboratory section every week. Astronomy 101 has a one-hour discussion section. Course requirements include assigned reading, section meetings, homework, observations, quizzes, midterm and a final examination. Laboratory sections include observations with telescopes, weather permitting.

Locations and Times
Lectures in Room 182 Dennison (DENN); Labs and Discussions in 5179 Angell Hall (AH)
Lectures MWF, 1-2 PM; also every student has either a discussion or a lab section.
Website: http://ctools.umich.edu

Books and Materials: Two textbooks are required, which will be used largely in sequence.
The Solar System: The Cosmic Perspective, Third Edition; by Bennett, Donahue, Schneider, and Voit
Life in the Universe; by Bennett, Shostak, and Jakosky. Be sure to get the SOLAR SYSTEM version of the Cosmic Perspective book (there are multiple versions).

Professors

Barbara Eckstein	Room 925 Dennison	beckstei@umich.edu	615-1584
John D. Monnier	Room 941 Dennison	monnier@umich.edu	763-5822

This class will be taught in team format, with the schedule given in the syllabus
Office hours: Wed, 10 AM - 12 PM, and by appointment
Phone of main office: 764-3440

Contacting Professors or Graduate Student Instructors when Problems Arise
If appropriate, begin with your GSI, who can pass queries on to the professors (but feel free to contact the professors if that is the obvious thing to do). We like to hear from you but please don't send email unnecessarily as we get a thousand during the semester and it's hard to keep up.

Grading
Lab/Discussion section will account for 37% of your course grade
Exams (3 total, not cumulative): 20% each
Last exam will take place during the scheduled FINALS period:
Thursday April 28, 1:30-3:30pm in 182 Dennison (the normal lecture hall)
Attendance: 3% (through the use of electronic response devices; you can miss up to 6 classes without penalty)
Assigning letter grades to section and exam scores will be done by the professors.
No extra credit.

Important Dates: Jan 17 is MLK holiday; Winter Recess is Feb 26- Mar 4.
Drop/Add date: Tuesday Jan 25. Withdraw date: Mar 16 (approximate). Check your College's website for exact dates.

Graduate Student Instructors

Janet Colucci	Room 1014 Dennison	jcolucci@umich.edu	615-6139
Aletta Tibbetts	Room 1022 Dennison	aletta@umich.edu	615-6141
Jeffrey Fogel	Room 1037 Dennison	fogel@umich.edu	615-6138

Syllabus and Approximate Schedule

The following table contains a detailed syllabus. This schedule is subject to change during the semester – please check CourseTools website (ctools.umich.edu) regularly for updates. In the table we have used a few abbreviations. For instructors, JDM ➔ John Monnier, BE ➔ Barbara Eckstein. For textbooks, SS ➔ The Solar System: The Cosmic Perspective, LU ➔ Life in the Universe

Dates	Instructor	Book	Chapter
Jan 5,7	JDM	LU	1. A Universe of Life?
Jan 10,12	BE	SS	2. Discovering the Universe for Yourself
Jan 14,19	BE	SS	3. The Science of Astronomy
Jan 21	BE	SS	S1 (except S1.6). Celestial Timekeeping
Jan 24,26	BE	SS	4. A Universe of Matter and Energy
Jan 28, 31	BE	SS	5. The Universal Laws of Motion
Feb 2,4	BE	SS	6. Light: The Cosmic Messenger
			Feb 7: EXAM I
Feb 9,11	BE	SS	8. Welcome to the Solar System
Feb 14,16	JDM	SS	9. Formation of the Solar System
Feb 18,21	BE	SS	10. Planetary Geology: Earth and the Other Terrestrial Worlds
Feb 23,25	JDM	SS	11. Planetary Atmosphere: Earth and the Other Terrestrial Worlds
Mar 7,9	BE	SS	12. Jovian Planet System
Mar 11,14	JDM	SS	13. Remnants of Rock and Ice: Asteroids, Comets, and Pluto
			Mar 21: EXAM II
Mar 16,18	JDM	LU	3. The Nature of Life
Mar 23,25(½)	JDM	LU	4. The Geological History of the Earth
Mar 25(½),28	JDM	LU	5. The Origin and Evolution of Life on Earth
Mar 30, Apr 1	JDM	LU	6. Searching for Life in Our Solar System
Apr 4,6,8	JDM	LU	7. Mars
Apr 11	JDM	LU	8. Life on the Jovian Moons
Apr 13	JDM	LU	9. The Nature and Evolution of Habitability
Apr 15,18	JDM	LU	10. The Search for Habitable Worlds
			April 28 (1:30-3:30pm): EXAM III