Natural Science II: Earth, Life and Time V55.0312
Summer 2006 Meyer 102

Monday through Thursday
9:45 – 11:20 a.m.
Instructor: Prof. Andre Adler
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Lab Instructor: Michelle Kernan
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Lab Section	Day	Time
2	MW	11:30 – 1:30 p.m.
3	MW	1:45 – 3:45 p.m.

Course Description

How does life begin and evolve? Does life exist elsewhere in the universe? What is the future of life on Earth and beyond? These are the fundamental questions of Astrobiology, the focus of Earth, Life and Time. Over the last four billion years, life on Earth has evolved in response to changes in the environment. At the same time, major innovations in the evolution of life have led to transformations of the Earth's atmosphere, oceans and climate. Earth, Life and Time examines the history of the intimate relationship between the Earth's changing environment and the evolution of life on the planet. This long-term perspective provides a context for understanding current environmental issues such as global warming, tropical deforestation and loss of biodiversity.

Course texts

1. *Life in the Universe*, Chaisson and McMillan, *Life in the Universe Activities Manual*, Bennett, Shostak and Jakosky. These items are bundled together at the NYU Bookstore.
2. *Earth, Life and Time: Laboratory Manual*, 2005.
3. *Stars, Planets and Life*, Rampino and Jastrow. Yet to be published. Selected chapters will be posted on Blackboard.

Examination Schedule and Course Grade

Activities Manual work:	30%
Laboratory:	35%
Final examination:	35%

Activities Manual

Part of your grade for the course will be based on the Activities Manual. You will have to do assigned work out of the volume and submit the manual in lecture for grading on Wednesday of each week. It will be returned to you the following Monday.s

Lecture periods are allotted on Mondays and Wednesdays for you to work on the activities in small groups. You must be present in lecture to participate in the work. These are not homework assignments, so handing these in without being present in lecture for the group work will result in a loss of credit.

You might find it helpful to bring your textbook to lectures devoted to the activities manual.

Laboratory Sessions

These weekly sessions are an important part of the course. You must be registered for one lab section. You will have to submit a lab report for each experiment performed. The lab report has to include answers to all questions and any data you may have collected. **The laboratory sessions will be held in Meyer 103 and will begin June 26**.

Attendance The lab instructor will deduct points from your lab grade for arriving late or leaving early.

Absence Policy Excused absences will only be given in the case of illness (with a doctor's note) or observation of a religious holiday. You must notify your lab instructor in advance in writing if you miss a lab due to religious reasons. All other absences will be considered unexcused and will result in a lab grade of zero. **You cannot make up a lab by attending a laboratory session that you are not registered for.**

Late Assignments Late assignments will be penalized for each day late (excluding weekends). If you wish to submit a late lab report you must do so only at your laboratory instructor's office.

Lab Instructor The lab instructor will hold a weekly office hour where you can discuss lecture and laboratory material. Office locations and office hour schedule will be announced in lab.

Final Examination

The final exam will be in the multiple-choice format.

Missed Final Exam

Final Exam A make-up for the final examination will be given under exceptional circumstances, which must be discussed with Dr. Adler before the examination. A doctor's note must be provided in the case of illness. In this case a grade of incomplete will be assigned and **the make-up will be scheduled for the beginning of the Fall 2006 semester**. Please avoid making travel plans before the date of the final exam.

Religious Holidays If you will be absent for a religious holiday during the semester, you must inform your lab instructor and Dr. Adler in advance.

Class Web Site

A Blackboard web site for this class exists and is accessible through your *NYUHome* account or by going to http://classes.nyu.edu and logging on using your netID and the same password as that of your NYU email account. You must have an active NYU email account to access the site.

Weekly Schedule

Date	***Lecture Topic***	***Reading***	***Weekly Lab***
M June 26	A Universe of Life	**Ch. 1**	Activity 1 from the Activities Manual
T June 27	The Nature of Life	**Ch. 3**	
W June 28	Activity 3: The Extreme Environments of Earth		Fossils and Geologic Time
R June 29	The Geologic History of the Earth	**Ch. 4**	
M July 3	*No Lecture*		*No Lab*
T July 4	*No Lecture*		
W July 5	The Geologic History of the Earth	**Ch. 4**	Evidence for Evolution
R July 6	The Origin and Evolution of Life on Earth	**Ch. 5**	
M July 10	Activity 4: The Evolving Earth		Major Innovations in the History of Life
T July 11	Searching for Life in Our Solar System	**Ch. 6**	
W July 12	Activity 5: Designer Genes for a Designer World		Seafloor Spreading
R July 13	Mars	**Ch. 7**	
M July 17	Activity 6: Living a Polar Lifestyle		Dances with Earth I
T July 18	Life on the Jovian Moons	**Ch. 8**	
W July 19	Activity 8: To Terraform or Not to Terraform Mars		Dances with Earth II
R July 20	The Nature and Evolution of Habitability	**Ch. 9**	
M July 24	Activity 9: Defining the Habitable Zone		Moons of Jupiter
T July 25	The Search for Habitable Worlds	**Ch. 10**	
W July 26	Activity 10: The Rare Earth		Growth of the Brain and Intelligence
R July 27	The Search for Extraterrestrial Intelligence	**Ch. 11**	
M July 31	Activity 11: Wobbling Stars Activity 12: The Drake Equation		American Museum of Natural History – Hall of Dinosaurs
T Aug 1	The Fermi Paradox Contact - Implications of the Search and Discovery	**Chs. 13, 14**	
W Aug 2	Activity 13: Is There Anybody Out There?		Final Exam Review
R Aug 3	Final Exam		