Lessons from the Biosphere

MAP NS-2 course  V55-0311
Spring 2007
M&W 12:30 – 1:45  121 Meyer

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SYLLABUS

1. Wednesday January 17: Introduction to course.

No lab meeting this week. Lab sessions start next week.

-----EVOLUTION-----

2. Monday January 22: From the big bang to the origin of Earth (Liebes: pages 4-19 for main text, pages 8-19 for timeline text and images).


LAB 1: Introduction to Lessons from the Biosphere.


5. Wednesday January 31: Multicelld creatures and Big life comes ashore. (Liebes: pages 103-140 for main text, pages 104-167 for timeline text and images).

LAB 2: Evidence for Evolution.


LAB 3: American Museum of Natural History trip (No formal lab meeting, students go on their own time for trip to American Museum of Natural History.)

8. Monday February 12: Exam # 1 — Evolution

-----BIODIVERSITY-----

9. Wednesday February 14: The great wealth of life: biodiversity. (Bush, chapter 1)
LAB 4: Student Presentations on AMNH trip.

Monday February 19: NO CLASS, PRESIDENT'S DAY

10. Wednesday February 21: Who needs sex anyway? (Bush, chapter 2)

LAB Week 5: Techniques of microscopy.

11. Monday February 26: The power of predators. (Bush, chapter 3)

12. Wednesday February 28: Biomes. (Bush, chapter 4)

LAB 6: Biodiversity of Microscopic Life

13. Monday March 5: Making connections: fisheries. (Bush, chapter 5)

14. Wednesday March 7: Habitat fragmentation and extinction (Bush, chapter 6)

LAB 7: Biodiversity in the marketplace.

Monday March 12 SPRING RECESS
Wednesday March 15 SPRING RECESS

15. Monday March 19: Working to save biodiversity. (Bush, chapter 7)

16. Wednesday March 21: Current topics on biodiversity (Directed readings).

LAB 8: Student Presentations on Endangered Species.

17. Monday March 26: Exam #2 — Biodiversity

-----GLOBAL CYCLES-----

18. Wednesday March 28: Breathing of the biosphere—the carbon cycle. (Volk, chapter 1)

LAB 9: Photosynthesis.

19. Monday April 2: A global holarchy—the nitrogen cycle. (Volk, chapter 2)

20. Wednesday April 4: Outer light, inner fire. (Volk, chapter 3)
LAB 10: Respiration.

21. Monday April 9: The parts of Gaia and worldwide metabolisms. (Volk, chapters 4 & 5)

22. Wednesday April 11: Embodied energy (part 1, the natural biosphere). (Volk, chapter 6)

LAB 11: Part 1 of Student Presentations on Helping the Biosphere.

23. Monday April 16: Embodied energy (part 2, human energy and carbon). (Directed readings)

24. Wednesday April 18: The music of this sphere. (Volk, chapter 7)

LAB 12: Part 2 of Student Presentations on Helping the Biosphere.

25. Monday April 23: Earth Day Special Event

26. Wednesday April 25: Gaia in time and the human guild. (Volk, chapter 8)

Th & F—LAB 13: Wrap-up

27. Monday April 30: Conclusion and Open Review (last class session before final exam).

FINAL EXAM Wednesday May 2 12:00-1:50
(as given in the Spring 2007 Directory, page 20)

Books (3, one specialized for each section of the course):

1. For the "Evolution" section of the course—
   Liebes, Sidney; Elisabet Sahtouris, & Brian Swimme. A Walk Through Time: From Stardust to Us.

2. For the "Biodiversity" section of the course—
   Bush, Mark B. Ecology of a Changing Planet. (This is a custom printing of 7 chapters from a larger text, specially chosen for this course). Plus required directed readings from articles, to be announced.

3. For the "Global Cycles" section of the course—
Volk, Tyler. *Gaia’s Body: Toward a Physiology of Earth.*

**GRADING:**
Labs 35%  Test#1 20%  Test #2 20%  Final 25%
• Labs are important; unexcused labs receive “0”, a total of three unexcused labs results in “F” for the course.

**Blackboard:** I will use the blackboard site for the course to post this syllabus, previous exams, and other information about the course during the semester. Last year, for instance, the readings for the final third of the course on “global cycles” were all posted, drawn from my own writings on the subject.