Lessons from the Biosphere

MAP NS-2 course  V55-0311
Spring 2004
M&W 12:30 – 1:45  121 Meyer

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SYLLABUS

1. Wednesday January 21: Introduction to course.

Th & F—No lab meeting this week. Thursday and Friday lab sessions start next week.

-----EVOLUTION-----

2. Monday January 26: From the big bang to the origin of Earth (Liebes: pages 4-19 for main text, pages 8-19 for timeline text and images).


Th & F—LAB 1: Introduction to Electronic and Paper Resources.


5. Wednesday February 4: Multicelled creatures and Big life comes ashore. (Liebes: pages 103-140 for main text, pages 104-167 for timeline text and images).

Th & F—LAB 2: Evidence for Evolution.


Th & F—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.)

Monday February 16: NO CLASS, PRESIDENT'S DAY

8. Wednesday February 18: Exam # 1 — Evolution

Th & F—LAB 4: Student Presentations on AMNH trip.

-----Biodiversity-----

10. Wednesday February 25: Who needs sex anyway? (Bush, chapter 7)

Th & F—LAB Week 5: Techniques of microscopy.

11. Monday March 1: The power of predators. (Bush, chapter 9)

12. Wednesday March 3: Biomes. (Bush, chapter 11)

Th & F—LAB 6: Biodiversity of Microscopic Life


14. Wednesday March 10: Habitat fragmentation and extinction (Bush, chapter 18)

Th & F—LAB 7: Biodiversity in the marketplace.

Monday March 15 SPRING RECESS

Wednesday March 17 SPRING RECESS


16. Wednesday March 24: Current topics on biodiversity (Directed readings).

Th & F—LAB 8: Student Presentations on Endangered Species.

17. Monday March 29: The Third Annual Ecopalooza (special participatory activity)

18. Wednesday March 31: Exam #2 — Biodiversity

----GLOBAL CYCLES----

Th & F—LAB 9: Photosynthesis.

19. Monday April 5: Breathing of the biosphere—the carbon cycle. (Volk, chapter 1)

20. Wednesday April 7: A global holarchy—the nitrogen cycle. (Volk, chapter 2)

Th & F—LAB 10: Respiration.

21. Monday April 12: Outer light, inner fire. (Volk, chapter 3)

22. Wednesday April 14: The parts of Gaia and worldwide metabolisms. (Volk, chapters 4 & 5)
Th & F—LAB 11: Paper decomposition by an enzyme

23. Monday April 19: Embodied energy (part 1, the natural biosphere). (Volk, chapter 6)

24. Wednesday April 21: Embodied energy (part 2, human energy and carbon). (Directed readings)

Th & F—LAB 12: Part 1 of Student Presentations on Helping the Biosphere.

25. Monday April 26: The music of this sphere. (Volk, chapter 7)

26. Wednesday April 28: Gaia in time and the human guild. (Volk, chapter 8)

Th & F—LAB 13: Part 2 of Student Presentations on Helping the Biosphere.

27. Monday May 3: Conclusion and Open Review (last class session before final exam).

FINAL EXAM Wednesday May 5 12:00-1:50
(as given in the Spring 2004 Directory, page 21)

Books:

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

• 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.

• 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.