Lessons from the Biosphere

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

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(Check with your TA at the first lab for their preferred email.)
SYLLABUS

1. Wednesday September 8: Introduction to course.

Th & F—No lab meeting this week. Lab sessions start next week.

-----EVOLUTION-----

2. Monday September 13: 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 Electronic and Paper Resources.


5. Wednesday September 22: Multicelled 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 October 4: Special lecture

9. Wednesday October 6: Exam # 1 — Evolution

LAB 4: Student Presentations on AMNH trip.

-----BIODIVERSITY-----

10. Monday October 11: The great wealth of life: biodiversity. (Bush, chapter 1)

11. Wednesday October 13: Who needs sex anyway? (Bush, chapter 2)
LAB 5: Techniques of microscopy.

12. Monday October 18: The power of predators. (Bush, chapter 3)

13. Wednesday October 20: Biomes. (Bush, chapter 4)

LAB 6: Biodiversity of Microscopic Life


15. Wednesday October 27: Habitat fragmentation and extinction (Bush, chapter 6)

LAB 7: Biodiversity in the marketplace.


17. Wednesday November 3: Current topics on biodiversity (Directed readings).

LAB 8: Student Presentations on Endangered Species.

18. Monday November 8: Special lecture

19. **Wednesday November 10: Exam #2 — Biodiversity**

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

LAB 9: Photosynthesis.

20. Monday November 15: Breathing of the biosphere—the carbon cycle. (Volk, chapter 1)

21. Wednesday November 17: A global holarchy—the nitrogen cycle. (Volk, chapter 2)

LAB 10: Respiration.

22. Monday November 22: Outer light, inner fire; The parts of Gaia (Volk, chapters 3&4)

23. Wednesday November 24: Worldwide metabolisms. (Volk, chapter 5)

Thanksgiving—NO LABS.

24. Monday November 29: Embodied energy. (Volk, chapter 6)

25. Wednesday December 1: Ecopalooza
LAB 11: Part 1 of Student Presentations on Helping the Biosphere.

26. Monday December 6: The music of this sphere. (Volk, chapter 7)

27. Wednesday December 8: Gaia in time and the human guild. (Volk, chapter 8)

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

28. Monday December 13: Conclusion and Open Review (last class session before final exam).

FINAL EXAM: Monday, December 20. Time 12:00-1:50
(as given in the Fall 2004 Directory, page 21, edition put out spring 2004)
This is will confirmed during the course.

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.