ESM 202 Environmental Biogeochemistry
T/Th 9:30 – 10:45 am (BH 1414)

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OH: R 3 – 5 pm/open door/ appt.  OH: open door policy/email appt.

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Textbook: Biogeochemistry – Schlesinger and Bernhardt 2013

LECTURES

Jan 7  Introduction: overview, concepts and relevance (JM)
Jan 8  Understanding water quality - chemical aspects (JM)
Jan 14 Eutrophication and phosphorus (JM)
Jan 16 Watersheds and atmospheric deposition (JM)
Jan 21 Understanding water quality – microbiological aspects (PH)
Jan 22 Biogeochemical processes—microbial aspects (PH)
Jan 28 Nitrogen cycle (PH)
Jan 30 Oxygen biogeochemistry (JM)
Feb 4  Carbon cycle (JM)
Feb 6  Carbon dynamics in inland waters (JM)
Feb 11 Terrestrial carbon dynamics (JM)
Feb 13 Midterm
Feb 18 Restoration approaches (JM)
Feb 20 Sulfur cycle – sources and effects (PH)
Feb 25 Acid mine drainage (PH)
Feb 27 Industrial ecology (Geyer)
Mar 3  Atmospheric pollutants (AK or PH)
Mar 5  Inorganic and organic pollutants (PH)
Mar 10 Metals, mercury and lead (PH)
Mar 12 Synthesis and interactions (JM & PH)
Mar 17       FINAL EXAM  (8 to 11 am)

DISCUSSIONS
T 12:30-1:20 and 2:30-3:20
W 12:30-1:20 and 2:30 -3:20

Week   Topics
1     Water quality
2     Eutrophication; P biogeochemistry
3     Microbiology
4     N biogeochemistry
5     Carbon cycle
6     Midterm review
7     Sulfur cycle
8     Linked biogeochemical cycles
9     Emerging pollutants, Metals
10    Review for final

GRADING
•  Assignments 3 x 15% each
•  Midterm 20%
•  Final 35%

Reading Materials
Chapters and pages in Biogeochemistry – Schlesinger and Bernhardt 2013

Week   Readings
1     Chapter 1
2     Chapter 8; Chapter 12, pages 462- 465
3     Chapters 7, pages 248-270
4     Chapter 9, pages 368-382; Chapter 12
5     Chapters 5 and 11; Chapter 7, pages 233-248; Chapter 9, pages 352-368
6     Review for midterm
7     Chapter 13, pages 469-482; Chapter 9, pages 390-391
8     Chapters 2 and 14
9     Chapter 13, pages 482-484
10    Review for final

Additional materials will be posted to the course website in Gauchospace.