

MIBO 4090 Prokaryotic Biology
Spring 2010, MWF 11:15am -12:05pm
Room 404D Biological Sciences

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Office Hours: Talk to me, or send me an email, and we'll get something set up!

Required Text: Prescott's *Microbiology*, 8th ed. by Willey *et al.*, McGraw Hill College Publishing.

Supplements: Information will be presented from outside the required text, and will be provided on eLC., either separately, or contained within the lecture slides.

This course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

Academic Honesty: As a University of Georgia student, you have agreed to abide by the University's academic honesty policy, "A Culture of Honesty", and the Student Honor Code. All academic work must meet the standards described in "A Culture of Honesty" found at: www.uga.edu/honesty. Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to the course assignments and the academic honesty policy should be directed to the instructor.

A website for more detailed information about academic honesty can be found at: <http://www.uga.edu/honesty/ahpd/ahpd.html>

Exams: There will be six exams for this class, including the non-cumulative final (May 4th, 2010 at noon). The lowest exam score will be dropped, and the remaining five exams will be averaged for your final grade. Due to this policy, **no make-up exams will be scheduled**. All exams will be weighted equally, and will consist of a mixture of short answer, picture-drawing (!), and multiple choice. Previous exams will not be passed out as study guides (because they don't exist yet!).

Scientific Papers: This semester, we will be reading research papers from the primary literature. Two papers -- with topics relevant to the current classroom study -- will be assigned over the course of the semester. You will be asked to read the paper, and we will devote one classroom day identifying the hypotheses, deconstructing the figures, and analyzing the data. You will encounter exam questions that test your comprehension of the paper.

eLC use: Slides used for each lecture will try to be placed on eLC **after** each lecture, by 6pm of the following day. I will do my best to maintain communication in eLC, but if you submit a question to me via eLC, please email me directly – just to remind me. Supplemental notes and texts will be provided here, when necessary.

Spring 2010 Outline

DATE	Topic / Source
M 1-10	Introduction, bacterial cell structure, Ch. 3
W 1-12	Cell structure continued, Chs. 3
F 1-14	motility Chs. 3 and 13
M 1-17	NO CLASS: Academic Holiday
W 1-19	Transport mechanisms, cell cycle, Ch. 6 and 7
F 1-21	Cell cycle, environmental growth of microbes, Ch.7
M 1-24	Bacterial development, Chs. 3, 13, 20.1, and supplements
W 1-26	Two-component regulators, Ch 13.2
F 1-28	Introduction to Metabolism, Ch. 9
M 1-31	Exam 1
W 2-2	Dr. Whitman: Bioenergetics, Ch. 10- glycolysis/TCA
F 2-4	Dr. Whitman: Bioenergetics, Ch. 10- ETC/ox phos
M 2-7	Dr. Whitman: Bioenergetics, Ch. 10 chemo/photolithotrophy
W 2-9	Dr. Whitman: Ch. 10 anaerobic respiration/fermentation
F 2-11	Dr. Whitman: CO ₂ fixation, Ch. 11 (supplement with nitrogen fixation)
M 2-14	Dr. Whitman: sugar and amino acid synthesis, Ch. 11
W 2-16	Dr. Whitman: nucleotide and lipid biosynthesis, Ch. 11
F 2-18	Exam 2, Dr. Whitman
M 2-21	Central dogma, DNA replication, Ch. 12
W 2-23	Transcription, Ch. 12
F 2-25	Gene regulation I, Ch. 13
M 2-21	Gene regulation II, Ch. 13
W 3-2	Protein synthesis, maturation, and secretion Ch. 12
F 3-4	translational regulation, Ch. 13
M 3-7	More translational regulation, paper I handout (2-hybrid)
W 3-9	Paper I discussion
F 3-11	Exam 3, last class before Spring Break
M 3-14	NO CLASS: Spring Break
W 3-16	NO CLASS: Spring Break
F 3-18	NO CLASS: Spring Break
M 3-21	Dr. Stabb: Biogeochemical cycling, Ch. 26 (carbon, nitrogen cycles)
W 3-23	Dr. Stabb: More cycling, Ch. 26 (iron, mercury, phosphorous)
F 3-25	Dr. Stabb: Marine bacterial communities, Ch. 28
M 3-28	Dr. Stabb: Soil bacterial communities, Ch. 29

W 3-30	Dr. Stabb: Microbial Interactions (supplement quorum sensing Ch 7), Ch. 30
F 4-1	Dr. Stabb: Microbial interactions: part 2, Ch. 30
M 4-4	Exam 4, Dr. Stabb
W 4-6	Gene Regulation Review
F 4-8	Bacteriophages, and intro to phage λ , Ch. 9 and supplementation
M 4-11	Lambda lifecycle and lifecycle regulation, outside supplement
W 4-13	More lambda lifecycle regulation, outside supplement
F 4-15	Exam 5
M 4-18	Microbial diversity / Gram negative family: the proteobacteria, Ch. 20
W 4-20	Gram negative family: nonproteobacteria, Ch. 19
F 4-22	Gram positive family: Low G + C, Ch. 21
M 4-25	Gram positive family: High G + C, Ch. 22
W 4-27	Archaea, Ch 18
F 4-29	Archaea, Paper II handout
M 5-2	LAST CLASS! Paper II discussion
F 5-4	Exam 6: Final Exam (non-cumulative) 12:00 pm