

BioSc 1865 - Microbial Physiology

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Syllabus Fall 2002

T/H 4:00 p – 5:20 p
A220 Langley Hall

Office Hours : Tuesday 5:30 – 7:00 pm, Friday 10:00 – 11:30 am, and by appointment

	<i>Date</i>	<i>Topic</i>
1	T 27 Aug	Introduction to Microbial Physiology
2	H 29 Aug	History of the world : An overview of microbial diversity
3	T 03 Sep	Microbial fermentations : Switch hitting
4	H 05 Sep	Help from your friends : Fermentations in consortia
5	T 10 Sep	<i>Clostridial</i> fermentations of amino acids
6	H 12 Sep	Δp , $\Delta\Psi$ and ATP Synthases
7	T 17 Sep	Microbial respirations : Eating and breathing
8	H 19 Sep	Methanogenesis : The Archaeal way
9	T 24 Sep	Diauxic growth and deciding about carbon
10	H 26 Sep	Two-component signaling and deciding about respiration
11	T 01 Oct	Exam I (Lectures 1 - 10) : 27% of course grade
12	H 03 Oct	Responses to stress : Handling hard times
13	T 08 Oct	Sulphur cycling
14	H 10 Oct	Deciding about sulphur
15	T 15 Oct	Carbon fixation pathways
16	H 17 Oct	The wonders of nitrogen assimilation
17	T 22 Oct	Nitrate reduction and Denitrification
18	H 24 Oct	Nitrification, Nitrogen Fixation and nitrogen cycling
19	T 29 Oct	Genesis and degradation of xenobiotic compounds
20	H 31 Oct	Exam II (Lectures 10, 12 - 18) : 27% of course grade
21	T 05 Nov	Protein export : Exoenzymes and pathogenicity
22	H 07 Nov	Genetic and physiological adaptations to intracellular life
23	T 12 Nov	Physical processes shaping microbial communities
24	H 14 Nov	Biogeochemical cycling and microbial community structure
25	T 19 Nov	Challenges of extreme environments
26	H 21 Nov	Nitrogen fixation and circadian rhythms in cyanobacteria
27	T 26 Nov	Sporulation in <i>Bacillus</i> : Eating yourself to live
	H 28 Nov	<i>Thanksgiving Recess</i>
28	T 03 Dec	Microbial differentiation
29	H 05 Dec	Intracellular dynamics
30	F 13 Dec	** Exam III (4:00 - 5:50 p) : 36% of course grade **

See the other side of this page for stimulating and exciting information regarding course policies

Prerequisites

As noted in the course description, students enrolled in Biosc 1865 should have attained a grade of 'C' or better in Biosc 1850 (General Microbiology), and have taken, or be currently enrolled in, a Biochemistry course (Biosc 1000 or Biosc 1810/1820). The material covered in this class will rely upon your familiarity with the subject material of these classes. Transfer or guest students should consult with Dr. Lawrence to ensure that they have completed the appropriate preparatory courses.

Office Hours and Review Sessions

Open office hours are noted above; in addition, all students – especially those with poor performance on exams – are encouraged to arrange for individual appointments. Students who are confident in their grasp of course material should also try to meet with the instructor during office hours to ensure that their deductions and inferences are sound. In addition to regular office hours, review sessions will be offered prior to each examination; to accommodate student schedules, review sessions are typically offered on Saturdays and on weekday evenings.

Textbook and readings

The textbook for the course is *The Physiology and Biochemistry of Prokaryotes*, by David White; the **second** edition of this book is available in the bookstore. The following texts are on reserve in Langley Library:

- A copy of the **first** edition of *The Physiology and Biochemistry of Prokaryotes*, by David White
- *Bacterial Metabolism*, by Gerhard Gottschalk, an excellent reference for fermentations
- *Escherichia coli and Salmonella : Cellular and Molecular Biology*, edited by Fred Neidhardt *et al.*
- Additional reading will be placed on reserve in Langley library as the course progresses.

Problem sets

Several problem sets – one assigned about every three/four weeks – will account for 10% of the course grade. The answer key to problem sets will be available on the class web site the evening after problem sets are submitted for grading. While 10% may not appear to be a significant fraction of your final grade, the format of the problem sets will reflect the format of exam questions. Collaborative efforts can be helpful, but students must turn in their individual work. Problem sets will be due one week after their assignment; late problem sets will not be accepted. Problem sets must be typewritten or computer generated (as majors in this Department, you have access to the Hughes computer lab on the first floor of Clapp Hall). Problem sets may be submitted by email as text in the body of the message, or as an attached file readable by Microsoft Word; I will not be responsible for any lost, late, or dog-consumed email. Problem sets received by email will be acknowledged by email.

Exams

Two midterm examinations have been scheduled, and will comprise a total of 54% of the course grade. The final exam is worth 36% of the course grade, will focus on material not covered in the previous exams, and **will include** questions synthesizing material from the entire course. If the scoring of an exam is in dispute, the entire exam will be regraded. Petitions to regrade an examination must be made in writing within one week of distribution of the graded exams.

Missed exams

Exams are expected to be completed on their appointed date and time. Exceptions can be made in cases of personal emergency, and may involve the substitution of an oral exam. Reasons for missing an examination must be submitted in writing within one week of the examination date. Written documentation from a physician is required for examinations missed due to a medical condition.

Final grades

Final grades are calculated by combining points scored in problem sets (10% of final grade), points scored in the two mid-term exams (each worth 27% of the final grade) and points scored in the final exam (worth 36% of the final grade). **Extra-credit assignments cannot be employed to augment final grades.** Petitions to regrade the final exam – or to reconsider a final grade assignment – must be made in writing within one week of the posted, publicly availability of the scored final exams. Students are encouraged to consult the web site for my teaching philosophies and performance expectations that correspond to final letter grades.

G Grades

Students may submit a petition for a G grade in writing. If you have missed the final exam, a valid, documented excuse must accompany arrangements to fulfill the course requirements.

Academic Integrity

Students violating the University of Pittsburgh Policy on Academic Integrity will be required to participate in the outlined procedural process as initiated by the instructor. Let's all hope it never comes to this.