

BIOLOGY 46 – MICROBIOLOGY – FALL 2014

SEPT 15 M	Introduction to the Microbial World	MLG	1
SEPT 17 W	Bacterial Structure & Function I	GO'T	2.1-2.11, 2.13-2.17, 2.19
SEPT 19 F	Bacterial Structure & Function II	GO'T	
SEPT 22 M	Growth I	MLG	3.1-3.2; 5.11-5.19; 16.12-13
SEPT 24 W	Growth II	MLG	5.1-5.10
SEPT 26 F	Bacterial Metabolism I	GO'T	3.3-3.4, 3.6-3.13
SEPT 29 M	Bacterial Metabolism II	GO'T	21.1-21.5
OCT 1 W	Gram-Negative Bacteria I	GO'T	6.13, 15.3
OCT 3 F	Gram-Negative Bacteria II	GO'T	15.4, 19.4, 2.18, 14.19
OCT 6 M	Gram-Positive Bacteria I	MLG	15.6-8; 23.8-9; 24.9; 29.1-3; 29.9; 30.9; 31.8-9; 31.13
OCT 7 T	Midterm 7 PM		Note Evening Exam
OCT 8 W	Gram-Positive Bacteria II	MLG	
OCT 10 F	Other Interesting Bacteria	RT	15 (466-468, 491, 497-498, 500-501, 507-508); 29 (859-862, 870)
OCT 13 M	Microbial Growth Control	RT	15 (503-504); 27 (793; 802-803, 811-815)
OCT 15 W	Vaccine Strategies	RT	24 (743-745); 27 (798-812); 28 (848-849); 31 (906-907)
OCT 17 F	Genetics I	RT	10 (292-311)
OCT 20 M	Genetics II	RT	10 (292-311)
OCT 22 W	Epidemiology and Public Health	MLG	28
OCT 24 F	Fungi	MLG	17.9-14; 22.1; 22.5; 32.1
OCT 27 M	Introduction to Virology	DL	8.1-8.4; 8.8; 8.10-8.11; 9.1
OCT 28 T	Midterm 7 PM		Note Evening Exam
OCT 29 W	Viruses with RNA genomes	DL	9.8-9.10; 24.6
OCT 31 F	Viruses with DNA genomes	DL	9.6-9.7; 29.13
NOV 3 M	Shifts, drifts and other viral tricks	DL	29.8; 9.7; 9.11
NOV 4 T	Emerging/re-emerging viruses	DL	28.7; 30.2; 30.6
NOV 5 W	HIV	Guest Lecture, Tim Lahey, M.D.	
NOV 7 F	Microbial Ecology	MLG	18; 19.12 -13; 22.11-12
NOV 10 M	Microbial Ecology	MLG	20.1-4; 22.7
NOV 11-T	Food and Industrial Micro I	MLG	21.6-9
NOV 12 W	Field Trip		
NOV 14-F	Food & Industrial Micro II Micro Lunch	MLG	31.6
NOV 17 M	Plant-Microbe Interactions	MLG	22.3-4; 11.13
NOV 18 T	Wrap Up	MLG	LAST DAY OF CLASSES
NOV 24 M	FINAL EXAM 3 PM		

The X-hour for this course is Tuesday 1-1:50 PM. Currently, we have THREE X-hours scheduled – Nov 4th, Nov 11th and Nov 18th. Other X-hours may be used during the term.

MLG Mary Lou Guerinot, Ronald and Deborah Harris Professor of Biological Sciences
LSC 325; 646-2527
<http://www.dartmouth.edu/~guerinot/>

GO'T George O'Toole, Professor of Microbiology and Immunology
Remsen 202; 650-1248
<http://www.dartmouth.edu/~gotoole/>

RT Ron Taylor, Professor of Microbiology and Immunology
Vail 106; 650-1632
<http://www.dartmouth.edu/~rktlab/>

DL David Leib, Professor of Microbiology and Immunology
Borwell 630E; 650-8616
<http://dms.dartmouth.edu/leib/>

Lab Instructor: Nicholas Sylvain

Graduate Teaching Assistants: Alan Collins
Gary Heussler

The required text for the course is "Brock: Biology of Microorganisms", 14th Edition, by Madigan, Martinko, Bender, Buckley and Stahl. There is one copy on reserve at Dana Library.

Grading in the course will be based on:

2 Midterms	40% (each worth 20%)
Final	25%
Lab	35%

You are also required to participate in an oral presentation on a topic of current interest in Microbiology. More information will be provided on these presentations in lab.

Bio 46 Laboratory Manuals will be handed out during the first lab, but you can find a copy of the first lab on Blackboard. LAB MEETS IN 206 LSC.

We have a Canvas site that will contain lecture outlines and/or lecture notes, any PowerPoint presentations, announcements and other useful items.

Academic Honor Principle

The Dartmouth College Student Handbook states “Fundamental to the principle of independent learning are the requirements of honesty and integrity in the performance of academic assignments, both in the classroom and outside. Dartmouth operates on the principle of academic honor, without proctoring of examinations. Students who submit work which is not their own or who commit other acts of academic dishonesty forfeit the opportunity to continue at Dartmouth.” There are a number of situations in which a student in Biology 46 might find him- or herself tempted to violate the Academic Honor Principle. These situations include (but are not limited to) the following:

- a) Examinations must be completed without reference to written materials other than those provided with the exam paper and must be completed without communication with anyone else (the only permissible exception is that students may request clarification of any exam question from the course faculty and staff who are present expressly for that purpose). The answers that you provide must be entirely your own work.
- b) Under certain circumstances, we may allow exams to be re-graded by the instructors. Any alteration of the answers between the time when the graded papers were returned to the student and the time when the paper was submitted for re-grading constitutes a breach of the Academic Honor Principle. To deter this practice, we photocopy exam pages.
- c) Laboratory experiments are performed alone. The student misrepresenting the work of another as his or her own is in violation of the Academic Honor Principle.

Honesty is the foundation of the academic pursuit of knowledge. In recognition of this, the faculty and staff of Biology 46 will not overlook any violations of the Academic Honor Principle. Indeed, the Faculty Handbook of Dartmouth College states explicitly that College Faculty is obligated to report potential violations of the Academic Honor Principle to the Dartmouth College Committee on Standards.

NOTE:

Students with disabilities who are taking this course and may need disability-related classroom accommodations are encouraged to make an appointment to see Professor Guerinot as soon as possible.

We also encourage you to stop by the Academic Skills Center in Collis Center to register for support services.

We realize that some students may wish to take part in religious observances that fall during this academic term. Should you have a religious observance that conflicts with your participation in the course, please come speak with Professor Guerinot before the end of the second week of the term to discuss appropriate accommodations.

Bio 46.14 Laboratory Schedule

Lab Date	Laboratory Exercise
<u>Week 1</u> September 22	Light Microscopy/Microbiological Techniques: The Gram Stain, Wet Mounts & Streaking a Plate
<u>Week 2</u> September 29	Begin Unknown Identification
<u>Week 3</u> October 6	Unknown Identification continued; Discuss source for environmental unknown
<u>Week 4</u> October 13	Unknown Identification continued/ Begin Environmental Isolates
<u>Week 5</u> October 20	Unknown Identification continued/ Environmental Isolates continued; Plaque assay
<u>Week 6</u> October 27	API20E strips; Unknown continued/ Environmental Isolates continued
<u>Week 7</u> November 3	PCR; Antibiotic sensitivity tests; Unknown Identification continued/ Environmental Isolates continued; Oral Reports
<u>Week 8</u> November 10	16S rRNA sequence analysis; Coliform Counts; Oral Reports
November 18	Lab reports due by Tuesday, November 18 at beginning of class