

## Microbial Life 16:682:501 - Fall 2013

Monday and Wednesday 3.55-5.15 pm, CDL 103

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**Reading:** *The Prokaryotes* (on Sakai), A recent general microbiology textbook (e.g., Brock Biology of Microorganisms; Staley, Gunsalus, Lory & Perry: Microbial Life; or Prescott, Harley & Klein: Microbiology) and selected articles.

Lecture	Date	Topic	Lecturer
1	Wed Sept 4	Introduction and course structure	MH LK CV
2	Mon Sept 9	Microbial life on early earth	LK
3	Wed Sept 11	Cell structure and function	LK
4	Mon Sept 16	Growth and metabolism	CV
5	Wed Sept 18	Microbial genetics	CV
6	Mon Sept 23	Microbial taxonomy and the concept of species	MH
7	Wed Sept 25	The Tree of Life: Molecules and evolution	LK
8	Mon Sept 30	<b>Exam I (covers lectures 1-7)</b>	
9	Wed Oct 2	Geomicrobiology and biogeochemical cycles	LK
10	Mon Oct 7	Linking phylogeny and function	LK
11	Wed Oct 9	Deep Purple: Proteobacteria	MH
12	Mon Oct 14	The sunny side of life: Photosynthesis	LK
13	Wed Oct 16	Raiders of the lost Archaea	CV
14	Mon Oct 21	The dark side of life: Chemosynthesis	CV
15	Wed Oct 23	On being positive (Actinobacteria, Firmicutes)	MH
16	Mon Oct 28	The edge of life: Viruses	S. Duffy
17	Wed Oct 30	How to get there: Moving around or staying in place	MH
18	Mon Nov 4	Symbiotic relationships	CV
19	Wed Nov 6		
20	Mon Nov 11	<b>Exam II (covers lectures 9-17)</b>	
21	Wed Nov 13	Domestication of microbes: Industrial applications	MH
22	Mon Nov 18	Fungi: fuzzy eukaryotes	N. Zhang
23	Wed Nov 20	“Omics” and their applications in environmental microbiology	CV
24	Mon Nov 25	Pathogenic microbes	J. Boyd
	Wed Nov 28	<b>No Class--Thanksgiving</b>	
25	Mon Dec 2	Food microbiology: Good guys	M. Tchikindas
26	Wed Dec 4	Bioenergy	LK MH
27	Mon Dec 9	Wrapping it up	MH LK
28	Wed Dec 11	<b>Exam III (covers lectures 1-27)</b>	

**Examinations:** Three examination will be given: **I.** (Open Book) Covering material discussed in lectures 1-7; **II.** Covering lectures 9-17; **III.** Comprehensive exam.

Grading: Exam I 20%, Exams II 30 % and III 30% , term paper 20%.

Web site:

[sakai.rutgers.edu](http://sakai.rutgers.edu)

**Microbial Life, 16:681:501**  
**Fall 2013**

**Term Paper:**  
**“A day in the life of my favorite microbe”**

For us to cover a broader range of different microorganisms we ask that you gather information on your “favorite” microorganism. This will be the topic of your term paper and you should also prepare a 1-page handout for the class.

You need to get your organism approved by us by September 20<sup>th</sup>. In order to get broad microbial coverage we will accept only limited members of the same phyla. In case of overlap, topics will be assigned on a first come basis (first proposal has priority).

**Term Paper:**

Aim for approximately 10 pages + references. Use the reference style of *Journal of Bacteriology*.

In your paper you should address the following:

- source of original description (when, where, who....) and taxonomy (genus, species)  
This should preferably include the original publication
- What is the Type strain or specimen
- Other sources of isolates, where are they deposited (Culture collections)
- What is the habitat, niche, physiology,... of the organism
- Any other interesting characteristics

Prepare a 1-page handout summarizing “your” organism.

Term Papers are due on or before **Wednesday, November 20<sup>th</sup>**.

The Term Paper will count for 20% of the final grade.