Microbial Ecology, Biol F443
Fall 2003

Instructor: Dr. Lee Taylor, 202 Arctic Health Research Building, fitt@uaf.edu, 474-6982
Office Hours: Monday 2:00-4:00 or by appointment

Text and Materials:
• Required: Brock Biology of Microorganisms by Madigan, Martinko & Parker, 10th Ed.
• Supplemental texts on reserve in the Biosciences Library:
  1. Microbial Ecology by Atlas and Bartha
  2. Environmental Microbiology by Maier, Pepper & Gerba
  3. Principles and Applications of Soil Microbiology by Sylvia, Fuhrmann, Hartel & Zuberer
• Journal articles, etc.: titles to be announced; will be provided on the website or in class
• The chapters and pages of reading assignments will be given on BlackBoard and in class

When and Where: Tues/Thurs 3:40-5:10 in Irving 201

Prerequisites: Principles of Ecology (Biol 271) or Microbiology (Biol 342). YOU CANNOT TAKE THIS CLASS WITHOUT ONE OF THESE PREREQUISITES. If you have special circumstances regarding the prereqs, make an appointment to talk to me about it.

Where to Get Information: This course will have an associated BlackBoard web site, and I will make sure each student is registered and knows how to access the site. Check the BlackBoard site (http://classes.uaf.edu/) frequently to be sure you have the latest information!

Grading Summary:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number of assignments</th>
<th>Points per assignment</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>-</td>
<td>-</td>
<td>80</td>
</tr>
<tr>
<td>Problem sets</td>
<td>(2 lowest dropped) 10</td>
<td>40</td>
<td>320</td>
</tr>
<tr>
<td>Midterms + Final</td>
<td>3</td>
<td>200</td>
<td>600</td>
</tr>
<tr>
<td><strong>Grand total:</strong></td>
<td></td>
<td></td>
<td><strong>1000</strong></td>
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• Problem sets turned in late will be penalized 1/2 letter grade per day.
• The midterm dates are Tuesday, October 7th and Tuesday, November 4th. The final is 3:15-5:15 p.m., Tuesday, December 16. It is cumulative, but will focus on the last third of the class.
• There will be NO makeup exams.

Grades will be assigned as follows:
90-100 pts = A; 80 – 89 pts = B; 70-79 pts = C; 60 – 69 pts = D; < 60 pts = F
I reserve the right to calculate a curve if the distribution is unreasonable (e.g. all A’s or all F’s).

Reminder of UAF Grade Policy:
A An honor grade indicates originality and independent work, a thorough mastery of the subject, and the satisfactory completion of more work than is regularly required.
B Indicates outstanding ability above the average level of performance.
C Indicates satisfactory or average level of performance.
D The lowest passing grade indicates work of below average quality and performance.
F Indicates failure to meet lowest standards. (UAF Catalog, Fall 2003)
A note on plagiarism:
Plagiarism will be rewarded with an F in the course. When in doubt, cite it! “Plagiarism is defined as appropriating passages or ideas from another person’s work and using them as one’s own.” (Dr. Joy Morrison, Syllabus, JB 486/ED 486 Media Literacy, Spring 2001). Note that using text from the internet without citation is just as inappropriate as copying from a book. Also see the Student Code of Conduct at http://www.uaf.edu/reg/schedule/policies.html#student_conduct.

Approximate Order of Subjects:

Cell and Molecular Biology Refresher
A) chemical bonds, molecules of life
B) cell structure: membranes, walls, flagella
C) cell and molecular biology: enzymes, genes and gene expression

Microbial Diversity
A) phenotype versus phylogeny
B) major branches of prokaryotes
C) major branches of eukaryotic microbes
D) molecular methods in microbial ecology

Microbial Natural History
A) population growth
B) adaptation to their environments
C) reproduction and dispersal

Microbial Roles in Biogeochemical Cycles
A) energy sources, metabolic capabilities
B) the carbon cycle
C) the nitrogen cycle
D) other elements
E) biodegradation (Joan Braddock)

More Microbial Interactions
A) disease
B) consortia
C) mycorrhizae
D) nitrogen fixation (Roger Ruess)

NOTE: A more detailed weekly calendar will be provided and updated on the BlackBoard site. The order of subjects above may change slightly, depending on the availability of guest lecturers and other factors.