REVISED 3/2/2012.

Office: 228 West Ridge Research Building (WRRB)
Phone: 474-6656
Email: mbleigh@alaska.edu
XXXXXXX or by appointment

Tuesday and Thursday 9:45-11:15

This course provides a comprehensive overview of the role of microorganisms in environmentally-relevant processes including bioremediation of pollutants, biogeochemical cycling and wastewater treatment, and covers modern molecular methods for studying microbes in the environment. Upper level undergraduate and graduate students in Biology, Environmental Chemistry, Environmental Engineering or other related disciplines will gain expertise in microbial processes with an emphasis on their application to environmental qualier level u5E3yc9rX4bes

- Understand application of microbial processes to environmental remediation
- Appreciate contribution of microorganisms to geochemical cycling
- Become familiar with methods for studying microbes in the environment
- Develop skills in reading and criticism of primary scientific literature
- Develop literature research, writing and oral presentation skills

Lectures with supporting readings from textbooks and primary scientific literature will form the knowledge base of the course. Journal articles relevant to the current topic will be assigned for critical group discussion.

The goals of these exercises are to help develop research, writing and oral presentation/teaching skills important to success in their postgraduate scientific careers.

- *Reading questions:* When journal articles are assigned for reading and discussion, reading questions (short answer) will also be assigned which should be completed before the beginning of the discussion class period.
- *Invisible Jungle:* Practice skills in communicating science to the public by developing a short (2-min) radio story about a topic in environmental microbiology. See http://www.invisiblejungle.com/ for more information and for sample programs. Students' stories will be submitted to Invisible Jungle for consideration for future broadcasts.
- *Term paper and presentation:* All students will independently research an environmental microbiology topic of their choice, subject to instructor approval. Students will prepare a term paper in the form of a review article of 20 pages in length. Students will then deliver ~25 min oral presentations to the class near the end of the semester. Detailed instructions for papers and presentations will be provided in class. An outline and first draft of the paper will be due prior to the final deadline. Detailed instructor feedback will be provided at all stages in written form and through 1-2 individual conferences with students. See schedule below for relevant deadlines.

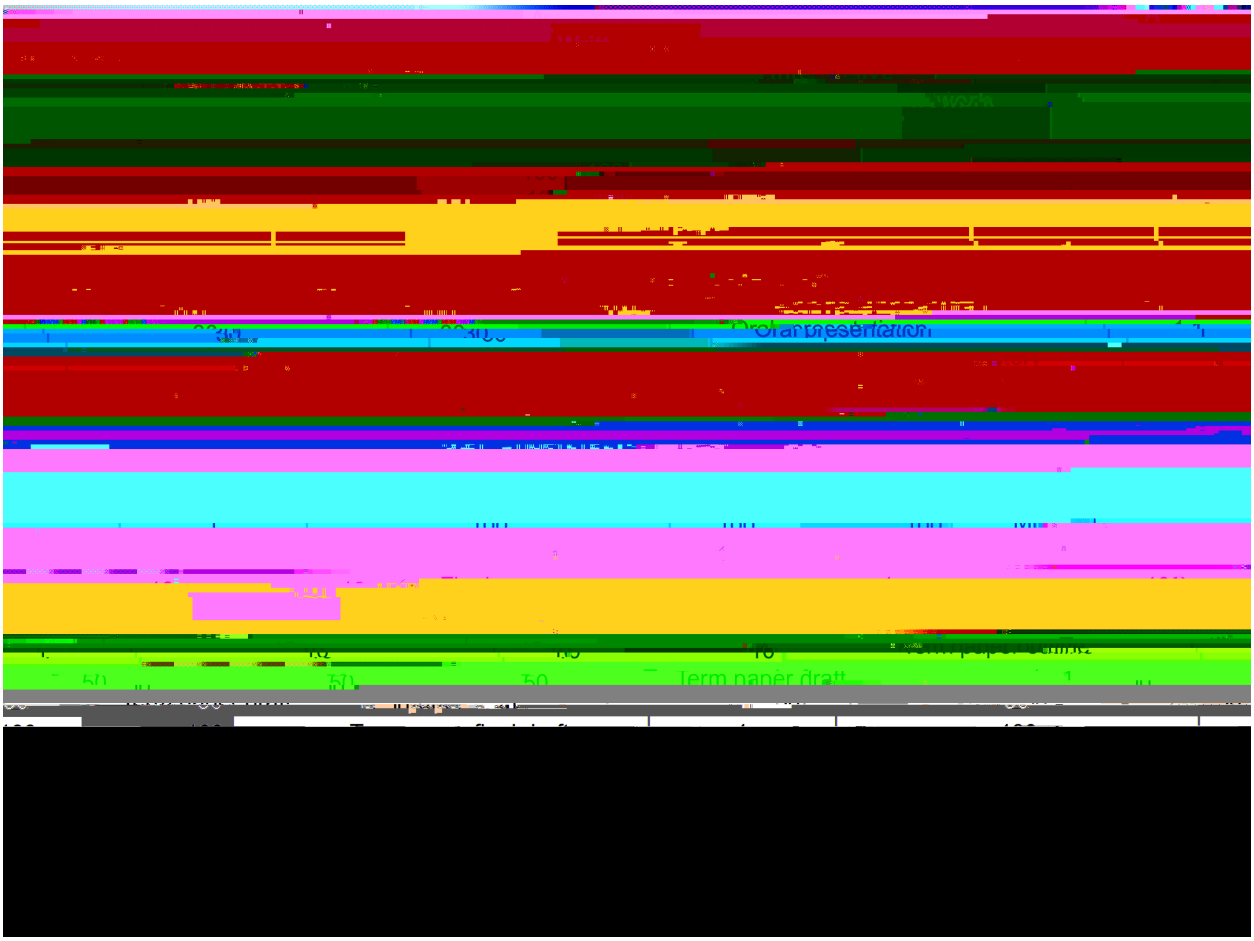
**Support for term paper*: Assistance with library research can 9.0003 TthSu 1 Tf5 Tm0 0 0 12 108 34378
w<0tud-.001mmunicating sc1D.000. o56d inual c

topics. This ensures that graduate students are engaged with and applying environmental microbiology at an advanced, post-graduate level.

The term paper assignment (described above) must be completed by all students, but graduate students are subject to additional expectations beyond the undergraduate assignment. Graduate student papers must select a highly focused topic on which the student can go further in-depth. Grad term papers must integrate and cite 50% more peer reviewed references in the paper over the undergraduate term papers. Grad student oral

D	50 - 69.99
F	< 50

Assignments turned in after the deadline will have 5% of the total possible points deducted per day it is late. Exceptions may be made in the case of excused absences due to documented family/medical or other reasons or when arrangements have been made with instructor in advance. In general, when an absence is anticipated due to travel or other conflicts, work should be turned in ahead of time.


Oral presentation
Term paper draft

[redacted]

Day	Date	Lecture topic	Reading assignment	Assignments due
[redacted]				
T	10/11/11	MIDTERM EXAM		
[redacted]