

Applied and Environmental Microbiology 2020W (Biol. 4711)

Lecture: 11:30am - 1:00pm, Tuesday and Thursday.

Lecture Room: Room RB3046

Office Hours: 3:00 - 4:00 pm, Monday (or by appointment).

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Outline of topics

1. Evolution of the biosphere
2. Physiological ecology: Microbial energetic and survival.
3. Quantification of environmental microbes (numbers, biomass and activity).
4. Molecular-based detection of microorganisms.
5. Microbial Diversity
6. Water treatments and bioremediation.
7. Microorganisms in aquatic and terrestrial environments.
8. Biogeochemical cycles.

Examinations

Mid-term exams: February 25 (Tuesday).

Due date of research paper: March 31 (Tuesday).

Final exam: To be arranged.

Final date to register: January 17 (Friday).

Final date to withdraw: March 6 (Friday).

Mark distributions:

- 30% for the mid-term exam;
- 50% for the final exam;
- 15% for a 10-page term paper;
- 5% for assignments.

Books and References

Text book:

Environmental Microbiology: From genomes to biogeochemistry, 2nd Ed (2016). By Eugene L. Madsen. Blackwell Publishing.

References:

1. Environmental Microbiology, by R.M. Maier, I.L. Pepper and C.P. Gerba. Published by Academic Press.
2. Microbial Ecology, 4th edition, by R. Atlas and R. Bartha. Published by Benjamin/Cummings.
3. Brock Biology of Microorganisms, by M.T. Madigan and J.M. Martinko. Published by Pearson/Prentice Hall.
4. Selective articles from journals.