

Applied and Environmental Microbiology 2025F (BIOL 4711FA)

Lecture: 4:00 pm - 5:30 pm (Monday and Wednesday)

Lecture Room: RB-3024

Office Hour: Monday, Wednesday (OR by appointment)

Email: ramanna@lakeheadu.ca

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

1st Mid-term exam: September 22 (Monday)

2nd Mid-term exam: October 22 (Wednesday)

Final exam: TBA.

Final date to register: September 15 (Monday)

Final date to withdraw: December 2 (Tuesday)

Mark distributions:

- 40% for 2 Mid-term Exams (20% each)
- 20% for 3 Assignments (5% + 5% + 10%)
- 40% for Final Exam

Books and References

1. **Textbook (recommended):** Environmental Microbiology: From genomes to biogeochemistry (2008). By Eugene L. Madsen. Blackwell Publishing
2. Environmental Microbiology, by R.M. Maier, I.L. Pepper and C.P. Gerba. Published by Academic Press.
3. Selective articles from journals.