

*This syllabus is a general representation of the course as previously offered and is subject to change.*

## **MICB 201 – Introductory Environmental Microbiology**

General Course Syllabus (as of January 2020)

### **About the Course:**

**Course Description:** A course on prokaryotic diversity and the impact and applications of bacterial and archaeal metabolic, genetic and growth processes in environmental contexts.

**Course Format:** Lecture

**Credits:** 3

**Pre-requisites:** One of BIOL 112, BIOL 200, SCIE 001. For students with BIOL 112, CHEM 121 is recommended.

### **Course Learning Objectives:**

By the end of this course, students will be able to:

- Demonstrate their knowledge of prokaryotic biodiversity.
- Integrate their new knowledge about prokaryotic biodiversity and its importance with their previous knowledge of the Earth's biodiversity.
- Apply basic information about prokaryotic diversity (metabolic, genetic and growth processes) to the understanding of environmental issues that concern planetary and human health (e.g. antibiotic-resistance, pollution).
- Apply information to solve problems (including quantitative problems) that deal with prokaryotic biodiversity and environmental microbiology.

### **Textbooks and Additional Resources:**

**Textbook:** There is no commercial textbook required for MICB 201. MICB 201 uses a Custom e-Text posted on Canvas. Students who wish to consult a commercial textbook should ask the instructor for recommendations.

**iClickers:** iClickers are used to collect student responses to multiple choice questions posed during class. Each student is expected to purchase an iClicker from the UBC Bookstore, keep it in good working order and bring it to every class. Students should register their iClicker on the MICB 201 Canvas site to receive Clicker marks.

**Canvas:** The MICB 201 Canvas site (on [canvas.ubc.ca](http://canvas.ubc.ca)) is used to post slides, questions and problems, answers, learning objectives, exam information, important announcements, grades and other items. For this reason, students should consult the site on a regular basis to avoid missing important information that can impact their learning and potentially their grade.

## Evaluation:

The following is a summary of the grade distribution for MICB 201. Grades in MICB 201 are not scaled no matter how low or how high the average overall course grade.

Assessment	Weight
Midterm Exam (Chapters 0-3)	25%
Final Exam (Chapters 4-10)	50%
iClicker Questions (in-class)	10%
Canvas Assignments (on-line; 5 x 3%)	15%

**Exams:** Exam questions are multiple choice format. The Midterm and Final Exams will test different content, but the Final Exam will pose questions that require students to draw on factual and conceptual information students learned for the Midterm exam. In other words, the final exam is cumulative. Exams are closed book; however, a memory aid consisting of a single US-letter-sized page is allowed.

**iClicker:** iClickers are used to collect student responses to multiple choice questions posed during class. The primary purpose of iClicker use is to allow students to monitor their own understanding and to give the instructor insight into student understanding. This being said, because both iClicker questions and exam questions are multiple choice, students should view each iClicker question as potential exam practice. iClicker questions are marked solely on a participation basis, and students will receive full marks for iClicker participation if they answer 80% of the questions posed. iClicker participation marks will only be included in the calculation of a student's course grade if they raise a student's course grade.

**Canvas Assignments:** There will be 5 on-line Assignments to be released and due on Canvas.

## Schedule of Topics:

0. Environmental Microbiology and MICB 201
1. Introduction to Bacterial and Archaeal Diversity
2. Cell Structure
3. Genomes and Genomics
4. Sensing and Responding to the Environment

### Midterm Exam

5. Growth and Environment
6. Nutrition and Metabolism
7. The Heterotrophic Way of Life
8. The Autotrophic Way of Life
9. Bacteria and Archaea on the Farm
10. Biodeterioration, Biotechnology and Bioremediation

### Final Exam

## **University Policies:**

*UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence.*

*UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom.*

*UBC provides appropriate accommodation for students with disabilities and for religious, spiritual and cultural observances.*

*UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.*

*Details of the policies and how to access support are available on [the UBC Senate website](#).*