

BIOC17H3

Microbiology: The Bacterial Cell

-2017-

Course Professor: Dr. Mauricio Terebiznik
Lab Coordinator: Professor Dr. Shelley Brunt

- Course description:

In this course, students will be introduced to the general principles of microbiology and microbiology laboratory technics. Topics include: "History and relevance of microbiology", "Origin of life and evolution of microbes", "Microbial classification and phylogeny", "Cellular structure, function and replication" and "Microorganisms in health and disease". Students will be expected to develop an understanding on these subjects, and be able to use them in class and in the laboratory.

- **Prerequisite:** [[BIOB10H3 and BIOB11H3] or BIOB10Y3]

Exclusion: (BGYC17H3), MGY377H, (MBY377H)

Breadth Requirement: Natural Sciences

- Lectures:

Fridays 9:00 to 11:00
Location Room SY 110

- Office hours:

Friday 11-12h or request an appointment by e-mail:

terebiznik@utsc.utoronto.ca.

Professor Terebiznik's office is located in the Science Wing fifth floor, room 535

Please use the email only for questions with straightforward answers.

Questions involving detailed answers will be addressed at office hours

-Lectures:

Slides will be uploaded on the intranet one day in advance. Students should print and bring outlines to class to take notes.

Important: The attendance to lectures is not mandatory but highly recommend to succeed in the course. Lectures are not exclusively based on the text book you will need lectures notes to study for the

exams. The text book chapters corresponding to the topics presented in the lectures will be indicated in the lectures handouts and in figure numbers.

-Laboratory:

The attendance to practicals is mandatory. Please, for more information please consult the **Laboratory outline**

-Text books:

-Lectures:

The Pearson custom Library for the Biological Sciences- BIOC17 Microbiology- Available in bookstore

- Laboratory:

Microbiology: Laboratory Theory and Application by M. Leboffe and B. Pierce. Course costumed edition. Available in bookstore

- Exams and grading :

Midterm exam: 24% of the final grade. The midterm exam includes material from the lectures delivered before the reading week. It doesn't include a Laboratory component. The exam consists of 60-70 multiple choice questions, with 5 possible answers. Duration 2 hours

-Final exam: Consist of a laboratory and a lecture component.

The lecture component (35% of the final grade) is **not cumulative** and consists of 60-70 multiple choice questions with 5 possible answers the questions are based on the lectures and assigned readings that were not included in the midterm exam.

The laboratory component of the final exam contributes to 15% of the final grade. For the grade distribution for the laboratory, including **lab reports and participation**, please see the **Laboratory information and schedule document** .

Participation in class during lectures and lab practicals will be considered for your final grade.

Lectures outline:

The following outline is tentative and the order of subjects and topics listed could change as the course develops

Consult UTSC 2016-2017 calendar for important sessional dates and related information

	TOPIC	
Lecture 1	Introduction to the microbial world From the discovery of microbes to the golden age of Microbiology.	Jan 6
Lecture 2	Germs Theory of Diseases. Microbial origin and evolution.	Jan 13
Lecture 3	Microbial identification and phylogeny Microbial diversity and metabolism	Jan 20
Lecture 4	Guest lectures: Microbes in public health. Microbes in your food	Jan 27
Lecture 5	Bacterial cell: Cell wall and membranes: Composition, biochemistry and function.	Feb 3
Lecture 6	Bacterial motility, mechanism structure and function. Discussion for the midterm exam	Feb 10
Lecture 7	Bacterial secretion systems, function and relevance Chemotaxis in bacteria. Quorum Sensing	Feb 17
	Reading Week	Feb 21-25
Midterm	Exam day TBD	
Lecture 8	Bacterial cell cycle, cytoskeleton and chromosomal replication	Mar 3
Lecture 9	Extrachromosomal elements. Horizontal gene transfer, mechanism and relevance.	Mar 10
Lecture 10	Bacteria in health and disease. Commensal and pathogenic flora. Immune recognition of bacteria.	Mar 17
Lecture 11	Virus, general characteristics, structure, taxonomy and pathogenesis	Mar 24
Lecture 12	Guest Lecture: Antibiotic Resistance. Discussion for the final exam.	Mar 31
Final exam	TBD	

