

# Biol 371/2 Microbiology

2014-2015

**LECTURES:** Wednesdays and Fridays 11:45-1:00 p.m. HB130

**INSTRUCTOR:** Chiara Gamberi, *Ph. D.*, Affiliate Assistant Professor, Biology Department, Concordia, and Visiting Professor, Chemistry Department, Université de Montréal.

**OFFICE:** SP375.35

**OFFICE HOURS:** Friday 1-2:30 **only by appointment**

**CONTACT:** [chiara.gamberi@concordia.ca](mailto:chiara.gamberi@concordia.ca)

**(This is the best way to contact me. Please put Biol 371 in the subject line. You must include your name and student ID in all messages)**

**TEACHING ASSISTANT:** Mahdiah Tabatabaei Shafiei, email: mtaba70@yahoo.com

**TEXTBOOK:** Brock Biology of Microorganisms 14<sup>th</sup> Ed. By M.T. Madigan, J. M. Martinko, K. S. Bender, D. H. Buckley, D. A. Stahl. Pearson Publishers  
**N. B. Additional, complementary, readings from current research publications will be assigned.**

**PRE-REQUISITES:** Six credits chosen from BIOL 226, 261, CHEM 271; or permission of the Department and of the instructor.

**COURSE DESCRIPTION:** The topics cover in-depth studies of the structure and function of microbes. Emphasis is placed on the genetic and biochemical characteristics distinctive of microbes. Consideration is given to how microbes impact on and contribute to the global environment and the quality of human life. Lectures only.

<b>Course topics</b>	<b>Textbook chapter(s) (N.B. Complementary readings from current scientific literature will be presented and/or assigned)</b>
1. Introduction to Microorganisms and Microbiology	1
2. Cell structure and function in <i>Bacteria</i> and <i>Archaea</i>	2
3. Microbial growth	3
4. Microbial growth control	5, 18
5. Major biosynthetic pathways and functional diversity (e. g. phototrophy, chemolithotrophy, fermentations, anaerobic respirations, hydrocarbon metabolism)	12, 13, 14, 20
6. Viruses: an overview	9
7. Microbial Habitats and Diversity	18, 19
8. Symbioses	22
9. Microbial interactions with humans and the microbiome	23
10. Microbial interactions with humans and pathogenesis	23, 29, 30, 31
11. Overview on parasitic diseases	32
12. Water and food treatment and preservation	31
13. Proteobacteria	15 (selected examples)
14. Other bacteria	15 (selected examples)
15. Archaea	16 (selected examples)
16. Microbial Eukaryotes (Protists, Fungi, Algae)	17 (selected examples)

**LECTURES:** will be posted on Moodle after class.

**RECOMMENDATIONS:** Students are expected to participate **fully** in all activities and to regularly study the topics presented in the lectures and assigned readings. Please come with curiosity for the course subject and an open mind; ask questions and develop critical skills. Students who miss a lecture are expected to obtain lecture notes from their classmates. Please inform the instructor **at the beginning of the term**, or as soon as possible in the case of an injury, of any difficulties or any physical or learning disabilities, so that you can be properly accommodated. **Please write your tests clearly and concisely!**

**GRADING:**

**1. Mid-term exam:**

**October 1, 2014: all materials presented up to and including Sept 26; 25% of final grade**

**2. Take home assignment:**

**Due November 5, 2014; 30% of final grade**

**3. Final exam, cumulative, 45% of final grade**

## MARKING SCHEME:

Grades: A<sup>+</sup> > or = 90, A 85-89, A<sup>-</sup> 80-84, B<sup>+</sup> 77-79, B 74-76, B<sup>-</sup> 70-73, C<sup>+</sup> 67-69, C 64-66, C<sup>-</sup> 60-63, D<sup>+</sup> 57-59, D 54-56, D<sup>-</sup> 50-53, F < 50

**No makeup or supplemental exams** will be available. Email the instructor before the test to inform of any illness or legitimate reason (religious holiday, funeral) for not writing. When missing an exam reasonable evidence (medical note, obituary) must be produced by the next lecture. The value of your final exam will be increased to compensate for the missing test.

**ACADEMIC INTEGRITY AND ACADEMIC CODE OF CONDUCT:** This course, like all other courses offered at Concordia University, follows the 'Academic Integrity and the Academic Code of Conduct'. **Students must inform themselves** on these fundamental topics and read over the following:

<http://registrar.concordia.ca/calendar/17/17.10.html>

<http://provost.concordia.ca/academicintegrity/misconduct/>

<http://provost.concordia.ca/academicintegrity/plagiarism/>

**Microbiology (BIOL 371) has a zero tolerance policy for any cheating, plagiarism, personation, document falsification, as well as any other form of dishonest behavior related to achieve academic gain or the avoidance of evaluative exercises.**

**In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.**

## STUDENT SERVICES

<http://www.concordia.ca/info/currentstudents/studentsservices/>

- **Concordia Counselling and Development:** <http://cdev.concordia.ca/> (career services, psychological services, student learning, etc.)
- **The Concordia Library Citation and Style Guides:** <http://library.concordia.ca/help/howto/citations.html>
- **Advocacy and Support Services** <http://supportservices.concordia.ca/>
- **Student Transition Centre** <http://stc.concordia.ca/>
- **New Student Program** <http://newstudent.concordia.ca/>
- **Access Centre for Students with Disabilities** <http://supportservices.concordia.ca/disabilities/>
- **Student Success Centre** <http://studentsuccess.concordia.ca/>
- **The Academic Integrity Website** <http://provost.concordia.ca/academicintegrity/>
- **Financial Aid & Awards** <http://web2.concordia.ca/financialaid/>
- **Health Services** <http://www-health.concordia.ca/>