

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

COURSE TITLE: Principles of Microbiology

CODE NO. : Biol. 2111

SEMESTER: Fall

PROGRAM: Collaborative B.Sc.N.

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DATE: June 2010 **PREVIOUS OUTLINE DATED:** June 2009

APPROVED: "Marilyn King" **Aug. 2010**

CHAIR, HEALTH PROGRAMS

DATE

TOTAL CREDITS: 3

PREREQUISITE(S): OAC/12U level biology or equivalent

HOURS/WEEK: 3 hours of lecture per week plus 3 hours of laboratory per week

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For additional information, please contact the Chair, Health Programs
School of Health and Community Services
(705) 759-2554, Ext. 2689

I. COURSE DESCRIPTION:

This course is an introduction to microbiology and is offered to students in the Bachelor of Science in Nursing program. The topics covered include morphology and structure, classification, microbiology techniques, microbial nutrition, growth, environmental effects on microbes, mutation and genetic recombination, sterilization and disinfection, and antimicrobial chemotherapeutic agents. Students cannot retain credit for both BIOL 2111 and BIOL 2110.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Define the essential differences in structure and function between prokaryotes and eukaryotes.
2. Acquire and utilize the appropriate terminology related to microbiology as a scientific discipline.
3. ***Acquire the ability to practice aseptic technique both in the laboratory and as it would apply to clinical settings.***
4. Describe the various types of microbes from a morphological perspective and be able to discuss aspects of their nutritional and growth requirements, reproductive styles, techniques utilized to control their growth, and pathological conditions caused by representative organisms.
5. Successfully produce pure cultures of microbes in a variety of media, through experience in the laboratory setting.
6. Demonstrate a facility for the observation of microbes using microscopic, staining and isolation techniques.

III. TOPICS:

1. Introduction to Microbiology
2. Prokaryotes and Eukaryotes
3. Nutritional Types of Bacteria
4. The Light Microscope and Staining
5. How to Cultivate Microbes
6. How to Isolate a Pure Culture of Microbes
7. The Morphology and Structure of Bacteria
8. What Microbes Need to Eat; Nutritional Requirements
9. Microbial Growth
10. The Environment and Its Effects on Microbes
11. How to Kill a Microbe I: Chemical Agents
12. How to Kill a Microbe II: Physical Agents
13. Antimicrobial Chemotherapeutic Agents
14. Microbial Normal Flora and Microbial Diseases

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Strelkauskas, A., Strelkauskas, J., Moszyk-Strelkauskas, D. (2010). *Microbiology: A clinical approach* (1st ed.). New York, NY: Garland Science Taylor and Francis.

Pollack, R. A., Findlay, L., Mondschein, W., Modesto, R. R. (2009). *Laboratory exercises in microbiology* (3rd ed.). Toronto, ON: John Wiley and Sons.

A clean, white, laboratory coat that is separate from the one used in the clinical setting. You may use the same lab coat that was used for your A&P course.

Several grease pencils (black or red) or Sharpie markers (either can be obtained in any office supply retail outlet) for labelling of glassware, plates, etc.

A pair of laboratory safety goggles/glasses. These may be purchased at the Campus Shoppe.

An additional box of disposable gloves; these may be purchased at any drug store or health supply store. There will be an initial supply of gloves available in the laboratory, but students will need to purchase one additional box of gloves.

V. EVALUATION PROCESS/GRADING SYSTEM:

The pass mark for this course is 60% (a "C" grade). The final grade will be determined based on the following:

Midterm Exam (full lecture period):	30%
Final Exam (3 hour; schedule TBA)	40%
Laboratory Component	30%

Note: Students who miss either the midterm or the final exam without notifying the instructor (759-2554 ext. 2630) **BEFORE the exam** will receive a zero (0) grade for that exam. It is **STRONGLY** recommended that students who miss the exam for an emergency reason contact the instructor (via phone, written note or email using the Sault College email server) before the exam to alert the instructor of their absence. On the first day back to classes **IT IS THE STUDENT'S RESPONSIBILITY** to contact the instructor to arrange an alternate exam date. **Missed laboratory quizzes will receive a zero (0) grade; NO alternate dates will be provided for writing these quizzes.** There will be no 'make-up' labs for completing the assigned laboratory exercises; students must 'catch-up' in subsequent lab periods.

MIDTERM GRADES:

The determination of midterm grades as "S" or "U" will be based on the cumulative grades of all tests and/or laboratory work completed up to the date of submission of midterm grades. Any student who does not achieve a passing grade on the majority of graded work will receive a "U" grade at midterm. Those who do receive a "U" grade at midterm are encouraged to schedule a meeting with the professor for additional help towards success in the course.

The following semester grades will be assigned to students:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 – 100%	
A	80 – 89%	4.00
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

NOTE:

Mid Term grades are provided in theory classes and clinical/field placement experiences. Students are notified that the midterm grade is an interim grade and is subject to change.

VI. SPECIAL NOTES:

Attendance

Students are expected to attend **all** classes and laboratory exercises. Various handouts may be given out during class/lab and students are responsible for keeping up with the material missed. The easiest way to keep up is to ATTEND CLASS.

PLEASE NOTE: As is stated in your B.Sc.N. Student Manual: "Punctual and regular attendance at the various academic exercises is required of all students. Unexcused absences in excess of 20% may jeopardize receipt of credit for the course. An unexcused absence is one in which the professor was not notified of the absence. An excused absence includes absences where the professor is notified via voice mail, in person, via the internal (college) email server or via a written note." This policy will be adhered to **RIGOROUSLY**. It is imperative that for success to occur in this course, attendance be at least 80% for both lectures and laboratory exercises.

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.