

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 2009 **PREVIOUS OUTLINE DATED:** June 2008

APPROVED: "Lucy Pilon"

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:

Talaro, K.P. (2009). *Foundations in Microbiology: Basic Principles*. Toronto: McGraw-Hill

LeBoffe, M. J. and B. E. Pierce. (2006). *Microbiology Laboratory Theory and Application*, 2e. Englewood, Colorado: Morton Publishing Company.

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 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.

For such reasons as program certification or program articulation, certain courses require minimums of greater than 50% and/or have mandatory components to achieve a passing grade. It is also important to note, that the minimum overall GPA required in order to graduate from a Sault College program remains 2.0.

All NURS courses require 60% for a passing grade.

All science courses, including BIOL2105, BIOL2111, CHMI2220 and elective courses require 50% for a passing grade.

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.

Course Outline Amendments:

The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Retention of Course Outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Prior Learning Assessment:

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit from the program coordinator (or the course coordinator regarding a general education transfer request) or academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question. Please refer to the Student Academic Calendar of Events for the deadline date by which application must be made for advance standing.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio.

Substitute course information is available in the Registrar's office.

Disability Services:

If you are a student with a disability (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Disability Services office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

Communication:

The College considers **WebCT/LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the **Learning Management System** communication tool.

Plagiarism:

Students should refer to the definition of "academic dishonesty" in *Student Code of Conduct*. A professor/instructor may assign a sanction as defined below, or make recommendations to the Academic Chair for disposition of the matter. The professor/instructor may:

- (i) issue a verbal reprimand,
- (ii) make an assignment of a lower grade with explanation,
- (iii) require additional academic assignments and issue a lower grade upon completion to the maximum grade "C",
- (iv) make an automatic assignment of a failing grade,
- (v) recommend to the Chair dismissal from the course with the assignment of a failing grade.

In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Student Portal:

The Sault College portal allows you to view all your student information in one place. **mysaultcollege** gives you personalized access to online resources seven days a week from your home or school computer. Single log-in access allows you to see your personal and financial information, timetable, grades, records of achievement, unofficial transcript, and outstanding obligations. Announcements, news, the academic calendar of events, class cancellations, your learning management system (LMS), and much more are also accessible through the student portal. Go to <https://my.saultcollege.ca>.

Electronic Devices in the Classroom:

Students who wish to use electronic devices in the classroom will seek permission of the faculty member before proceeding to record instruction. With the exception of issues related to accommodations of disability, the decision to approve or refuse the request is the responsibility of the faculty member. Recorded classroom instruction will be used only for personal use and will not be used for any other purpose. Recorded classroom instruction will be destroyed at the end of the course. To ensure this, the student is required to return all copies of recorded material to the faculty member by the last day of class in the semester. Where the use of an electronic device has been approved, the student agrees that materials recorded are for his/her use only, are not for distribution, and are the sole property of the College.