



**I. COURSE DESCRIPTION:**

**This course is an introduction to microbiology and is offered to students in the nursing science 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 Protists
5. The Light Microscope and its Use in Visualizing Microbes Alone or in Combination with Staining Techniques
6. How to Cultivate Microbes
7. What Microbes Need to Eat; Nutritional Requirements

8. How to Isolate a Pure Culture of Microbes
9. The Morphology and Structure of Bacteria
10. The Naming and Classification of Bacteria; Bergey's Manual
11. The Viruses
12. Microbial Growth
13. The Environment and its Effects on Microbes
14. Microbial Genetics: How Microbes Reproduce, Recombine and Mutate
15. How to Kill a Microbe: or, if you can't kill it, at least inhibit its growth
16. What to Use for Sterilizing and Disinfection I: Chemical Agents
17. What to Use for Sterilizing and Disinfection II: Physical Agents
18. Disinfection with Chemical and Physical Agents
19. Antimicrobial Chemotherapeutic Agents

#### IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

***I. Edward Alcamo. (2001). Fundamentals of Microbiology (6th ed.). Mississauga: Jones and Bartlett Publishers.***

***I. Edward Alcamo. (2001). Laboratory Fundamentals of Microbiology (6th ed). Mississauga: Jones and Bartlett Publishers.***

***I. Edward Alcamo. (2001). Student Study Guide to Accompany "Fundamentals of Microbiology", 6th edition. Mississauga: Jones and Bartlett Publishers.***

**Note: As a service to students, all three of the above REQUIRED texts are packaged together for a discounted price compared to the separate price for all three.**

**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)	50%
Laboratory Quizzes (12; count best 10)	20%

Laboratory quizzes will be based on work covered in the PREVIOUS week's laboratory AND on the background material leading up to the CURRENT week's laboratory.

Note: Students who miss either the midterm or the final exam without notifying the instructor (759-2554 ext. 630) 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 or email) before the exam to alert the instructor of the 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.

The following semester grades will be assigned to students in postsecondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 - 89%	3.75
B	70 - 79%	3.00
C	60 - 69%	2.00
R (Repeat)	59% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field placement or non-graded subject areas.	
U	Unsatisfactory achievement in field placement or non-graded subject areas.	
X	A temporary grade. This is used in limited situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see <i>Policies &amp; Procedures Manual – Deferred Grades and Make-up</i> ).	
NR	Grade not reported to Registrar's office. This is used to facilitate transcript preparation when, for extenuating circumstances, it has not been possible for the faculty member to report grades.	

**VI. SPECIAL NOTES:**Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493, 717, or 491 so that support services can be arranged for you.

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.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. Students who engage in “academic dishonesty” will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. 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.

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.

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

**VII. PRIOR LEARNING ASSESSMENT:**

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

**VIII. DIRECT CREDIT TRANSFERS:**

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.