



## COURSE OUTLINE: BIOL2036 - MICROBIOLOGY

Prepared: Leslie Dafoe

Approved: Bob Chapman, Chair, Health

<b>Course Code: Title</b>	BIOL2036: MICROBIOLOGY FOR THE HEALTH SCIENCES	
<b>Program Number: Name</b>	3400: COLLAB BSCN	
<b>Department:</b>	BSCN - NURSING	
<b>Semesters/Terms:</b>	18F	
<b>Course Description:</b>	This is an introductory microbiology course with applications in the health sciences. It will provide students with the basics of microbial cell structure and function, antimicrobial therapy and drug resistance, the immune system, antibodies, and diagnostic microbiology. The course also examines the involvement of microbes in emerging and re-emerging infectious diseases as well as nosocomial and sexually transmitted infections. <b>PREREQUISITES:</b> BIOL 1506, or 12U Biology, or permission of the instructor. Not available to students in the Biology program. May not be combined with BIOL 2026 for credit. (lec 3, lab 3) cr 3.	
<b>Total Credits:</b>	3	
<b>Hours/Week:</b>	6	
<b>Total Hours:</b>	72	
<b>Prerequisites:</b>	BIOL2105	
<b>Corequisites:</b>	There are no co-requisites for this course.	
<b>Substitutes:</b>	BIOL2026	
<b>This course is a pre-requisite for:</b>	BIO132, BSCN2057, BSCN2107, BSCN2144	
<b>General Education Themes:</b>	Science and Technology	
<b>Course Evaluation:</b>	Passing Grade: 60%, C	
<b>Books and Required Resources:</b>	<p>Microbiology, A Clinical Approach by Strelkauskas, A., A., Edwards, R., Fahnert, G., Prior, J., Strelkauskas. Publisher: Garland Science, Taylor and Francis Edition: 2nd ISBN: 9780815345138</p> <p>Laboratory Exercises in Microbiology by Pollack, Robert A., Lorraine Findlay, Walter Mondschein and R. Ronald Modesto Publisher: Wiley Edition: 4th ISBN: 9781118135259</p>	
<b>Course Outcomes and Learning Objectives:</b>	<b>Course Outcome 1</b>	<b>Learning Objectives for Course Outcome 1</b>
	1. To understand the basic structure and morphology of microorganisms, with emphasis on bacteria. 2. To understand human	1. Be able to describe the various structural features of a single bacterial cell, a bacterial colony and a bacterial culture. 2. Be able to describe innate and adaptive immune defenses in humans, as well as non-immune aspects of how we defend ourselves from infectious diseases.



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	<p>immune and non-immune defenses against infectious disease.</p> <p>3. To understand the nature of infectious diseases and how they relate to epidemiology and diagnostic microbiology.</p> <p>4. To understand the normal flora, opportunistic pathogens and emerging infectious agents.</p> <p>5. To understand how to control the growth and spread of microbes, in order to control them.</p> <p>6. To understand some common nosocomial infections and sexually transmitted diseases.</p> <p>7. To understand sterile technique.</p> <p>8. To be able to culture microbes.</p> <p>9. To identify common pathogenic bacteria.</p>	<p>3. Be able to describe some specific infectious diseases and their sequelae to the human body, as well as how they are spread, and how they can be diagnosed by microbiologists.</p> <p>4. Be able to describe what the normal flora is, what it is composed of, and how it benefits human health. Compare the normal flora to opportunistic pathogens using specific examples. Be able to discuss the nature of, and risks of, both emerging and re-emerging infectious agents on human health.</p> <p>5. Be able to describe chemical, physical and chemotherapeutic mechanisms of microbial control, and how choices are made regarding which to use against particular microbes.</p> <p>6. Be able to describe some common nosocomial infections and their impact on healthcare settings. Be able to describe some common sexually transmitted diseases with regard to identification of causative agent, populations at risk, how disease is transmitted, and how it is treated.</p> <p>7. Be able to demonstrate the use of sterile technique in the lab, in order to facilitate continuous use of said technique in the clinical setting.</p> <p>8. Be able to successfully transfer microbes from one source to another without contamination of the sample, the handler, or the surrounding work area. Be able to choose appropriate media for the successful growth of the sample.</p> <p>9. Be able to name some common human pathogens. Be able to cultivate similar (non-pathogens that are related) microbes in the lab and submit them to known clinically relevant diagnostic tests and antibiotic sensitivity assays. Be able to analyse the results and make conclusions.</p>															
<b>Evaluation Process and Grading System:</b>	<table> <tr> <th>Evaluation Type</th><th>Evaluation Weight</th><th>Course Outcome Assessed</th></tr> <tr> <td>Exam1</td><td>25%</td><td></td></tr> <tr> <td>Exam2</td><td>45%</td><td></td></tr> <tr> <td>Laboratory Exam</td><td>20%</td><td></td></tr> <tr> <td>Laboratory Quizzes</td><td>10%</td><td></td></tr> </table>		Evaluation Type	Evaluation Weight	Course Outcome Assessed	Exam1	25%		Exam2	45%		Laboratory Exam	20%		Laboratory Quizzes	10%	
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<b>Date:</b>	September 6, 2018																
	Please refer to the course outline addendum on the Learning Management System for further information.																