NORTHWESTERN POLYTECHNIC

**DEPARTMENT of SCIENCE**

**COURSE OUTLINE – Spring 2025**

**MI1330 (EC): Medical Microbiology for Health Care Professionals – 3 (3-0-0) 45 Hours, 8 Weeks**

Northwestern Polytechnic acknowledges that our campuses are located on Treaty 8 territory, the ancestral and present-day home to many diverse First Nations, Metis, and Inuit people. We are grateful to work, live and learn on the traditional territory of Duncan's First Nation, Horse Lake First Nation and Sturgeon Lake Cree Nation, who are the original caretakers of this land.

We acknowledge the history of this land and we are thankful for the opportunity to walk together in friendship, where we will encourage and promote positive change for present and future generations.


**INSTRUCTOR:** Dr. Sean Irwin, Ph.D. **PHONE:** (780) 539-2860

**OFFICE:** J224 **E-MAIL:** sirwin@gprc.ab.ca


**OFFICE HOURS:** By appointment

**CALENDAR DESCRIPTION:**

Introductory course in medical microbiology designed for students enrolled in health care related programs. This course begins with basic information on microorganisms (bacteria, viruses, fungi, parasites and prions), the immune system, infection control, transmission of infection, epidemiology, antimicrobials, disinfection and sterilization. The later part of the course concentrates on infectious diseases caused by pathogenic microorganisms.
Notes: Students not enrolled in the Nursing Program require consent of the department.

**PREREQUISITE(S)/COREQUISITE:** None

**REQUIRED TEXT/RESOURCE MATERIALS:**

Totora, G.J. et al., Microbiology: An Introduction (13th ed.), Pearson Education, Inc., San Francisco, CA, 2019.

MI1330 Study Aid (Available at the bookstore)

**DELIVERY MODE(S):** Distance

This course is delivered remotely. There are no face-to-face or onsite requirements. Students must have a computer with a webcam and reliable internet connection. Technological support is available through helpdesk@gprc.ab.ca

**COURSE OBJECTIVES:**

1. To gain an understanding of microbe structure and function.
2. To gain a knowledge of human infectious diseases and how they are transmitted.
3. To gain an understanding of human infectious disease that will facilitate future work in the medical field.
4. To develop critical thinking skills with respect to infectious diseases of the human body.

**LEARNING OUTCOMES:**

Upon successful completion of this course a student will have a working knowledge of the biological basis of the infectious diseases of the human body.

**TRANSFERABILITY:**

Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at the Alberta Transfer Guide main page http://www.transferalberta.ca.

**Please note that a grade less than C+ is not accepted for transfer to the U of A for MMI 133. A minimum grade of C+ is required to receive credit for MI1330 in the Nursing Program.**

** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. **Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability**

**EVALUATIONS:**

| | | |
|---|---|---|
| Midterm I - | 22% | - In order to defer an exam due to |
| Midterm II - | 30% | illness you will require a medical note. |
| Assignments - | 8% | |
| Online Activities – | 5% | |
| Study Aid - | 5% | |
| Winter Final Exam - | 30% | |

**GRADING CRITERIA: (The following criteria may be changed to suite the particular course/instructor)**

Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

| Alpha Grade | 4-point Equivalent | Percentage Guidelines | | Alpha Grade | 4-point Equivalent | Percentage Guidelines |
|---|---|---|---|---|---|---|
| A+ | 4.0 | 90-100 | | C+ | 2.3 | 67-69 |
| A | 4.0 | 85-89 | | C | 2.0 | 63-66 |
| A- | 3.7 | 80-84 | | C- | 1.7 | 60-62 |
| B+ | 3.3 | 77-79 | | D+ | 1.3 | 55-59 |
| B | 3.0 | 73-76 | | D | 1.0 | 50-54 |
| B- | 2.7 | 70-72 | | F | 0.0 | 00-49 |

**COURSE SCHEDULE/TENTATIVE TIMELINE:**

**MI 1330 EC Spring 2025**

Week 1 Introduction to Microbiology Ch. 1: 2 - 15.
Prokaryotes Ch. 4: pgs. 73 –93; 94 –102 (For review only).
Week 2 Microbial Metabolism Ch. 5: pgs. 110-115 and 120-131.
**Assignment #1 Due – May 12th**
Growth/Control of Growth Ch. 6: pgs. 152-158; 165-168 and Ch. 7.
Microbial Genetics Ch. 8: pgs. 208 - 217; 221-223; 229 - 236.
Week 3 Zoom Session – May 18th 7 pm
Viruses Ch. 13
**Module I Study Aid Due – May 21st**
**Midterm I Thurs. May 22nd 7pm**
Pathogenesis Ch. 15.
Week 4 Principles of Disease Ch. 14
Innate Immunity Ch. *16*.
Adaptive Immunity Ch. *17*
Week 5 **Assignment #2 Due – June 2nd**
Vaccines Ch. 18: pgs. 500 - 503.
Antimicrobials I Ch. 20: pgs. 559 - 573.
Antimicrobials II Ch. 20: pgs. 574 – 577; 579 – 582.
Week 6 Zoom Session – June 8th 7 pm
**Module II Study Aid Due – June 6th**
**Midterm II Tues. June 10th 7pm**
Diseases of the Skin and Eyes Ch. 21
Diseases of the CNS Ch. 22
Week 7 Diseases of the Cardiovascular and Lymphatic System - Ch. 23
Diseases of the Respiratory System Ch. 24
**Assignment #3 Due – June 20th**

| | | |
|---|---|---|
| Week 8 | Diseases of the Gastrointestinal System | Ch. 25 |
| | Diseases of the Genitourinary System | Ch. 26 |

**Zoom Session June 24th 7pm - Assignment #3 Presentations**

**Zoom Session June 25th 7pm - Assignment #3 Presentations**

**Module III Study Aid Due – June 26th**

**Final Exam Fri. June 27th 7pm**

**STUDENT RESPONSIBILITIES:**

**STATEMENT ON PLAGIARISM AND CHEATING:**

Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Conduct section of the College Calendar at https://www.nwpolytech.ca/programs/calendar/ or the College Policy on Student Misconduct: Plagiarism and Cheating at https://www.nwpolytech.ca/about/administration/policies/index.html

**Note: all Academic and Administrative policies are available on the same page.