



Pathophysiology 1 – BIOL 218

University Studies Program

Course Outline

COURSE IMPLEMENTATION DATE: April 2006
OUTLINE EFFECTIVE DATE: September 2021
COURSE OUTLINE REVIEW DATE: April 2026

GENERAL COURSE DESCRIPTION:

An introductory background to pathophysiology, pharmacology, microbiology and immunology. The emphasis is on concepts and how alterations in physiological, biochemical, microbial or immunological factors can have an impact on homeostasis. Prototype diseases and prototype drugs are examined, with an emphasis on integrating scientific processes with nursing practice.

Program Information: This is a required course in the second year of the Bachelor of Science in Nursing Program.

Delivery: The pathophysiology component is delivered face-to-face. The pharmacology component is delivered hybrid.

COTR Credits: 3

Hours for this course: 45 hours

Typical Structure of Instructional Hours:

Instructional Activity	Duration
Lecture Hours	45
Seminars / Tutorials	
Laboratory / Studio Hours	
Practicum / Field Experience Hours	
Other Contact Hours	
Total	45

Practicum Hours (if applicable):

Type of Practicum	Duration
On-the-job Experience	N/A
Formal Work Experience	N/A
Other	N/A
Total	

Course Outline Author or Contact:

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Signature

APPROVAL SIGNATURES:

Department Head
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Department Head Signature

Dean Signature

EDCO

Valid from: September 2021– April 2026

Education Council Approval Date

COURSE PREREQUISITES AND TRANSFER CREDIT:

Prerequisites: BIOL 181 and BIOL 182 or the equivalent.

Corequisites: None

Flexible Assessment (FA):

Credit can be awarded for this course through FA

Yes No

Learners may request formal recognition for flexible assessment at the College of the Rockies through one or more of the following processes: External Evaluation, Worksite Assessment, Demonstration, Standardized Test, Self-assessment, Interview, Products/Portfolio, Challenge Exam. Contact an Education Advisor for more information.

Transfer Credit: For transfer information within British Columbia, Alberta and other institutions, please visit <http://www.cotr.bc.ca/Transfer>.

Students should also contact an academic advisor at the institution where they want transfer credit.

Prior Course Number: N/A

Textbooks and Required Resources:

Textbook selection varies by instructor and may change from year to year. At the Course Outline Effective Date the following textbooks were in use:

Lilly, L.L., Rainforth, C. S., Snyder, J. S., & Swart, B. (2017). *Pharmacology for Canadian health care practice* (3rd ed.). Toronto, ON: Mosby Elsevier.

Hodgson, B. and Kizor, R. (2013). *Saunders Nursing Drug Handbook*. Elsevier and Logan.

Hannon, R.A., and Porth, C. (2017). *Porth Pathophysiology*. (2nd Cdn ed.). Wolters Kluwer.

Please see the instructor's syllabus or check COTR's online text calculator <http://go.cotr.bc.ca/tuition/tCalc.asp> for a complete list of the currently required textbooks.

LEARNING OUTCOMES:

Upon the successful completion of this course, students will be able to

Pathophysiology

- apply the principles of medical terminology to accurately interpret unfamiliar terms;
- recognize the interrelations among structure and function at the tissue, organ system and somatic levels of organization;
- utilize the concept of homeostatic disturbance in the interpretation of a broad range of clinical conditions;
- predict the possible outcomes of disease conditions based on a knowledge of relevant pathophysiology; and
- relate clinical data to observations of patient status.

Microbiology and Immunology

Upon the successful completion of this course, students should be able to

- summarize the basic concepts of nosocomial infections and their prevention;
- summarize the need for the practice of proper specimen collection and handling;
- describe the basic characteristics of the major microbial classes (e.g., bacteria, viruses, protozoa and pathogenic fungi);
- discuss the concept of communicability of microorganisms on the basis of the transmission modes;
- apply basic microbiological principles to effective infection control;
- develop an awareness of infectious diseases of emerging significance;
- describe the physiological mechanisms of nonspecific immunity and its importance in the healing process; and
- describe the physiological mechanisms of specific humoral and cell mediated immunity and how this relates to disease prevention programs.

Pharmacology

- understand medication safety considerations;
- relate issues of drug interactions, polypharmacy and food/drug effects to medication administration;
- understand the key concepts of pharmacokinetics, pharmacodynamics and pharmacotherapeutics as they apply across the lifespan;
- use standard pharmacological definitions and terminology;
- develop an understanding of nursing considerations regarding drug therapies; and
- recognize, retrieve and use appropriate resources to access drug information; and develop teaching strategies to enhance patient education regarding drug therapy.

This course should help students

- use written and oral communication skills effectively, employing methods appropriate to message and context;
- think clearly and critically, fusing experience, knowledge and reasoning into considered judgment;
- identify, interpret, and solve problems, effectively implementing and evaluating proposed strategies;
- gain the ability to quickly assess what is occurring in the patient and monitor for changes in the patient's status; and
- gain the ability to interpret physician presentation to the patient in terms that the patient and family are able to fully understand.

COURSE TOPICS:

Pathophysiology, Immunology, Microbiology

- Cardiovascular System: Heart A&P Review, Ischemic Heart Disease, CHF, Hypertension, Blood Disorders
- Respiratory System
- Urinary System: Acute Kidney Injury, Chronic Kidney Disease, Fluid and Electrolyte Balance, Acid-Base Balance
- Diabetes
- Introduction to Microbiology/Nosocomial Infections
- Microbial Pathogens of Medical Significance
- Nonspecific and Specific Immunity/Healing

Pharmacology

- Principles of Pharmacology
- Anticoagulants and Ischemia Drugs
- Antihypertensives
- Bronchodilators
- Antidiabetic Drugs
- Diuretics
- Electrolytes
- Antibiotics Part #1
- Antibiotics Part #2
- Pharmacology Across the Lifespan

See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.

EVALUATION AND ASSESSMENT:

Assessment and Evaluation:	% of Total Grade	
	Pharm	Patho
First Midterm	10%	20%
Second Midterm	10%	20%
Final Exam	13.3%	26.7%
Total	33.3%	66.7%

Note: Students must achieve a passing grade (60% or greater) in both the pharmacology component and the pathophysiology/immunology/microbiology component in order to receive credit for the course; nursing students must achieve at least 60 percent in each component in order to continue in the BSN program.

Please see the instructor's syllabus for specific classroom policies related to this course, such as details of evaluation, penalties for late assignments and use of electronic aids.

EXAM POLICY:

Students must attend all required scheduled exams that make up a final grade at the appointed time and place.

Individual instructors may accommodate for illness or personal crisis. Additional accommodation will not be made unless a written request is sent to and approved by the appropriate Department Head prior to the scheduled exam.

Any student who misses a scheduled exam without approval will be given a grade of "0" for the exam.

COURSE GRADE:

Course grades are assigned as follows:

Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F
Mark (Percent)	≥ 90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	< 50

A grade of "D" grants credit, but may not be sufficient as a prerequisite for sequential courses.

ACADEMIC POLICIES:

See www.cotr.bc.ca/policies for general college policies related to course activities, including grade appeals, cheating and plagiarism.

****NOTE:** Although the official College transcript will show a single final grade for BIOL 218, separate marks will be calculated for the Pharmacology portion and the Patho/Immuno/Micro portion of BIOL 218. Nursing students must achieve a grade of C or better (60%) in **both** portions to continue in the BSN program.

COURSE CHANGES:

Information contained in course outlines is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational, employment, and marketing needs. The instructor will endeavour to provide notice of changes to students as soon as possible. The instructor reserves the right to add or delete material from courses.