



## **NURS-224 – Health Sciences 4**

### **Health and Human Services**

**Effective Term & Year:** Winter 2027  
**Course Outline Review Date:** 2032-09-01

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**Program Area:** Health

**Description:**

**Health Sciences 4: Applied Health Sciences in Nursing 2**

This course is a continuation of study of concepts related to human pathophysiology, microbiology, immunology, epigenetics, diagnostics, nutrition and pharmacology. Students will also use foundational knowledge from anatomy and physiology to analyze how these concepts can alter the homeodynamic state of the body and how they affect specific diseases within physiological systems (e.g. respiratory, digestive, urinary, and reproductive). Acute and chronic diseases, drug classifications, and common medications are examined, with an emphasis on integrating scientific processes with nursing practice. Students gain an appreciation for the individual differences in hemodynamic state and presentation of health challenges in clients, across the lifespan. The course integrates pathophysiology and pharmacology with decision making that informs nursing care and management of acute and chronic presentations commonly seen in health care settings.

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**Program Information:**

This is a required course for the second year of the Bachelor of Science in Nursing program at College of the Rockies. The materials in this course represent a component of a four-year integrated BSN program.

**Delivery Methods:** On-campus (Face-to-Face)

**Credit Type:** College of the Rockies Credits

**Credits: 3**

**Instructional Activity and Hours:**

Activity	Hours
Classroom, Directed Studies or Online Instruction	42
Seminar/Tutorials	
Laboratory/Studio	
Practicum/Field Experience	
Co-op/Work Experience	
Other	
Total	42

**Course Requisites:**

- Complete all of the following
  - Satisfactory completion of Semester Three of the second year of the BSN program.
  - Completed or concurrently enrolled in:
    - [NURS220](#) – Health & Healing 4 (6)
    - [NURS225](#) – Nursing Practice 3 (8)

**Prior Learning and Recognition:** No

**Course Transfer Credit:**

For information about receiving transfer credit for courses taken at either British Columbia or Alberta institutions, please see <https://www.bctransferguide.ca/> or <https://transferalberta.alberta.ca> . For more transfer credit information, please visit <https://www.cotr.bc.ca/Transfer>

All requests for course transfer credit from institutions in British Columbia or elsewhere should go to the College of the Rockies Enrollment Service office.

**Textbook 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:

Chippewa Valley Technical College, Egert, A., Lee, K., & Gill, M. (2023). *Fundamentals of Nursing Pharmacology*. <https://opentextbc.ca/nursingpharmacology/>

Jarvis, C., Eckhardt, A., Browne, A. J., MacDonald-Jenkins, J., Luctkar-Flude, M. (Eds.). (2024). *Physical examination and health assessment* (4th Cdn. ed.). Elsevier.

OpenStax College (2013). *Anatomy & physiology*. OpenStax College.  
<http://cnx.org/content/col11496/latest/>

Soon, Z. (n.d.). *Pathophysiology*. <https://pressbooks.bccampus.ca/pathophysiology/>

Tyerman, J., Cobbett, S., Harding, M., Kwong, J., Roberts, D., Hagler, D., & Reinisch, C. (Eds.). (2019). *Lewis's Medical-surgical nursing in Canada: Assessment and management of clinical problems* (5<sup>th</sup> ed.). Elsevier.

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

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## Learning Outcomes:

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

- use correct terminology and discuss key concepts of pharmacokinetics, pharmacodynamics and pharmacotherapeutics as they apply across the lifespan;
- apply concepts of microbiology to explore how the immune system is involved in the healing process, how various microbial classes affect the pathogenesis of disease, and the overall nursing management of communicable disease;
- explain the pathophysiological processes and homeostatic changes that occur in the health conditions;
- analyze clinical presentations of health conditions that guide nursing assessment;
- correlate diagnostic and management protocols (i.e. nursing decision support tools) with the pathophysiology of diseases;
- prioritize appropriate nursing interventions in the management of health conditions;
- predict potential outcomes of health conditions; and
- relate theoretical knowledge to examples of how clients present in nursing practice and its application in nursing care plans.

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## Course Topics:

### Process

This course will provide the student with an opportunity to examine pathophysiological processes and related materials from a conceptual viewpoint that builds on previous learning

from year one Anatomy and Physiology courses. Students examine scenarios of disease progression and dialogue about practice examples where the typical presentation varies to foster skills of analysis, pattern recognition, and critical thinking. As a student develops skill in understanding the underlying pathophysiological changes that occur within the individual with a health challenge, they are able to apply this to their clinical reasoning and decision making for nursing practice. Students will access evidence-based resources to examine and apply principles of pharmacology, diagnostic testing, nursing assessment, and decision making to health challenges as they align and coordinate with nursing practice and health and healing courses.

### Featured Concepts:

- Context
- Environment
- Inquiry

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

## Evaluation and Assessments

### Assessment Type: On-Campus (face-to-face)

Assessment Type	% of Total Grade
Exam 1	30%
Exam 2	30%
Exam 3	40%
Total	100%

### Grade Scheme

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>=95	94-90	89-85	84-80	79-75	74-70	69-65	64-60			<60

### Pass requirements:

An overall average of C (60%) or higher is required to pass this course.

### Additional related information/policies:

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

### ATTENDANCE AND ASSIGNMENT REQUIREMENTS:

- Policy 2.1.6 Progression and Re-admission – Bachelor of Science in Nursing

**Exam Attendance:**

Students must attend all scheduled exams at the appointed time and place. Instructors may approve an alternate exam to accommodate an illness or personal crisis. Department heads will consider other written requests. Any student who misses a scheduled exam without prior approval will receive a “0” on the exam.

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**Academic Policies:**

College of the Rockies policies related to courses can be found at <https://cotr.bc.ca/about-us/college-policies/> and include the following:

- Policy 2.1.4 Course Audit
  - Policy 2.4.1 Credential Framework
  - Policy 2.4.3 Students with Documented Disabilities
  - Policy 2.4.4 Student Rights, Responsibilities and Conduct
  - Policy 2.4.8 Academic Performance
  - Policy 2.4.9 Student Feedback and Concerns
  - Policy 2.4.11 Storage of Academic Works
  - Policy 2.5.3 Student Appeal
  - Policy 2.5.5 Prior Learning Assessment and Recognition (PLAR)
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**Course Changes:**

The College of the Rockies updates course outlines regularly to meet changing educational, employment and marketing needs. The instructor will notify students in writing of any updates to this outline during the semester. The instructor reserves the right to revise, add or delete material while meeting the learning outcomes of this course outline.