NORTHWESTERN POLYTECHNIC

CASN ACESI Accredited
Northwestern Polytechnic Department of Nursing Education and Health Studies (Grande Prairie)
Bachelor of Science in Nursing Collaborative Program

DEPARTMENT OF NURSING EDUCATION AND HEALTH STUDIES

COURSE OUTLINE – Winter 2025

NS1160 (A3/B3): Pathophysiology & Pharmacology I

3 (3-0-0) 45 Hours for 15 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:	Eleni Hansen MN, RN (Pharmacology)	**INSTRUCTOR:**	Dr. Sean Irwin PhD (Pathophysiology)
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OFFICE HOURS:	By Appointment		

CALENDAR DESCRIPTION: The focus is the application of human anatomy and physiology to the concepts of pathophysiology and pharmacology. The course focuses on alterations to normal physiology and introduces the concepts of pharmacokinetics and pharmacodynamics in relation to alterations in health. Note: Available only to nursing students in the Collaborative Program.

PREREQUISITE(S) NS1500, NS1205
COREQUISITE: MI1330

REQUIRED TEXT/RESOURCE MATERIALS:

Lilley, L.L., Rainforth-Collins, S., Snyder, Sealock, K., & Seneviratne, C. (2024). *Pharmacology for Canadian health care practice.* (5th Canadian ed.). Toronto, ON: Elsevier.

Hannon, R.A. and Porth, C.M. (2017). *Porth pathophysiology: Concepts of altered health states.* (Second Canadian Ed.). Philadelphia, PA: Wolters Kluwer.

Understanding Alberta's Drug Schedules: https://pharmacists.ab.ca/nPharmacistResources/ABDrugSchedules.aspx

Any current drug handbook or drug handbook software for a PDA or the electronic "Compendium of Pharmaceuticals and Specialties: e-CPS (available at through the library).

SafeMedicate Software – 4 year access from https://www.safemedicate.net/sm_site/store/store_ins_checkout.php

DELIVERY MODE(S): Lecture

LEARNING OUTCOMES:

1. Link knowledge or anatomy and physiology to pathophysiological and pharmacotherapeutic concepts.
2. Demonstrate theoretical understanding of pharmacokinetic and pharmacodynamic principles.
3. Demonstrate theoretical understanding of altered physiology as it relates to changes in health status.
4. Describe the pharmacodynamic classification, nature, properties, and effects of drugs as they relate to altered physiology.
5. Explain the relationship between pathophysiological concepts and pharmacotherapeutic concepts at a novice level.
6. Identify the nursing implications in relation to pharmacotherapeutics and pathophysiology at a novice level.
7. Apply principles of pharmacotherapeutics and pathophysiology to focused non-complex clinical examples at a novice level.
8. Predict common trajectories in pathophysiological processes at a novice level.
9. Prospectively predict common side effects of major drug classes at a novice level.

TRANSFERABILITY:

U of A: NURS116

**** Please note that a grade less than C+ is not accepted for transfer to the U of A for NURS 116. A minimum grade of C+ is required to receive credit in NS1160.**

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.
** 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:

Evaluation	Value	Date	Learning Outcomes
Pathophysiology 50%			
Midterm	**20%**	February 11/12	1, 3, 6 and 8
Final Exam	**20%**	Scheduled by the Registrar's Office	1, 3, 6 and 8
Quizzes	**5%**	The week prior to exams	1, 3, 6 and 8
Infographic Assignment	**5%**	Section A3 – Due Feb. 14th Section B3 – Due April 11th	7

Pharmacology 50%			
Midterm	**20%**	Week 11	1, 2, 4, 6, 9
Critical Thinking Exercise	**Part 1 - 10%** **Part 2 – 20%**	Week 12 & Week 13	1, 2, 3, 4, 5, 6, 7, 8, 9
SafeMedicate License & Foundational Numeracy Exam	**Complete/Incomplete**	Week 14	2, 6

1. **Midterm exam: Week 6 and Week 11**

   Pathophysiology (20%): Assesses concepts in the first five weeks of the course. The exam will be completed in class at HEC.

   Pharmacology (20%): see myClass for concepts and chapters being tested. The exam will be completed in class time at HEC.

2. **Final exam: (20%) During Final Exam Week - TBA**

   Final Exam: Assesses concepts from week 7 – week 15 for Pathophysiology only.

3. **Pathophysiology Infographic Assignment (5%)**

   This assignment will be done in pairs. Using any of the free online infographic tools, create an infographic poster for one of the diseases/conditions in the assignment. Please see myClass for a list of diseases/conditions and more details regarding the assignment.

4. **safeMedicate (Complete/Incomplete) Due Week 14**

   You will be completing a medication administration safety screen online prior to each clinical rotation starting this semester to the end of the program. **You will need to purchase a safeMedicate License in January 2025 that is good for 4 years**. After completing the online registration, you will have access to learning modules that you can complete at your own pace but must be completed prior to the end of this semester. There will be Foundational Numeracy exam to complete in April as well as an *optional* practice exam for medication administration (covering modules up to but not including injections).

5. **Critical Thinking Exercise (30%)**

   The purpose of this assignment is for students to demonstrate critical thinking through application of the nursing process through a pharmacology / pathophysiology scenario. This is an open book in class activity. The students will have to assess, diagnose, plan, implement, and evaluate their plan of care on a selected condition. Please see myClass for detailed explanation and assignment template. Time and a half is automatically built into this assignment. In class assignments are to be completed and submitted in class time on the day that they are administered. Absences without prior notice will result in a zero (0). There will be no makeup in class activities available.

   - **Part 1 (10%)** students will create a patient scenario with a major illness from the list provided. The student will then identify the pathophysiology of the condition, assessments, and applicable nursing diagnoses.

- **Part 2 (20%)** students will identify medications to treat the condition, including mechanism of action, rationale linked to the patients' condition, adverse effects, patient teaching, and nursing interventions applicable to the patient and their condition chosen.

GRADING CRITERIA:

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	95-100	C+	2.3	67-69
A	4.0	85-94	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: *subject to change

Week	Lecture Dates	Pathophysiology	Pharmacology
1 Jan 8	Jan 7/8	Cellular regulation Unit I/Unit II – Chapter 5 Cellular Adaptation, Injury & Death	Chapter 1 Nursing Practice in Canada and Drug Therapy Chapter 3 Legal and Ethical issues in Nursing
2 Jan 15	Jan 14/15	Cellular regulation Unit II – Chapter 6 Genetic control of Cell Function and Inheritance	Chapter 2 Pharmacological Principles Chapter 4 Patient-Focused Considerations Chapter 7 Patient Education and Drug Therapy
3 Jan 22	Jan 21/22	Immunity Chapter 13 Disorders of Hemostasis Chapter 14 Disorders of RBCs	Chapter 9 Vitamins and Minerals Chapter 55 Anemia
4 Jan 29	Jan 28/29	Immunity Chapter 15 Disorders of WBCs	Infection Chapter 43 Antibiotics: Part 1 Chapter 44 Antibiotics: Part 2
5 Feb 5	Feb 4/5	Immunity Chapter 19 Disorders of Immune Response	Infection Chapter 46 Antitubercular Drugs Chapter 45 Antiviral Drugs Chapter 47 Antifungal Drugs
Feb 12	Feb 11/12	Pathophysiology Midterm	
7 Feb 19	**Reading Break**		
8 Feb 26	Feb 25/26	Gas Exchange Chapter 29 Disorders of Ventilation	Gas Exchange Chapter 38 Drugs affecting the Respiratory System Chapter 51 Immunizations
9 Mar 4	March 4/5	Inflammation	Chapter 49 Anti-inflammatory and Antigout Drugs

		Chapter 18 Inflammation, Tissue Repair, Wound Healing	Chapter 11 Analgesic Drugs
10 Mar 11	Mar 11/12	Pain Chapter 49 Somatosensory Function, Pain, and Headache	**Part 1 of Critical Thinking Assignment in class**
11 Mar 25	March 25/26	Ophthalmic & Otic 54 + 55	Chapter 57 – Ophthalmic Drugs Chapter 58 – Otic Drugs
12 Mar 18	March 18/19	Pharmacology Examination	
13 April 1	April 1st/2nd	Thermoregulation Chapter 10 Alterations in Temperature Regulation	**Part 2 of Critical Thinking Assignment in class**
14 April 8	April 8/9	Tissue Integrity Chapter 61 Skin Disorders	Chapter 37 Antihistamines, Decongestants and Antitussives (include Fever) Tissue Integrity Chapter 56 Dermatological Drugs
15	Pathophysiology Exam in Final exam period		

STUDENT RESPONSIBILITIES:

Refer to the College Policy on Student Rights and Responsibilities at:
https://www.nwpolytech.ca/about/administration/policies/fetch.php?ID=69
For policies related to clinical absences, immunizations, uniforms, and other clinical requirements, please see the NWP Department of Nursing Education & Health Studies Student Handbook on myClass

LATE ASSIGNMENT POLICY:

To obtain credit in the course ALL assignments, examinations, and quizzes must be completed. Students are expected to make every effort to complete assignments on time. Assignment submissions are expected on the date determined by faculty. If extensions are necessary, they may be requested up to 48 hours prior to the assignment due date and should be submitted in writing to the faculty member involved. Not all extensions will be granted. In exceptional situations, extension requests within the 48-hour period may be considered. Late assignments will have 5% of total marks (or one letter grade) for the assignment deducted for each day/partial day (including weekend days) beyond the due time. For example, a paper marked at B+ would receive an adjusted grade of B if handed in one day late. After 5 days, a grade of 0 will be awarded to the assignment. If the late penalty places the grade below the necessary pass grade, students will be unsuccessful in the course. When submitting assignments electronically, it is the student's responsibility to ensure the assignment has been received. Papers/assignments may not be rewritten for a higher grade. Concerns regarding grading are to be discussed with the faculty member involved.

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 Northwestern Polytechnic Calendar at https://www.nwpolytech.ca/programs/calendar/ or the Student Rights and Responsibilities policy which can be found at https://www.nwpolytech.ca/about/administration/policies/index.html.
AI use without appropriate citation/reference is considered plagiarism.

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