

**DEPARTMENT of NURSING EDUCATION and HEALTH STUDIES**

**COURSE OUTLINE –Winter 2024**

**Ns1160 (A3/B3/C3): 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.

<b>INSTRUCTOR:</b>	Dr. Deena Honan PhD, RN, CCNE (Pharmacology)	<b>INSTRUCTOR:</b>	Dr. Sean Irwin PhD (Pathophysiology)
<b>OFFICE:</b>	HEC331	<b>OFFICE:</b>	J224/HEC365
<b>PHONE:</b>	780-539-2703	<b>PHONE:</b>	780-539-2860
<b>E-MAIL:</b>	dhonan@nwpolytech.ca	<b>E-MAIL:</b>	sirwin@nwpolytech.ca
<b>OFFICE HOURS:</b>	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. (2021). *Pharmacology for Canadian health care practice*. (4<sup>th</sup> 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).

**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 NURS116.**

**\*\* 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.alberta.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
Midterm Exam	35%	Week 6 for Pharmacology Week 7 for Pathophysiology
Final Exam	35%	Date – <b>TBA</b> during Exam week
Pharm: Clinical Judgement Activity	15%	Week 11 in class
Patho: Quizzes/Assignments	15%	Throughout course
safeMedicate	Pass/Fail	Must purchase before January 13 <sup>th</sup> , 2024 Numeracy Assessment Due week 14

**1. Midterm exam: (35%) Week 6 and Week 7**

Assesses concepts in the first five weeks of the course. The exam will be completed in class at HEC. Pathophysiology and Pharmacology will have separate examinations.

**2. Final exam: (35%) During Final Exam Week - TBA**

Final Exam: Assesses concepts from week 7 – week 15. Pathophysiology and Pharmacology final exams will be written on separate days.

**3. Pharm: Clinical Judgement Activity (15%) Week 11**

The purpose of this assignment is for students to demonstrate critical thinking related to the mechanism of action, nursing assessments, and adverse effects of specific drug classifications. Case studies will be used to frame the information. This will be an in class, open book, web assisted assignment.

**4. Patho: Quizzes (15%) Throughout course**

Quizzes are to be completed and submitted on the day that they are due.

**5. safeMedicate (Pass/Fail) 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 2024 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 a practice exam for medication administration (covering modules up to but not including injections).

**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:**

Week	Lecture Dates	Pathophysiology	Pharmacology
1 Jan 8	Jan 9 / 10	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 16 / 17	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 23 / 24	Immunity Chapter 13 Disorders of Hemostasis Chapter 14 Disorders of RBCs	Chapter 9 Vitamins and Minerals Chapter 55 Anemia
4 Jan 29	Jan 30 / 31	Immunity Chapter 15 Disorders of WBCs	Infection Chapter 43 Antibiotics: Part 1 Chapter 44 Antibiotics: Part 2
5 Feb 5	Feb 6 / 7	Immunity Chapter 19 Disorders of Immune Response	Infection Chapter 46 Antitubercular Drugs Chapter 45 Antiviral Drugs Chapter 47 Antifungal Drugs
Feb 12	Feb 13 / 14	Pharmacology Midterm	
7 Feb 19	Reading Break		
8 Feb 26	Feb 27 /28	Pathophysiology Midterm	
9 Mar 4	March 5 /6	Gas Exchange Chapter 29 Disorders of Ventilation	Gas Exchange Chapter 38 Drugs affecting the Respiratory System Chapter 51 Immunizations
10 Mar 11	Mar 12 / 13	Inflammation Chapter 18 Inflammation, Tissue Repair, Wound Healing	Chapter 49 Anti-inflammatory and Antigout Drugs Chapter 11 Analgesic Drugs
11 Mar 18	March 19 / 20	Pain Chapter 49 Somatosensory Function, Pain, and Headache	Clinical Judgement Activity
12 Mar 25	March 26 / 27	Ophthalmic & Otic 54 + 55	Chapter 57 – Ophthalmic Drugs Chapter 58 – Otic Drugs
13 April 1	April 2 /3	Thermoregulation Chapter 10 Alterations in Temperature Regulation	Chapter 37 Antihistamines, Decongestants and Antitussives (include Fever)
14 April 8	April 9 / 10	Tissue Integrity Chapter 61 Skin Disorders	Tissue Integrity Chapter 56 Dermatological Drugs Review safeMedicate Due
15	Exam		

### **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

### **STATEMENT ON ACADEMIC MISCONDUCT:**

Academic Misconduct will not be tolerated. For a more precise definition of academic misconduct and its consequences, refer to the Student Rights and Responsibilities policy available at <https://www.nwpolytech.ca/about/administration/policies/index.html>.

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

### **Additional Information:**

#### **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.

**Critical Thinking Assignment Rubric (weighted at 15%)**

	<b>0 – 5</b>	<b>6</b>	<b>7</b>	<b>8 – 10</b>	<b>Sub-total</b>
<b>Mechanism of Action</b>	Little to no information regarding the MOA of the identified drug	Some information regarding the MOA of the identified drug	Adequate information regarding the MOA of the identified drug	Very good to excellent information regarding the MOA of the identified drug	
<b>Nursing Assessments</b>	Little to no information regarding the nursing assessments of the identified drug	Some information regarding the nursing assessments of the identified drug	Adequate information regarding the nursing assessments of the identified drug	Very good to excellent information regarding the nursing assessments of the identified drug	
<b>Adverse effects</b>	Little to no information regarding adverse effects of the identified drug	Some information regarding adverse effects of the identified drug	Adequate information regarding adverse effects of the identified drug	Very good to excellent information regarding adverse effects of the identified drug	
<b>TOTAL</b>					<b>/30</b>