

## DEPARTMENT OF NURSING EDUCATION AND HEALTH STUDIES

### COURSE OUTLINE – Fall 2025 & Winter 2026

NS2160A & NS2160B (YA2 YB2): Pathophysiology and Pharmacology II– 6 (3-0-0) 90 Hours/30  
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. Sean Irwin PhD<br>(Pathophysiology)                        | <b>INSTRUCTOR:</b>   | Eleni Hansen<br>MN, PhD Candidate, RN<br>(Pharmacology)<br>*Course Leader |
| <b>OFFICE:</b>       | J224/HEC365                                                    | <b>OFFICE:</b>       | 3 <sup>rd</sup> level HEC                                                 |
| <b>OFFICE HOURS:</b> | By Appointment                                                 | <b>OFFICE HOURS:</b> | By Appointment                                                            |
| <b>EMAIL:</b>        | <a href="mailto:sirwin@nwpolytech.ca">sirwin@nwpolytech.ca</a> | <b>EMAIL:</b>        | <a href="mailto:ehansen@nwpolytech.ca">ehansen@nwpolytech.ca</a>          |

### CALENDAR DESCRIPTION:

The course explores selected episodic and chronic health alterations and the related pharmacological concepts. The focus is on applying foundational knowledge of pathophysiology and pharmacology to evidence-informed nursing practice. Available only to nursing students in the Collaborative Nursing Program.

**PREREQUISITE(S):** NS1160

**COREQUISITE:** None

### REQUIRED TEXT/RESOURCE MATERIALS:

Lilley, L.L., Rainforth-Collins, S., Snyder, J.S. & Swart, B. (2021). *Pharmacology for Canadian health care practices* (5th Canadian ed.). Elsevier. ISBN 978-0-323-08789-6

Hannon, R.A. and Porth, C.M. (2017). *Porth Pathophysiology: Concepts of altered health states* (2nd Canadian ed.). Wolters Kluwer. ISBN 97845119896

Elsevier Adaptive Quizzing (EAQ) 4th edition Next Generation is available for purchase through the NWP Polytechnic bookstore. This is a required online NCLEX prep resource. The EAQ will assist students with preparing to write the NCLEX-RN registration exam. This resource will provide students with a 36-month online review/prep course to use as they progress through the BScN program.

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).

<https://www.etherapeutics.ca/home.whatsnew.action>

### **DELIVERY MODE(S):**

Lecture

### **LEARNING OUTCOMES:**

1. Link knowledge of 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:**

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:

|                                      |      |
|--------------------------------------|------|
| Exam I                               | 20%  |
| Exam II                              | 20%  |
| Exam III                             | 20%  |
| Final Exam                           | 20%  |
| Clinical Judgement Activity In class | 15%  |
| <u>Quizzes pathophysiology</u>       | 5%   |
| Total                                | 100% |

All evaluation components of the course must be completed PRIOR TO being permitted to write the final exam. If you have any exam related accommodations, you must register them in ClockWork by the deadline.

See myClass for examination dates. Both Exam II and Final Examination will have a maximum time of 2 hours during the examination period.

In class activities/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.

### 1. Clinical Judgement Activity (15%)

The purpose of this assignment is for students to demonstrate critical thinking through application of the nursing process through a pharmacology and pathophysiology scenario.

The students will have to assess, diagnose, plan, implement, and evaluate their plan of care.

The clinical judgement activity is an inclass activity with built in time and a half.

## 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                 |

**\*\* Please note that a grade less than C+ is not accepted for transfer to the U of A for NURS 216. A minimum grade of C+ is required to receive credit in NS2160.**

## COURSE SCHEDULE/TENTATIVE TIMELINE:

\*subject to change see myClass for most updated schedule

| Week      | Lecture Dates                    | Pathophysiology                                                                                 | Pharmacology                                                                                                     |
|-----------|----------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| 1 Sept 1  | No Lectures                      |                                                                                                 |                                                                                                                  |
| 2 Sept 8  | Sept 8/10                        | GI<br>37, 38, 39                                                                                | Chapter 39 - Acid-Controlling Drugs<br>Chapter 40 - Antidiarrheals and Laxatives                                 |
| 3 Sept 15 | Sept 15/17                       |                                                                                                 | Chapter 41 - Antiemetic and Antinausea Drugs<br>Chapter 42 - Nutritional Supplements                             |
| 4 Sept 22 | Sept 22/24                       | Endocrine<br>41, 42<br>Endocrine<br>41, 42                                                      | Chapter 33 – Antidiabetic Drugs                                                                                  |
| 5 Sept 29 | Sept 29/Oct 1                    |                                                                                                 | Chapter 31 – Pituitary Drugs<br>Chapter 32 – Thyroid and Antithyroid drugs<br>Chapter 34 – Adrenal Drugs         |
| 6 Oct 6   | Oct 6/8                          | Pathophysiology Exam                                                                            |                                                                                                                  |
| 7 Oct 13  | Happy Thanksgiving – No lectures |                                                                                                 |                                                                                                                  |
| 8 Oct 17  | Oct 20/22                        | In class CJA starting at 9am                                                                    |                                                                                                                  |
| 9 Oct 23  | Oct 27/29                        | Pharmacology Exam #1                                                                            |                                                                                                                  |
| 10 Nov 3  | Nov 3/5                          | Patho All block<br>CNS 1 (Motor Function) 50<br>(Disorders of the Musculoskeletal System) 57-59 |                                                                                                                  |
| 11 Nov 10 | Fall Break November 10-14        |                                                                                                 |                                                                                                                  |
| 12 Nov 24 | Nov 17/19                        | CNS 2 (Brain Function)<br>51                                                                    | Chapter 21 - Cholinergic Drugs<br>Chapter 22 - Cholinergic blocking Drugs<br>Chapter 16 – Antiparkinsonian Drugs |
| 13 Dec 1  | Nov 24/26                        | CNS 3 (Thought, Mood,<br>& Memory)<br>53                                                        | Chapter 15 - Antiepileptic Drugs<br>Chapter 12 - General and Local Anesthetics                                   |
| 14 Dec 1  | Dec 1/3                          | CNS 4 (Sleep Disorders)<br>52                                                                   | Chapter 13 - CNS Depressants<br>Chapter 14 - CNS Stimulants<br>Chapter 18 - Substance Misuse                     |
| 15 Dec 8  | Dec 8/10                         | Review                                                                                          | Chapter 17 – Psychotherapeutics<br>Review if time allows                                                         |
| December  | Exam II in Final Exam Schedule   |                                                                                                 |                                                                                                                  |
| 15 Jan 6  | Jan 7                            | No class due to Connect Care <i>*subject to change based on scheduling</i>                      |                                                                                                                  |
| 16 Jan 12 | Jan 12/14                        | Renal<br>31, 32, 33, 34, 35                                                                     | Chapter 30 - Fluid and Electrolytes<br>Chapter 27 - Coagulation Modifiers                                        |
| 17 Jan 19 | Jan 19/21                        |                                                                                                 | Chapter 19 - Adrenergic Drugs<br>Chapter 20 - Adrenergic Blocking Drugs<br>Chapter 28 - Antilipemic Drugs        |
| 18 Jan 26 | Jan 26/28                        | Cardiac<br>22, 23, 24, 25, 26                                                                   | Chapter 23 – Antihypertensives<br>Chapter 29 – Diuretics                                                         |
| 19 Feb 2  | Feb 2/4                          |                                                                                                 | Chapter 24 - Antianginal Drugs<br>Chapter 25 - Heart Failure<br>Chapter 26 – Antidysrhythmic                     |
| 20 Feb 9  | Feb 9/11                         |                                                                                                 | Pharmacology Review Class                                                                                        |
| 21 Feb 16 | Reading Break                    |                                                                                                 |                                                                                                                  |
| 22 Feb 23 | Feb 23/25                        | Pathophysiology Exam 3                                                                          |                                                                                                                  |
| 23 Mar 2  | March 2/4                        | Pharmacology Exam 3                                                                             |                                                                                                                  |
| 24 Mar 9  | March 9/11                       |                                                                                                 | Guest Presenter                                                                                                  |

|            |                                           |                                                                                  |                                                                                  |
|------------|-------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 25 Mar 16  | March 16/18                               | Disorders of Male & Female Reproductive Systems                                  | Chapter 36 Men's Health Drugs<br>Chapter 35 Women’s Health Drugs                 |
| 26 Mar 23  | March 23/25                               | 44 & 46<br><br>Pregnancy, Development and Congenital Disorders<br>Chapters 2 & 7 | Chapter 52 Antineoplastic Drugs Part 1<br>Chapter 53 Antineoplastic Drugs Part 2 |
| 27 Mar 30  | March 30/<br>April 1                      | Cancer (Neoplasia)<br>Chapter 8                                                  | Chapter 54 -Biological response anti-rheumatic<br>Chapter 50- Immunosuppressants |
| 28 April 6 | April 6/8                                 | Cancer (Neoplasia) Chapter 8                                                     |                                                                                  |
| 29         | Final Examinations in Final exam schedule |                                                                                  |                                                                                  |

### **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 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.