



A POLYTECHNIC INSTITUTION

School of Health Sciences

Program: Bachelor of Technology in Nursing

Option:

NURS 1060
Pharmacology

Start Date: August 16, 2004

End Date: December 10, 2004

Total Hours: 34 **Total Weeks:** 17

Term/Level: 4 **Course Credits:** 2

Hours/Week: 2 **Lecture:** **Lab:**

Other: Online Learning with Online Tutoring

Prerequisites

NURS 1060 is a Prerequisite for:

Course No.	Course Name
NURS 2000	Applied Nursing Science 2
BHSC 2203	Physiology and Pathophysiology 2
NURS 2030	Nursing Practicum 2

Course No.	Course Name
NURS 4530	Nursing Practicum 5
NURS 7100	Community Nursing
NURS 7030	Nursing Practicum 5

■ **Course Description**

This course will present important concepts and principles related to pharmacology. The course will assist students to relate drug action(s) to human physiology and/or pathophysiology and to anticipate effects based on this understanding. Interventions related to monitoring patient response to drugs will be emphasized. The role of the health care professional in health promotion and patient teaching will be discussed. Drug classifications will be presented to assist the learner to appreciate the scope of pharmacological treatment and to sort, categorize and retrieve information about selected drugs.

This course also introduces students to online learning and assists students to improve computer literacy skills required for clinical practice.

■ **Detailed Course Description**

NURS 1060 facilitates the development of a pharmacology knowledge base and an understanding of the legal and ethical responsibilities related to the administration of medications. The course emphasizes the need to continually update pharmacology knowledge in order to practice safely.

■ **Evaluation**

Midterm Exam <i>(Multiple Choice Questions & Problem-based Exercise)</i>	35%	To successfully complete this course, the student must:
Final Exam <i>(Multiple Choice Questions & Problem-based Exercise)</i>	35%	
Case Work	20%	
Seminars	10%	
TOTAL	100%	

Students who do not meet the participation requirement or who do not comply with other BCIT Policies will receive an Unsatisfactory standing and will therefore not pass this course.

■ Course Learning Outcomes/Competencies

Upon successful completion, the student will be able to:

1. apply knowledge of pharmacokinetics and pharmacodynamics to selected drug categories.
2. use a drug classification system as an information source for selected drugs.
3. relate specific drug action(s) to human physiology and/or pathophysiology to predict therapeutic and adverse effects.
4. explain assessments required when administering medications and monitoring patients for therapeutic drug effects, adverse effects, toxicity and drug interactions.
5. discuss nursing responsibilities related to health promotion and patient teaching.
6. discuss a variety of legal and ethical nursing issues related to pharmacology.
7. apply selected pharmacological concepts and principles to patient situations.
8. demonstrate online learning skills including accessing course materials and resources, communicating via e-mail, bulletin board discussion groups, audio conferencing seminars and taking exams.

■ Process Threads

Professionalism

Students develop a knowledge base regarding complex health problems and pharmacology. They anticipate and prepare for possible patient care problems on acute nursing units. They explore cases and respond with sound clinical judgment and advocate for the patient. Students explore the curative/restorative aspects of pharmacology.

Communication

Students improve computer literacy by using Internet course material and resources and by communicating by e-mail and asynchronous and synchronous discussion groups. Students thoughtfully discuss case questions via bulletin board. Students use word processing in compiling group assignments. Students facilitate group functioning to achieve course goals.

Systematic Inquiry

Students use questioning and feedback to help them think critically. Students compare their own work to work done by others and take action to improve own clinical decision making. Students develop independent clinical reasoning. Students develop creative strategies when addressing problems by considering alternative ways of viewing a situation.

Professional Growth

Students focus on facilitating group learning by sharing accurate, relevant information in a professional manner. Students assume responsibility for learning and becoming self-starters. Students value continually updating pharmacology knowledge. Students are responsible and accountable for their actions.

Creative Leadership

Students use facilitation skills within groups so they function productively. They demonstrate credibility, accountability, assertiveness, problem solving, judgment and initiative within groups. Students propose creative ways of solving problems related to drug therapy.

■ Process Threads (cont'd.)

Technical Skill

In the case studies they are studying, students discuss rationales and nursing responsibilities related to administration of medications and to the assessment of patients who receive the medications. Students calculate safe doses, calculate infusion rates, problem solve how to deal with incompatibility issues and propose age-related adaptations in relation to drug therapy. Students develop skills in using educational technology.

■ Verification

I verify that the content of this course outline is current.

Keanee Beech
Authoring Instructor

August 11, 2004
Date

I verify that this course outline has been reviewed.

Katherine Weyler
Program Head/Chief Instructor

Aug. 11, 2004
Date

I verify that this course outline complies with BCIT policy.

Ally Beth Per T. Freeman
Dean/Associate Dean

Aug. 11/2004
Date

■ Instructor(s)

Diane Belyk	Office Location:	SE12-418	Office Phone:	604-432-8910
	Office Hrs.:	as posted	E-mail Address:	Course e-mail
Deborah Yates	Office Location:	SE12-418	Office Phone:	604-432-8911
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Lisa McKendrick-Calder	Office Location:	SE12-418	Office Phone:	604-454-2207
	Office Hrs.:	as posted	E-mail Address:	Course e-mail

■ Learning Resources

Required:

1. Aschenbrenner, D.S., Cleveland, L.W., & Venable, S.J. (2002). *Drug Therapy in Nursing*. New York: Lippincott.
2. Canadian Nurses Association. (2002). *Code of ethics for registered nurses*. Ottawa: Author. (Available online)
3. Registered Nurses Association of British Columbia. (2003). *Standards for registered nursing practice in British Columbia*. Vancouver: Author. (Available online)
4. A pharmacology handbook is required. Deglin, J., & Vallerand, A. (2002). *Davis's drug guide for nurses* (8th ed.) Philadelphia: F.A. Davis is strongly recommended.
5. A medical-surgical text is required.
6. A laboratory and diagnostic tests handbook is required.
7. Headphones/speaker and microphone are required.

■ Information for Students

(Information below can be adapted and supplemented as necessary.)

Assignments: Late assignments, lab reports or projects will **not** be accepted for marking. Assignments must be done on an individual basis unless otherwise specified by the instructor.

Makeup Tests, Exams or Quizzes: There will be **no** makeup tests, exams or quizzes. If you miss a test, exam or quiz, you will receive zero marks. Exceptions may be made for **documented** medical reasons or extenuating circumstances. In such a case, it is the responsibility of the student to inform the instructor **immediately**.

Ethics: BCIT assumes that all students attending the Institute will follow a high standard of ethics. Incidents of cheating or plagiarism may, therefore, result in a grade of zero for the assignment, quiz, test, exam, or project for all parties involved and/or expulsion from the course.

Attendance: The attendance policy as outlined in the current BCIT Calendar will be enforced. Attendance will be based on weekly online discussion postings and monthly seminars.

Illness: A doctor's note is required for any illness causing you to miss assignments, quizzes, tests, projects, or exam. At the discretion of the instructor, you may complete the work missed or have the work prorated. (See Student Medical Certificate form.)

■ Information for Students (cont'd.)

Attempts: Students must successfully complete a course within a maximum of three attempts at the course. Students with two attempts in a single course will be allowed to repeat the course only upon special written permission from the Associate Dean. Students who have not successfully completed a course within three attempts will not be eligible to graduate from the appropriate program.

Course Outline Changes: The material or schedule specified in this course outline may be changed by the instructor. If changes are required, they will be announced in class.

Notes:

The following BCIT Policies apply to this course:

Policy #5013	Course Outline	Policy #5410	Evaluation of Students
Policy #5250	Cheating and Plagiarism	Policy #5201	Attendance
Policy #3501	Responsible Use of Technology	Policy #5251	Student Conduct

Online learning strategies will be used to assist the learner to develop their knowledge of pharmacology and use of educational technology. Concepts and principles of pharmacology will be explored using patient case discussions, accessing databases, instructor consultation and small group audio conferencing seminars.

The course will commence with an orientation to online learning. The student will be expected to demonstrate online learning skills including accessing resources and communicating via e-mail, asynchronous and synchronous communication. Orientation to synchronous audio conferencing will commence Week 3.

Students will participate in ongoing evaluation of the course. Students are welcome to provide evaluative comments throughout the course. A Course Evaluation Survey will be completed at the end of the term.

■ Examination Details

Midterm Exam (Online)

35% of Final Mark

(Multiple Choice Questions & Problem-based Exercise)

The Midterm Exam is a 2-hour open-book exam that includes multiple choice questions and a problem-based patient case exercise. The exam includes course content from Modules 1 to 4.

Multiple Choice Questions:	15 marks
Problem-based Exercise:	30 marks

In Part 1 of the problem-based exercise, the student will be presented with initial information on the patient case. The student must **explain** at least five **pharmacological** issues and/or concerns related to this case. In Part 2 of the problem-based exercise, the student will be provided with additional information on the patient case. The student will then **list** additional issues and concerns and **explain the specific actions** they will take to provide safe and effective drug therapy for this patient. The patient case includes **key issues and concerns** that must be addressed to receive full marks.

Marks will be distributed as follows:

Marks

10	Part 1 — issues or concerns
<u>20</u>	Part 2 — specific actions for safe/effective therapy
30	Total

■ **Examination Details (cont'd)**

Final Exam (Online)

35% of Final Mark

(Multiple Choice Questions & Problem-based Exercise)

The Final Exam is a 2-hour open-book exam that will focus on course content in Modules 5 to 7.

Multiple Choice Questions: 15 marks
Problem-based Exercise: 40 marks

In the problem-based exercise, the student will be presented with a patient case. For Part 1 of the problem-based exercise, the student must **list** at least five **pharmacological** issues and/or concerns related to the patient's at-home and/or pre-operative drug therapy and provide an **explanation** of how these issues or concerns **relate to the patient**. For Part 2 of the problem-based exercise, the student will identify issues or concerns related to the patient's current in-hospital drug therapy and anticipated discharge. For each issue or concern, the student will describe **appropriate actions or nursing intervention(s) and explain the rationale for these actions/interventions**. The patient case includes **key issues and concerns** that must be addressed to receive full marks.

Marks will be distributed as follows:

Marks

10	Part 1 — issues and relationship to patient
<u>30</u>	Part 2 — issues, interventions and rationale
40	Total

Students must achieve a combined average of 50% on these exams.

Please note: Open book permits the use of the course textbook and drug handbook only during the exams. Access to any other resource such as personal notes or online resources is strictly prohibited.

■ **Assignment Details**

30% of Final Mark

The assignments in this course involve weekly patient case discussions and four online seminars. Student will be evaluated on the quality of their work, reporting skills, communication among group members and instructor, and word processing editing skills.

Students need to access the course at minimum, on a weekly basis. Assignments must meet Level 4 requirement for content depth, accuracy and thoroughness. Student's work must reflect application of theory to practice situations.

As assigned, students must assume reporting responsibilities for their group and post assignments on time, in the correct location, and in the correct format. Students must participate in all online seminars.

The online audio conferencing seminars are scheduled for a maximum of one hour four times throughout the term. These seminars are designed to provide students an opportunity to engage in dialogue to clarify difficult concepts, discuss patient case issues and to explore pharmacological concepts and principles within the context of their practicum experiences. An introduction to online seminars is scheduled for Week 3. Subsequent online seminars will be held weeks 5, 8, 12 & 15.

Please note: Further details on evaluation criteria is available online.

Schedule

Week Number	Material Covered	Reference/Reading	Assignment and Due Date
1	<p>Introduction to Course — BCIT Computer Lab Introduction to Online Learning</p> <ul style="list-style-type: none"> Text-based communication technologies <p>Module 1 Drug Classifications, Pharmacokinetics and Pharmacodynamics</p>	<p>NURS 1060 Student Orientation Manual Module — Orientation to NURS 1060 (online)</p> <p>Aschenbrenner — Chapter 1: Nursing management in drug therapy, 1—12.</p> <p>Aschenbrenner — Chapter 4: Pharmacotherapeutics and pharmacokinetics, 43—57.</p> <p>Aschenbrenner — Chapter 5: Pharmacodynamics, 58—63.</p>	<p>Practice online skills: (Monday)</p> <ul style="list-style-type: none"> Access course Tech Tutorial Read course outline and orientation module Access course content modules Read and respond to instructor e-mail Read Discussion message — student profiles Post own student profile by Monday of Week 2 <p>Complete the following by Monday Week 2.</p> <ul style="list-style-type: none"> Read Module 1 and complete readings Access references Post drug information under Module 1 Class topic Complete self-test
2	<p>Module 2 Geriatric Pharmacotherapeutics</p>	<p>Aschenbrenner — Chapter 6: Adverse effects and drug interactions, 64—75.</p> <p>Aschenbrenner — Chapter 9: Life Span: Older adults, 97—106.</p>	<p>Required activities:</p> <ul style="list-style-type: none"> Check e-mail for messages
3	<p>Online Seminar</p> <ul style="list-style-type: none"> Introduction to vClass seminar and question period <p>Module 3 Autonomic Nervous System Drugs</p> <ul style="list-style-type: none"> Adrenergic Agonists and Blockers Cholinergic Agonists and Blockers Auto's Exercise 	<p>Aschenbrenner — Chapter 14: Drugs affecting adrenergic function, 157—182.</p> <p>Aschenbrenner — Chapter 15: Drugs affecting cholinergic function, 185—202.</p>	<ul style="list-style-type: none"> Access "Auto's" Quiz under the Quiz icon on Home page or from Auto's Tutorial.

Week Number	Material Covered	Reference/Reading	Assignment and Due Date
4	Module 3 (cont'd) Renal Drugs <ul style="list-style-type: none"> • Diuretics Introduction to Patient Case Learning	Aschenbrenner — Chapter 31: Drugs affecting diuresis, 530—543 (thiazides and furosemide).	<ul style="list-style-type: none"> • Case Discussion Questions — assign questions to group members and post answers to Module 3 Group Discussion topic by Monday Week 4 Check calendar for group reporting schedule Required activities: <ul style="list-style-type: none"> • Check your e-mail for instructor feedback on your online skills. • Check course contents for group report instructions. • Review your online skills and request instructor help as needed.
5	Module 3 (cont'd) Cardiovascular Drugs <ul style="list-style-type: none"> • Inotropic Drugs — Cardiac Glycosides • Antianginal Drugs • Antihypertensive Drugs Online Seminar <ul style="list-style-type: none"> • Geriatric pharmaco-therapeutics issues in practicum / case review Case — Hypertension / Heart Failure	Aschenbrenner — Chapter 27: Drugs for treating congestive heart failure, 439—452. Aschenbrenner — Chapter 28: Drugs used to treat angina, 453—462. Aschenbrenner — Chapter 30: Drugs affecting blood pressure, 492—529.	Required activities: <ul style="list-style-type: none"> • Audio conferencing seminar as scheduled. • Case Discussion Questions — assign questions to group members and post answers by deadline set by group reporter. • Reporter — summarize group answers as assigned.

Week Number	Material Covered	Reference/Reading	Assignment and Due Date
6	<p>Module 4 Pediatric Pharmacotherapeutics Antibiotic Drugs</p> <ul style="list-style-type: none"> • Sulfonamides, Penicillins, Cephalosporins, Aminoglycosides and Fluoroquinolones • Drug Resistance <p>Case — Ruptured Appendix and Pain Management</p>	<p>Aschenbrenner — Chapter 7: Life span: Children, 77—88.</p> <p>Aschenbrenner — Chapter 47: Principles of antimicrobial therapy, 931—940.</p> <p>Aschenbrenner — Chapter 48: Antibiotics affecting the bacterial cell wall, 941—961 (penicillins and cephalosporins).</p> <p>Aschenbrenner — Chapter 49: Antibiotics affecting protein synthesis, 962—990 (gentamicin).</p> <p>Aschenbrenner — Chapter 50: Miscellaneous antibiotics, 991—999 (ciprofloxacin).</p> <p>Aschenbrenner: Chapter 51: Drugs for treating urinary tract infections, 1000—1010.</p>	<p>Required activities:</p> <p>Case Discussion Questions — assign questions to group members and post answers by deadline set by group reporter.</p> <p>Reminder — Practice exams are available online.</p>
7	<p>Module 4 (cont'd) Central Nervous System — Part 1</p> <ul style="list-style-type: none"> • Opioid Analgesics • Non-steroidal Anti-inflammatory and Other Analgesics/Antipyretics • Narcotic Control Act and Regulations • Equianalgesia <p>Case — Ruptured Appendix and Pain Management (cont'd)</p>	<p>Aschenbrenner — Chapter 24: Drugs that are narcotic analgesics, 375—399.</p> <p>Aschenbrenner — Chapter 25: Drugs for treating fever and inflammation, 400—419.</p>	<p>Required activities:</p> <ul style="list-style-type: none"> • Case Discussion Questions — review and clarify answers posted by group members. • Reporter — summarize group answers as assigned. • Practice exams are available online.
8	<p>Review</p> <p>Online Seminar</p> <ul style="list-style-type: none"> • Case Review/Pain management 	<p>Modules 1—4</p>	<p>Required activities:</p> <ul style="list-style-type: none"> • Online seminar as scheduled. • Practice exams available online

Week Number	Material Covered	Reference/Reading	Assignment and Due Date
9	Module 5 Central Nervous System — Part 2 <ul style="list-style-type: none"> • Anticonvulsants Case — Epilepsy and Schizophrenia	Aschenbrenner — Chapter 17: Drugs that are sedatives, hypnotics and anxiolytics, 227—247. Aschenbrenner — Chapter 20: Drugs for treating seizure disorders, 297—322.	Required activities: <ul style="list-style-type: none"> • Case Discussion Questions — assign questions to group members and post answers by deadline set by group reporter.
10	MIDTERM EXAM — 2 hours Modules 1 to 4 <ul style="list-style-type: none"> • Multiple Choice Questions • Problem-based Exercise 		Exam written online in assigned BCIT computer lab
11	Module 5 (cont'd) Central Nervous System Agents — Part 3 <ul style="list-style-type: none"> • Antidepressants and Antipsychotics Case 1 — Epilepsy and Schizophrenia (cont'd)	Aschenbrenner — Chapter 18: Drugs for treating mood disorders, 248—272. Aschenbrenner — Chapter 19: Drugs for treating thought disorders, 273—296.	Required activities: <ul style="list-style-type: none"> • Case Discussion Questions — review and clarify answers posted by group members. • Reporter — summarize group answers as assigned.
12	Online Seminar <ul style="list-style-type: none"> • Compliance issues/Case Review Module 6 Respiratory Drugs <ul style="list-style-type: none"> • Beta Agonists, Anticholinergics, Corticosteroids, Xanthine Derivatives Case — Asthma and Deep Vein Thrombosis	Aschenbrenner — Chapter 36: Drugs affecting the lower respiratory system, 642—669. Aschenbrenner — Chapter 40: Drugs affecting hormone levels: Corticosteroids and their antagonists, 759—781. Aschenbrenner — Chapter 8: Life Span — Pregnant or Breastfeeding Women, 89—96.	Required activities: <p>Audio conferencing seminar as scheduled/review exam results.</p> <ul style="list-style-type: none"> • Case Discussion Questions — assign questions to group members and post answers by deadline set by group reporter.

Week Number	Material Covered	Reference/Reading	Assignment and Due Date
13	<p>Module 6 (cont'd) Blood Formation and Coagulation</p> <ul style="list-style-type: none"> • Anticoagulants and Anticoagulant Antagonists • Antianemia Drugs <p>Complementary and Adjunctive Therapies</p> <p>Case — Asthma and Deep Vein Thrombosis</p>	<p>Aschenbrenner — Chapter 32 — Drugs affecting coagulation.</p> <p>Aschenbrenner — Chapter 11: Lifestyle, diet and habits: Nutritional considerations, 129—140.</p> <p><i>Herbal remedies information can also be obtained from local pharmacies, health food stores.</i></p>	<p>Required activities:</p> <ul style="list-style-type: none"> • Case Discussion Questions — review and clarify answers posted by group members. <p>Reporter — summarize group answers as assigned.</p>
14	<p>Module 7 Insulins and Oral Hypoglycemic Drugs</p> <p>Case — Type 2 Diabetes and Breast Cancer</p>	<p>Aschenbrenner — Chapter 14: Drugs affecting blood glucose levels, 782—817 (See drug handbook for IV potassium chloride and potassium phosphate).</p>	<p>Required activities:</p> <ul style="list-style-type: none"> • Case Discussion Questions — assign questions to group members and post answers by deadline set by group reporter.
15	<p>Online Seminar</p> <ul style="list-style-type: none"> • Course Evaluation • Adverse Drug Reactions (managing & reporting) <p>Module 7 (cont'd) Antineoplastic Drugs and Related Topics</p> <ul style="list-style-type: none"> • Handling Cytotoxic and Hazardous Drugs • Administration Guidelines • Use of Antiemetics <p>Case — Type 2 Diabetes and Breast Cancer (cont'd)</p>	<p>Aschenbrenner — Chapter 45: Cell cycle-specific drugs, 875—906.</p> <p>BCCA Cancer Therapy Manual available online.</p> <p>Aschenbrenner — Chapter 46: Cell cycle-nonspecific drugs, 907—929.</p>	<p>Required activities:</p> <p>Audio conferencing seminar as scheduled.</p> <ul style="list-style-type: none"> • Case Discussion Questions — review and clarify answers posted by group members

Week Number	Material Covered	Reference/Reading	Assignment and Due Date
16	Module 7 (cont'd)		Required activities: <ul style="list-style-type: none">• Submit adverse drug reaction form• Reporter — summarize group answers as assigned.• Please complete Course Evaluation by clicking on Quiz icon.
17	FINAL EXAM — 2 hours Modules 5 to 7		Date and Room to be announced.