BCIT

Course Outline

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

Operating Unit: Health Sciences
Program: Nursing
Option:

NURS 5061
Clinical Pharmacology for Health Care Professionals

Start Date: September, 2000 **End Date:**

Course Credits: 3 **Term/Level:** 5

Total Hours: 36
Total Weeks: 12

Hours/Week: 3 **Lecture:** **Other:** Distance Learning with Teletutoring
This course is offered through the Nursing Department.

Prerequisites

Course No.	Course Name
Completion of the 2nd year of a health care program such as nursing or related field	

NURS 5061 is a Prerequisite for:

Course No.	Course Name
None	

Course Calendar 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 client response to drugs will be emphasized. The role of the health care professional in health promotion and client 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.

Course Goals

NURS 5061 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 *(Multiple Choice Questions & Problem-based Exercise)*	30%
Final Exam *(Multiple Choice Questions & Problem-based Exercise)*	35%
Case Assignment #1	10%
Case Assignment #2	10%
Legal/Ethical Assignment	15%
TOTAL	100%

To successfully complete this course, the student must:

1. Complete all assignments.
2. Achieve a combined average of 50% in exams.
3. Achieve a final mark of 50%.

Course Learning Outcomes/Competencies

The student will:

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 clients for therapeutic drug effects, adverse effects, toxicity and drug interactions.
5. Discuss responsibilities related to health promotion and client teaching.
6. Discuss a variety of legal and ethical issues related to pharmacology.
7. Apply selected pharmacological concepts and principles to client situations.

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. Students apply an ethical decision-making framework to a drug-related dilemma. They explore cases and respond with sound clinical judgement and advocate for the patient. Students explore the curative/restorative aspects of pharmacology.

Communication
Students thoughtfully discuss case questions. Students use APA style in preparing a paper.

Systematic Inquiry
Students use questioning and feedback to help them think critically. Students develop independent clinical reasoning. Students develop creative strategies when addressing problems by considering alternative ways of viewing a situation.

Professional Growth
Students access 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.

Process Threads (cont'd)

Creative Leadership
Students demonstrate credibility, assertiveness, problem solving, judgement, and initiative. Students propose creative ways of solving problems related to drug therapy.

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.

Course Content Verification

I verify that the content of this course outline is current, accurate, and complies with BCIT Policy.

Kathy Dunn
Program Head/Chief Instructor

June 8/2000
Date

Note: Should changes be required to the content of this course outline, students will be given reasonable notice.

The course outline is a statement of educational intent and direction. It is not to be construed as a contract to deliver instruction or guarantee learning. BCIT reserves the right to amend this outline in cases when unforeseen circumstances may necessitate the alteration of course content, sequencing, timing or evaluation. In such cases, students will be given as much notice as is possible.

The following BCIT Policies apply to this course:

Policy #5013 Course Outline
Policy #5410 Evaluation of Students
Policy #5250 Cheating and Plagiarism

Instructor(s)

TBA	Office No.: TBA	Office Phone: TBA
	Tutoring Hrs.: TBA	E-mail Address:

Learning Resources

Required:

1. Gutierrez, K. (1999). *Pharmacotherapeutics: Clinical decision making in nursing*. Toronto: W.B. Saunders.

2. Canadian Nurses Association. (1997). *Code of ethics for registered nurses*. Ottawa: Author or own current professional code of ethics in your health care field.

3. Registered Nurses Association of British Columbia. (1998). *Standards for nursing practice in British Columbia*. Vancouver: Author or own professional standards for practice ethical decision-making process.

4. A drug handbook is required. Deglin, J., & Vallerand, A. (1999). *Davis's drug guide for nurses* (6th ed.). Philadelphia: F.A. Davis is strongly recommended.

5. **A medical-surgical text is recommended.**

6. **A laboratory and diagnostic tests handbook is recommended.**

BCIT Policy Information for Students

Independent study and instructor tutoring will be used to assist the learner to expand their knowledge of pharmacology and related legal and ethical issues. Concepts and principles of pharmacology will be explored using required readings, patient case discussions and assignments.

Students are encouraged to participate in on-going evaluation of the course by providing feedback on course modules and assignments. A Course Evaluation Survey will be completed at the end of the term.

Examination Details

Midterm Exam **30% 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 is worth 70 marks and will include course content from Modules 1 to 8.

Multiple Choice Questions:	40 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
20	Part 2 – specific actions for safe/effective therapy
30	Total

Final Exam **35% of Final Mark**

Multiple Choice Questions and Problem-Based Exercise

The Final Exam is a 2-hour open-book exam that will focus on course content in Modules 9 to 16.

Multiple Choice Questions	40 marks
Problem-Based Exercise	45 marks

In the problem-based exercise, the student will be presented with a patient case. For Part 1 of the problem exercise, the student must list at least five pharmacological issues and/or concerns related to the patient's at-home 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
35	Part 2 – issues, interventions and rationale
45	Total

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

* Initial patient case information will be provided to the student one week prior to each exam.

Week Number	Material Covered	Reference/Reading
1	**Introductory Module** **Module 1** Drug Classifications, Pharmacokinetics and Pharmacodynamics **Module 2** Geriatric Pharmacotherapeutics	***Gutierrez, K.,*** Chapter 1: The history of pharmacology, 2–4; Sources of drug information, 16–18. ***Gutierrez, K.,*** Chapter 4: Pharmaceutics and pharmacokinetics, 41–58. ***Gutierrez, K.,*** Chapter 5: Pharmacodynamics, 60–74. ***Gutierrez, K.,*** Chapter 8: Geriatric pharmacotherapeutics, 105–117.
2	**Module 3** Renal Drugs • Diuretics Introduction to Client Case Learning Case – Hypertension **Module 4** Autonomic Nervous System Drugs • Adrenergic Agonists and Blockers • Cholinergic Agonists and Blockers Auto's Exercise	***Gutierrez, K.,*** Chapter 39: Diuretic drugs, 822–842. ***Gutierrez, K.,*** Unit II: Drugs influencing the autonomic nervous system, 166–171. ***Gutierrez, K.,*** Chapter 11: Sympathetic nervous system drugs, 172–189. ***Gutierrez, K.,*** Chapter 13: Parasympathetic nervous system drugs, 203 Figure 13-2, 204 Table 13-1, 216–217.
3	**Module 5** Cardiovascular Drugs • Inotropic Drugs – Cardiac Glycosides • Antianginal Drugs • Antihypertensive Drugs **Assignment #1** Client Case – Heart Failure	***Gutierrez, K.,*** Chapter 31: Inotropic drugs, 656–673. ***Gutierrez, K.,*** Chapter 32: Antianginal drugs, 675–683; 685–693. ***Gutierrez, K.,*** Chapter 34: Antihypertensive drugs, 726–737; 741–753.

Week Number	Material Covered	Reference/Reading
4	**Module 6** Pediatric Pharmacology **Module 7** Antibiotic Drugs • Sulfonamides, Penicillins, Cephalosporins, Aminoglycosides and Fluoroquinolones • Drug Resistance Case – Urinary Tract Infection	***Gutierrez, K.,*** Chapter 7: Pediatric pharmacotherapeutics, 93–104. ***Gutierrez, K.,*** Chapter 24: Antibiotic drugs, 457–476; 481–491.
5	**Module 8** Central Nervous System – Part 1 • Opioid Analgesics • Nonsteroidal Anti-inflammatory and Other Analgesics • Narcotic Control Act and Regulations • Equianalgesia Case – Pre and Postoperative Pain Management	***Gutierrez, K.,*** Unit III: Drugs influencing the central nervous system, 222–225. ***Gutierrez, K.,*** Chapter 14: Opioid analgesics and related drugs, 226–247. ***Gutierrez, K.,*** Chapter 15: Nonsteroidal anti-inflammatory, disease modifying antirheumatic and related drugs, 248–259; 264–275. ***Gutierrez, K.,*** Chapter 1: Canadian drug legislation, 12–13.
6	**MIDTERM EXAM — 2 hours — Modules 1 to 8** • Multiple Choice Questions • Problem-based Exercise	
7	**Module 9** Central Nervous System – Part 2 • Anticonvulsants • Antipyretics Case – Epilepsy and Pyrexia **Module 10** Drug Overdoses	***Gutierrez, K.,*** Chapter 22: Anticonvulsants, 401–421. ***Gutierrez, K.,*** Chapter 15: Review material on fever management. ***Gutierrez, K.,*** Chapter 9: Community pharmacotherapeutics; Patient education, 131–132. ***Gutierrez, K.,*** Chapter 9: Community pharmacotherapeutics; Poisoning, 132–137. ***Gutierrez, K.,*** Chapter 15: Salicylism, 274.
8	**Module 11** Central Nervous System – Part 3 • Antianxiety, Antidepressants and Antipsychotics Case #1 – Schizophrenia Case #2 – Panic Disorder with Depression **Legal-ethical Paper**	***Gutierrez, K.,*** Chapter 18: Antidepressant and antimanic drugs, 329–347. ***Gutierrez, K.,*** Chapter 19: Antipsychotic drugs, 358–370. See legal-ethical reference list provided in course materials.

Week Number	Material Covered	Reference/Reading
9	**Module 12** Insulins and Oral Hypoglycemic Drugs Case #1 – Type 1 Diabetes – DKA Case #2 – Type 2 Diabetes	***Gutierrez, K.,*** Chapter 57: Intravenous therapy, 1190–1197. ***Gutierrez, K.,*** Chapter 58: Vitamins and minerals, 1220. Refer to drug handbook for more information on administering potassium intravenously. ***Gutierrez, K.,*** Chapter 49: Pancreatic drugs, 1026–1050.
10	**Module 13** Respiratory Drugs • Beta Agonists, Anticholinergics, Corticosteroids, Xanthine Derivatives **Assignment #2** Client Case – Asthma	***Gutierrez, K.,*** Chapter 46: Antiasthmatic and bronchodilator drugs, 966–991. ***Gutierrez, K.,*** Chapter 52: Adrenal cortex drugs and inhibitors, 1091–1099; 1104–1109.
11	**Module 14** Antineoplastic Drugs including • Handling Cytotoxic and Hazardous Drugs • Administration Guidelines • Use of Antiemetics Case – Breast Cancer	***Gutierrez, K.,*** Chapter 30: Antineoplastic drugs, 627–640; 646–653. BCCA Cancer Therapy Manual readings. ***Gutierrez, K.,*** Chapter 44: Antiemetic drugs, 934–951.
12	**Module 15** Blood Formation and Coagulation • Anticoagulants and Anticoagulant Antagonists • Antianemia Drugs Case – Deep Vein Thrombosis **Module 16** Hormone Replacement Therapy and Herbal Remedies Case – Menopause and Anemia	***Gutierrez, K.,*** Chapter 36: Anticoagulant drugs, 774–788. ***Gutierrez, K.,*** Chapter 41: Antianemics, 871–877. ***Gutierrez, K.,*** Chapter 54: Hormonal contraceptives and related drugs, 1129–1138; 1145–1149; HRT 1151–1152. ***Gutierrez, K.,*** Chapter 60: Complementary and adjunctive therapies, 1254–1271. *Herbal remedies information can also be obtained from local pharmacies, health food stores.*
13	**FINAL EXAM — 2 hours — Modules 9 to 16**	