BCIT™

Course Outline

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY
School of Health Sciences
Program: Bachelor of Technology in Nursing
Option:

NURS 1060
Pharmacology

Start Date: January, 2001 **End Date:**

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

Total Hours: 34
Total Weeks: 17

Hours/Week: 2 **Lecture:** **Lab:** **Other:** On-line Learning with On-line Tutoring

Prerequisites

Course No.	Course Name
NURS 2000	Nursing and Health Issues 2
BHSC 2203	Physiology and Pathophysiology 2
NURS 2030	Nursing Practicum 2

NURS 1060 is a Prerequisite for:

Course No.	Course Name
NURS 4530	Nursing Practicum 5

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.

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

Course Goals

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 *(Multiple Choice Questions & Problem-based Exercise)*	35%
Final Exam *(Multiple Choice Questions & Problem-based Exercise)*	40%
Participation	25%
TOTAL	100%

To successfully complete this course, the student must:

1. Participate in weekly on-line case discussions.
2. Summarize group work as assigned.
3. Complete all assignments.
4. Achieve a combined average of 50% in exams.
5. Achieve a final mark of 50%.

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

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 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 on-line learning skills including accessing course materials and resources, communicating via e-mail and bulletin board discussion groups, 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. 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 improve computer literacy by using Internet course material and resources and by communicating by e-mail and bulletin board 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.

Process Threads (cont'd)

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, judgement and initiative within groups. 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.

Program Head/Chief Instructor — Date: December 19, 2001

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 #5250 Cheating and Plagiarism
Policy #5410 Evaluation of Students
Policy #5201 Attendance

Instructor(s)

Susan Rowe-Sleeman

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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. (Available on-line)
3. Registered Nurses Association of British Columbia. (1998). *Standards for nursing practice in British Columbia*. Vancouver: Author. (Available on-line)
4. **A pharmacology handbook is required.** Deglin, J., & Vallerand, A. (1999/2000). *Davis's drug guide for nurses* (6th/7th ed.) Philadelphia: F.A. Davis is strongly recommended.
5. A medical-surgical text is required.
6. A laboratory and diagnostic tests handbook is required.

BCIT Policy Information for Students

On-line learning strategies will be used to assist the learner to develop their knowledge of pharmacology and related legal and ethical issues. Concepts and principles of pharmacology will be explored using patient case discussions, accessing databases and instructor consultation/tutorials.

The course will commence with an orientation to on-line learning. The student will be expected to demonstrate on-line learning skills including accessing resources and communicating via e-mail and bulletin board discussions prior to working on patient cases.

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 (On-line) **35% of Final Mark**

(Multiple Choice Questions & Problem-based Exercise)

The Midterm Exam is a 2.5 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 (On-line) **40% of Final Mark**

(Multiple Choice Questions & Problem-based Exercise)

The Final Exam is a 2.5 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-based 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.

Participation Details

25% of Final Mark

The Participation score is based on course access, quality of 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.

Marks will be assigned based on the following criteria:

20	general course participation
5	reporting activities
25	**Total**

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1	**Introduction to Course — BCIT Computer Lab** **Introduction to On-line Learning**	**NURS 1060 Student Orientation Manual**
2	**Introduction to On-line Learning (cont'd)** **Module 1** Drug Classifications, Pharmacokinetics and Pharmacodynamics	*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.
3	**Module 2** Geriatric Pharmacotherapeutics **Module 3** Renal Drugs • Diuretics Introduction to Client Case Learning Case – Hypertension	*Gutierrez, K.,* Chapter 8: Geriatric pharmacotherapeutics, 105–117. *Gutierrez, K.,* Chapter 39: Diuretic drugs, 822–842.
4	**Module 4** Autonomic Nervous System Drugs • Adrenergic Agonists and Blockers • Cholinergic Agonists and Blockers Auto's Exercise	*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.
5	**Module 5** Cardiovascular Drugs • Inotropic Drugs – Cardiac Glycosides • Antianginal Drugs • Antihypertensive Drugs 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
6	**Module 6** Pediatric Pharmacotherapeutics **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.
7	**Module 8** Central Nervous System – Part 1 • Opioid Analgesics • Non-steroidal Anti-inflammatory and Other Analgesics • Narcotic Control Act and Regulations • Equianalgesia Case — Pre- and Post-operative 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: Non-steroidal anti-inflammatory, disease modifying antirheumatic and related drugs, 248–259; 264–275. ***Gutierrez, K.,*** Chapter 1: Canadian drug legislation, 12–13.
8	**Review**	Modules 1–8
9	**MIDTERM EXAM — 2.5 hours — Modules 1 to 8** • Multiple Choice Questions • Problem-based Exercise	
10	**Module 9** Central Nervous System – Part 2 • Anticonvulsants • Antipyretics Case – Epilepsy and Pyrexia **Module 10** Drug Overdoses – Tutorial	***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.

Week Number	Material Covered	Reference/Reading
11	**Module 11** Central Nervous System Agents – Part 3 • Antidepressants and Antipsychotics Case #1 – Schizophrenia Case #2 – Panic Disorder with Depression	***Gutierrez, K.,*** Chapter 18: Antidepressant and antimanic drugs, 329–347. ***Gutierrez, K.,*** Chapter 19: Antipsychotic drugs, 358–370.
12	**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.
13	**Module 13** Respiratory Drugs • Beta Agonists, Anticholinergics, Corticosteroids, Xanthine Derivatives 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.
14	**Module 14** Antineoplastic Drugs and Related Topics • 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 available on-line. ***Gutierrez, K.,*** Chapter 44: Antiemetic drugs, 934–951.
15	**Module 15** Blood Formation and Coagulation • Anticoagulants and Anticoagulant Antagonists • Antianemia Drugs Case – Deep Vein Thrombosis	***Gutierrez, K.,*** Chapter 36: Anticoagulant drugs, 774–788. ***Gutierrez, K.,*** Chapter 41: Antianemics, 871–877.
16	**Module 16** Hormone Replacement Therapy and Herbal Remedies Case – Menopause and Anemia	***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.*
17	**FINAL EXAM — 2.5 hours — Modules 9 to 16**	