**School of Health Sciences**
**Program: Bachelor of Technology in Nursing**

Start Date: August 15, 2005

End Date: December 5, 2005

Taken in: Level 3

Course Credits: 2

Total weeks: 17
Total hours: 34

Hours/week: 2

**Prerequisites**

NURS 2000 - Applied Nursing Science 2
NURS 2030 - Nursing Practicum 2
BHSC 2203 - Physiology & Pathophysiology 2

**Prerequisite for:**

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 patient 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 on-line learning and assists students to improve computer literacy skills required for clinical practice.

**Detailed Course Description**

Nursing 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**

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| Midterm Exam<br>(Multiple choice questions & Problem based exercise) | 40% | To successfully complete this course, the student must: |
| Final Exam<br>(Multiple choice questions & Problem-based exercise) | 40% | |
| Case Work | 20% | 1. Participate at least weekly in on-line case discussions within individual groups |
| **Total** | **100%** | 2. Summarize group work as assigned.<br>3. Complete all assignments.<br>4. Achieve a combined average of 50% in exams.<br>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, bulletin board discussion groups, 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 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 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 informatin 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 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.

**Required Learning Resources**

1. Aschenbrenner, D. S. & Venable, S. J. (2006). Drug therapy in nursing (2nd ed). New York: Lippincott.
2. Canadian Nurses Association. (2002). Code of ethics for registered nurses. Ottawa: Author. (Available online under LINKS in Action Menu above.)
3. Registered Nurses Association of British Columbia. (2003). Standards for registered nursing practice in British Columbia. Vancouver: Author. (Available under LINKS in Action Menu above.)
4. A pharmacology handbook is required. Spratto, R. G. & Woods, A. L. (2005). PDR Nurse's Drug Handbook (2005 ed). Thomson Delmar Learning: New York, is highly recommended.
5. A medical-surgical text is required.
6. A diagnostic tests handbook is required.

**Information for students** (summarized from course outline)

**Assignments:** Late assignments will not be accepted for marking. Assignments must be done on a group basis unless otherwise specified by the instructor.
**Makeup Exams:** There will be no makeup exam unless documented medical reason or extenuating circumstances. If you miss an exam without prior arrangement, you will receive **zero** marks. The instructor must be notified prior to the scheduled exam.
**Ethics:** BCIT assumes that all students attending the Institute will follow a high standard of ethics. See link to online policy on cheating and plagiarism below. Incodents of cheating or plagiarism may result in a grade of **zero** for all the work involved, for all of the parties involved.
**Attendance:** The attendance policy will be enforced. See link below. 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 or exams. At the discretion of the instructor, you may complete the work missed or have the work prorated. See Student Medical Certificate form.
**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 the printed course outline may be changed by the instructor. If changes are required, they will be announced via email and the course schedule and the online calendar.

The following BCIT policies apply to this course and can be viewed by clicking on the policy name:

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

BCIT Nursing Program Policies - click on Links in the Action Menu.

Online 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, instructor consultation and small group 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 email.

Students will participate in ongoing evaluation of the course. Students are welcome to provide evaluative comments throughout the course. See the Course Comments and Questions Topic in the discussion area. A course evaluation survey will be completed at the end of the term.

**Examination Details**
Two online examinations are scheduled for this course. The midterm exam is scheduled for Week 9 and the final exam will be scheduled during exam week.

**Midterm Exam (online)** **40% of final mark**

The midterm is a 2 hour open-book exam that includes multiple choice questions and a problem-based patient care exercise. The exam includes course content from modules 1 - 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 pharmamcological issies and/or concerns related to the 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: 10 marks for part 1

20 marks for part 2

Total: 30 marks

**Final Exam (online)** **40% of final mark**

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

Multiple choice questions: 15 marks

Problem-based exercise: 30 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 and/or concerns **relate to the patient.** For part 2 of the problem-based exercise, the student will identify issues and/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 interventions, 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: 10 marks for part 1

20 marks for part 2

Total: 30 marks

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 from the course material or online resources is strictly prohibited.

**STUDENTS MUST ACHIEVE A COMBINED AVERAGE OF 50% ON THESE EXAMS TO PASS THE COURSE.**

**Case Work and Assignment Details** **20% of final mark**

The assignments in this course involve weekly patient case discussions and two interactive seminars. Students will be evaluated on the quality of their work, reporting skills, communication between group members and instructor, and the ability to make work succinct but accurate.

Students need to access the course at a minimum, on a weekly basis. Assignments must meet level 3 requirement for content depth, accuracy and thoroughness. Students' 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 seminars.

Case work marks are awarded for group work and reports.

**PLEASE NOTE: ALL GROUP WORK IS DUE BY SUNDAY AT MIDNIGHT.**

**Course Schedule**
Please refer back to the online schedule/calendar for up-to-date information on the class schedule.

## ■ Verification

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

Deborah Yates — Authoring Instructor

9 August 05 — Date

I verify that this course outline has been reviewed.

Program Head/Chief Instructor

9 August 05 — Date

I verify that this course outline complies with BCIT policy.

Dean/Associate Dean

9 August 05 — Date

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

| Schedule: August to Decemeber 2005 | | | |
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| **Week** | **Material Covered** | **Reference/Reading** | **Assignments** |
| 1<br><br>**15 Aug** | Introduction to Course/Instructors - BCIT Computer labs<br><br>Introduction to NURS 1060 & online learning<br><br>• text-based communications technologies<br><br>**Module 1 - Drug Classifications, Pharmacokinetics and Pharmacodynamics** | Module 00 - Orientation to NURS 1060<br><br>*Aschenbrenner et al., Chapter 1: Nursing management in drug therapy.*<br><br>*Aschenbrenner et al., Chapter 4: Pharmacotherapeutics and pharmacokinetics,& pharmacodynamics.*<br><br>Please note that pharmacokinetics and pharmacodynamics may seem complex this week but be assured that you will be applying this information each week to patient cases. Your knowledge will grow considerably over this time and you will find the material becomes quite familiar in a few weeks. Refer to the Module for a brief summary of these concepts and give yourself time to develop your understanding. | Module Orientation to NURS 1060 (online Contents area) Practice on-line skills (Monday)<br><br>**Required activities**<br><br>• Network Login Access Academic Computing Support Web site (ACSWeb)<br>• Review Policy #3501 Responsible Use of Technology at BCIT<br>• Login to MyWebCT<br>• Access NURS 1060<br>• Complete Tech Tutorial (not available)<br>• Explore various parts of the course<br>• Read online Course Information<br>• Access Content modules - Read Orientation Module<br>• Send email<br>• Post personal bio in Student Profile Discussion topic<br>• consult calendar for group reporter schedule<br><br>Complete the following by Sunday (2400hrs) Week 2:<br><br>• Read Module 1 and complete readings<br>• Access references<br>• Post drug information under Module 1 Class topic (due Sunday, 21 Aug.@ 2400).<br>• complete self-test |
| 2<br><br>**22 Aug** | **Module 2 - Geriatric Pharmacotherapeutics** | *Aschenbrenner et al., Chapter 5: Adverse effects and drug interactions. Chapter 8: Life span: Older adults.* | **Required activities**<br><br>• Remember to check your course e-mail and discussion area for messages at least once per week |

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| | | | • Provide example of a clinical experience relating to geriatric pharmacotherapeutics and post in discussion area (due Sun, 28 Aug @2400). |
| 3<br><br>**29 Aug** | **Module 2 (cont) - Autonomic Nervous System Drugs**<br><br>• Adrenergic agonists and blockers<br>• Cholinergic agonists and blockers<br><br>Case - Hypertension/Heart Failure | *Aschenbrenner et al., Chapter 13: Drugs affecting adrenergic function.*<br>*Chapter 14: Drugs affecting cholinergic function.* | **Required activities**<br><br>• Complete Math Quiz (due Sun, 4 Sept@ 2400).<br>• start discussion of case with group and assign questions to group members.<br>• Check under course information icon for groups and group reporting schedule<br>• complete activity #2 in Module 2 and post in group discussion area by Sun, 4 Sept@2400. |
| 4<br><br>**5 Sept** | **Module 3 - Renal and Cardiovascular Drugs**<br><br>Diuretics<br><br>Case - Hypertension/Heart Failure | *Chapter 32: Drugs affecting urinary output.* | **Required activities**<br><br>• Case discussion questions<br>• Check email<br>• Check course contents for group report instructions.<br>• Start to work on the case |
| 5<br><br>**12 Sept** | **Module 3 (cont'd)**<br><br>Cardiovascular Drugs<br><br>• Inotropic drugs- Cardiac glycosides<br>• Antianginal drugs<br>• Antihypertensive drugs<br><br>Case - Hypertension/Heart Failure | *Aschenbrenner et al., Chapter 28: Drugs for treating congestive heart failure.*<br>*Chapter 29: Drugs used to treat angina.*<br>*Chapter 27: Drugs affecting blood pressure.* | **Required activities**<br><br>• Case Discussion Questions - post answers in your private group discussion area by deadline set by group reporter.<br>• **reporter**: summarize group answers (due Sun,18 Sept @ 2400 hrs). |

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| 6<br><br>**19 Sept** | **Module 4 - Pediatrics, Antibiotics and Analgesics**<br><br>Pediatric pharmacotherapeutics<br><br>Antibiotic Drugs<br><br>• Sulfonamides<br>• Penicillins<br>• Cephalosporins<br>• Aminoglycosides<br>• Fluoroquinolones<br>• Drug Resistance<br><br>Case - Ruptured Appendix and Pain Management | *Aschenbrenner et al., Chapter 8: Life span: Children.*<br>*Chapter 37: Principles of antibiotic therapy.*<br>*Chapter 38: Antibiotics affecting the bacterial cell wall.*<br>*Chapter 39: Antibiotics affecting protein synthesis.*<br>*Chapter 40: Drugs that are miscellaneous antibiotics.*<br>*Chapter 41: Drugs treating urinary tract infections.* | **Required activities**<br><br>• Case Discussion Questions - assign questions to group members and post answers by deadline set by group reporter<br>• **Reminder - Practice exams are available on-line** |
| 7<br><br>**26 Sept** | **Module 4 (cont)**<br><br>Central Nervous System Drugs - Part 1<br><br>• Opioid Analgesics<br>• Non-steriodal anti-inflammatory and other analgesics<br>• Narcotic Control Act and Regulations<br>• Equianalgesia<br><br>Case - Ruptured Appendix and Pain Management | *Aschenbrenner et al., Chapter 23: Drugs treating severe pain.*<br>*Chapter 24: Drugs treating mild to moderate pain, fever, inflammation, and migraine headache.* | **Required activities**<br><br>• Case Discussion Questions - **review and clarify** answers posted by your group members<br>• Reporter- **critique group work and post a summary report of key issues** as assigned. (due Sun, 2 Oct @2400).<br>• **Reminder - Practice exams are available on-line** |
| 8<br><br>**3 Oct** | **Module 5 - Central Nervous System Drugs - Part 2**<br><br>• Anticonvulsants<br><br>Case - Epilepsy/Schizophrenia | *Aschenbrenner et al., Chapter 16: Drugs relieving anxiety and producing sleep.*<br>*Chapter 19: Drugs treating seizure disorders.* | **Required activities**<br><br>• Case Discussion Questions - assign questions to group members and post answers by deadline set by group reporter |

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| 9<br><br>**10 Oct** | **Module 5 - (cont)**<br><br>Central Nervous System Drugs - Part 3<br><br>• Antidepressants and Antipsychotics<br><br>Case - Epilepsy/ Schizophrenia<br><br>**Review Week FOR MIDTERM EXAM**<br><br>**Modules #1 to # 4** | *Aschenbrenner et al., Chapter 17: Drugs treating mood disorders.*<br>*Chapter 18: Drugs treating psychotic disorders and dementia.*<br><br>Review Modules 1 to 4 | **Required activities**<br><br>• Case Discussion Questions - **review and clarify** answers posted by your group members<br>• Reporter- **critique group work and post a summary report of key issues** as assigned. (due Sun, 23 Oct @2400).<br><br>**Required activities**<br><br>• check email for exam scenario |
| 10<br><br>**17 Oct** | **MIDTERM EXAM - Modules #1 to #4**<br><br>Multiple-choice questions<br>Problem-based exercise | *Open book online exam (Aschenbrenner et al. and drug handbook permitted - no other resources - paper or online are allowed)* | Exam written on-line in assigned BCIT computer lab Monday 1530 - 1730. Please check your email/Level 3 bulletin board for room assignment. |
| 11<br><br>**24 Oct** | **Module 6 - Respiratory & Coagulation Drugs**<br><br>Respiratory drugs<br><br>• Beta agonists<br>• Anticholinergics<br>• Corticosteroids<br>• Xanthine derivatives<br><br>Case - Asthma/Deep Vein Thrombosis | *Aschenbrenner et al., Chapter 47: Drugs affecting the lower respiratory system.*<br>*Chapter 51: Drugs affecting corticosterioid levels.* | **Required activities**<br><br>• Case Discussion Questions - assign questions to group members and post answers by deadline set by group reporter |
| 12<br><br>**31 Oct** | **Module 6 - (cont)**<br><br>Blood Formation and Coagulation<br><br>• Anticoagulants and anticoagulant antagonists<br>• Antianemia Drugs<br><br>Case - Asthma/Deep Vein Thrombosis | *Aschenbrenner et al., Chapter 31: Drugs affecting coagulation*<br><br>*Aschenbrenner et al., Chapter 10: Lifestyle, diet and habits: Nutrition and complementary medications.* | **Required activities**<br><br>• Case Discussion Questions - **review and clarify** answers posted by your group members. Summary due Sun, 6 Nov @2400. |

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| | **HAPPY HALLOWEEN!** | | |
| 13<br><br>**7 Nov** | **Module 7 - Insulins and oral hypoglycemic drugs and antineoplastic drugs**<br><br>Case - Type 2 Diabetes/Breast Cancer | *Aschenbrenner et al., Chapter 52: Drugs affecting blood glucose levels.*<br>*(See drug handbook for IV potassium chloride and potassium phosphate)*<br><br>*Refer to drug handbook for more information on administering potassium intravenously.* | **Required activities**<br><br>• Case Discussion Questions - assign questions to group members and post answers by deadline set by group reporter<br>• access chapter 5 of your textbook, page 55. Copy the form, use the information provided under the assignments section to complete this form and submit your completed form to your instructor.<br>• Adverse reaction form due on 14 Nov @0800. |
| 14<br><br>**14 Nov** | **Module 7 - (cont'd)**<br><br>Antineoplastic drugs and related topics<br><br>• Handling Cytotoxic and Hazardous Drugs<br>• Administration Guidelines<br>• Use of Antiemetics<br><br>Case - Type II Diabetes and Breast Cancer | *Aschenbrenner et al., Chapter 35: Drugs that are cell cycle-specific.*<br>*Chapter 36: Drugs that are cell cycle non-specific.*<br><br>*BCCA Cancer Therapy Manual available on-line.* | **Required activities**<br><br>• Case Discussion Questions - **review and clarify** answers posted by your group members. Summary due Sun, 27 Nov @2400.<br>• Adverse Reaction Form due **today @0800.**<br>• Please complete the **course evaluation survey** under the Quiz icon on the Homepage |
| 15 | **Module 7 - (cont'd)** | *Aschenbrenner et al., Chapter 35: Drugs that are cell cycle-specific.* | **Required activities** |

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| 21 Nov | Antineoplastic drugs and related topics<br><br>• Handling Cytotoxic and Hazardous Drugs<br>• Administration Guidelines<br>• Use of Antiemetics<br><br>Case - Type II Diabetes and Breast Cancer | *Chapter 36: Drugs that are cell cycle non-specific.*<br><br>*BCCA Cancer Therapy Manual available on-line.* | • Case Discussion Questions - **review and clarify** answers posted by your group members. Summary due Sun, 27 Nov @2400.<br>• Please complete the **course evaluation survey** under the Quiz icon on the Homepage, if you have not already done so. |
| 16<br><br>**28 Nov** | **Review week for final exam**<br><br>Course Evaluation - please ensure you have completed online survey by today | | **Required activities**<br><br>• Please complete the **course evaluation survey** under the Quiz icon on the Homepage if you have not already done so. |
| 17<br><br>**7 Dec** | **FINAL EXAM - Modules #5 to #7** | Open book online exam (Aschenbrenner et al. and drug handbook permitted - no other resources - paper or online are allowed) | **Date and Time**<br><br>**7 Dec - time TBA** |

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