UNIVERSITY OF CALGARY

FACULTY OF NURSING

Nursing 663
Pharmacotherapeutics in Advanced Nursing Practice

Spring/Summer 2011
May 13 – August 12, 2011

Fridays: 0900 - 1200
PF 2253

Instructor

Colleen Cuthbert, RN, MN, NP
email: cacuthbe@ucalgary.ca
Office Hours: By Appointment
Office # 1241

Nursing 663 Pharmacotherapeutics in Advanced Nursing Practice

Course Description: Principles of drug action, pharmacokinetics and pharmacotherapeutics in the context of advanced nursing practice. Opportunity to investigate pharmacotherapies specific to student's individual client populations.

This course is designed for nurse practitioner and MN graduate students with a specific focus on integration of principles of basic pharmacology into the clinical context. Common drug classes, indications, and evaluations of outcomes of therapy will be presented as related to major morbidity and mortality of the Canadian population.

Prerequisites: Consent of the Faculty.

Seminar Hours: **39 hours**
Friday 0900-1200

Location: PF 2253

Term: 13 May – 12 August 2011

Withdrawal Date: 12 August 2011**:** Last day to withdraw with permission from full courses.

Objectives: At the end of this course, the student should be able to:

1. Describe the basic principles of pharmacokinetics and pharmacodynamics, and how these principles may affect prescribing decisions.
2. Demonstrate an understanding of the selection and use of drugs in the management and treatment of disease incorporating the client clinical and social context to the selection of drugs of choice.
3. Evaluate and apply research findings when prescribing pharmaceuticals.
4. Evaluate prescribed drug regimens for safety, clinical efficacy, outcomes, and client satisfaction.
5. Identify and incorporate strategies to address barriers to regimen adherence into client assessment and education.
6. Describe the current status of prescriptive authority for nurse practitioners in Alberta.
7. Understand the role of interdisciplinary consultation in optimizing drug therapy.

Class format

Classes will be a combination of didactic presentations and interactive case presentations. A variety of guest speakers with expertise in specific areas of clinical practice will give lectures, facilitate class discussions, and present relevant case studies. There will be ongoing case studies that will be built upon throughout the course. It is expected that students will come prepared to participate in the case studies by completing pre-reading. The case studies will

provide a venue for exploration of prescribing pharmaceuticals in common conditions including the complexity of co-morbid conditions typically encountered in clinical practice.

Student Evaluation

Assignments:

Exams: Two take-home examinations will be administered and will cover basic principles of pharmaceutics, pharmacokinetics and pharmacodynamics, as well as the applied therapeutics of medications for specified systems. Exams will be a combination multiple choice, short answer, matching, and case study. Each examination will cover a particular portion of course content as covered in the readings and class lectures. There is no cumulative final examination in this course.

Case Studies: One case study will be provided and will require a comprehensive written analysis as detailed in the Case Study Worksheet attached. Case studies are limited to 2000 words excluding references and the Mechanisms of Action Diagram. All case studies must be prepared according to the Worksheet format, be typed (except for the Mechanisms Diagram), and be submitted according to APA format 6th Edition). Case studies will be submitted electronically (except Mechanisms of Action Diagrams which may be submitted in hard copy if unable to be reproduced electronically). Case studies handed in late will be penalized 5 percentage points per day. Case studies will not be accepted after five days unless there are extenuating circumstances. All late assignments must be discussed in person with the course instructor.

Presentation: Students will give a presentation on pharmacotherapies used with specific populations or in specialty areas of practice, novel uses for older agents, or selective clinical issues related to drug treatment. Students will choose a specific topic area and do a 10-minute presentation, followed by a 5-minute discussion. Presentations will be done individually.

The emphasis for the presentation is on the student's understanding and application of pharmacokinetics and –dynamics of a drug/drug class as applied to a clinical context, issue, and/or a specific population. Students are expected to use relevant research material, including primary literature sources and acknowledgment of the clinical experts contacted. The information presented should be accurate, and at an advanced practice level, but framed so that non-specialist classmates can grasp the information provided. Implications for advanced nursing practice should be included. (see rubric for grading). A handout/quick reference guide should be provided for your classmates for their use in clinical practice.

Topics are due by 17 June 2011.

Examinations	30% of total grade	**Midterm/Examination 1** distributed June 10,2011 Due June 17, 2011
	30% of total grade	**Final/Examination 2** distributed July 29, 2011 Due Aug 5, 2011
Case Studie	25% of total grade	**Case Study** distributed June 3rd,2011 due June 10,2011
	See Case Study Worksheet for grade breakdown.	
Presentation	15 % of total grade	due August 12, 2011

Total presentation grade breakdown as follows:

60 %	Content/Analysis
15 %	Organization
10 %	Presentation Skills
5 %	Handout
10 %	References

Student Academic Conduct:.

Plagiarism is a serious offence which will result in the following penalty and application:

1. In cases in which the dean and/or faculty is satisfied that a student is guilty of plagiarism, cheating or other academic misconduct in circumstances which suggest a clear intention to deceive or otherwise commit an academic offence, the normal penalty will be either suspension or expulsion from the faculty.

2. In cases in which the dean and/or faculty is satisfied that an offence has been committed, but doubt is left as to the existence of a clear intention to deceive or otherwise commit an academic offence, the normal penalty will be probation.

3. In cases where a student is found guilty of more than a single offence, the normal penalty will be expulsion from the faculty, and in the most serious cases, expulsion from the University.

While it is recognized that scholarly work often involves reference to the ideas, data and conclusions of other scholars, intellectual honesty requires that such references be explicitly and clearly noted.

Plagiarism occurs not only when direct quotations are taken from a source without specific acknowledgement but also when original ideas or data from the source are not acknowledged.

For further information on Student Misconduct Policies, please refer to the official online University of Calgary Calendar 2010-2011, Academic Regulations, K. Student Misconduct: www.ucalgary.ca/pubs/calendar/

Intellectual honesty is viewed most seriously at the University of Calgary and compliance with standards of intellectual honestly is an expectation.

REAPPRAISALS AND APPEALS

For information on reappraisals and appeals, refer to the official online University of Calgary Calendar 2010-2011, Academic Regulations, I. Reappraisal of Grades and Academic Appeals: www.ucalgary.ca/pubs/calendar/

Please note the 15 day timeline from the receipt of a mark and a request for reappraisal and/or appeal to the Associate/Assistant Dean, Undergraduate/Graduate Programs.

ACADEMIC ACCOMODATIONS

It is the student's responsibility to request academic accommodations. If you are a student with a documented disability who may require academic accommodation, you must officially register with the

Disability Resource Centre. Students who have not registered with the Disability Resource Centre are not eligible for formal academic accommodation. You are also required to discuss your needs with your instructor within the first week of the start of this course.

Further information can be obtained at: www.ucalgary.ca/drc/ or by calling 403-220-8237.

Freedom of Information and Protection of Privacy: Information (such as phone number address, tracking sites of practica, etc.) that you may be asked to provide is collected under the authority of the Universities/Colleges Act and Freedom of Information and Protection of Privacy Act Section 32(c). It will be used for Practicum placement and contact purposes. Your personal information is protected by Alberta's Freedom of Information and Protection and Privacy Act and can be reviewed upon request. If you have any questions about the collection or use of this information, contact the Graduate Office, at 220-6241.

Tentative Schedule

Week	Topic	Required Readings	Clinical Practice Guidelines
Week 1 **13 May 2011** **0900-1200**	Introduction Review of Course Outline General Principles Pharmacokinetics and Pharmacodynamics **Colleen Cuthbert RN, MN, NP**	Harvey & Champe ch. 1& 2 Koda-Kimbel et al. ch. 1	
Week 2 **20 May 2011** **0900-1200**	**1. Drugs affecting the Cardiovascular System I** Drugs to be discussed: antihypertensives (including diuretics), antihyperlipidemic agents Related disease processes: dyslipidemia, HTN **Kari Blessing RN, MN, NP** **2. Drugs affecting the Blood** Drugs to be discussed: anticoagulants, antiplatelet, fibrinolytics Related disease processes: thrombosis/embolism, ischemic heart disease, ACS, MI **Colleen Cuthbert**	Harvey & Champe ch. 19, 20 & 21, 22 Koda-Kimbel et al. ch 12, 13, 15	CHEP TOP/AMA guidelines for dyslipidemia American College of Chest physicians anticoagulation guidelines Canadian Cardiovascular society guidelines for treatment of dyslipidemia and antiplatelet
Week 3 **27 May 2011** **0900-1200**	**Drugs affecting the Pulmonary System** Drugs to be discussed: beta 2 agonists, corticosteroids, anticholinergics, antileukotirene drugs Related disease processes: Asthma, COPD	Harvey & Champ ch. 27 Koda-Kimbel et al. ch. 22, 23	Asthma COPD

Week	Topic	Required Readings	Clinical Practice Guidelines
	Kevin Huntley RN, MN, NP		
Week 4 **June 3, 2011** **0900-1200**	**Drugs affecting the Cardiovascular System II** Drugs to be discussed: antiarrhythmics, antianginal, ace inhibitors/beta blockers (for treatment of heart failure), diuretics (for treatment of heart failure) Related disease processes: ACS, MI, Heart Failure, Dysrhythmias **Dr. Karen Then RN, PhD, NP** **Case Study distributed**	Harvey & Champe ch. 16, 17, 18 Koda-Kimbel et al. 16,17,18,19	Canadian cardiovascular society guidelines for atrial fibrillation and STEMI
Week 5 **10 June, 2011** **0900-1200**	**Drugs affecting the Nervous System** Autonomic nervous system and neuromuscular junction review Drugs to be discussed: cholinergic and adrenergic agents Overview of CNS system agents pharmacology CNS agents: antidepressants, antianxiety, antipsychotic agents, sedatives Related disease processes: depression, anxiety, delerium **Haley Bent RN, MN, NP**	Harvey & Champ ch. 3, 4, 5, 6, 7, 9,12 Koda-Kimbel et al. ch 76, 79	Uptodate: diagnosis and treatment of depression

Week	Topic	Required Readings	Clinical Practice Guidelines
	Case Study Due **Examination 1 Distributed**		
Week 6 **17 June, 2011** **0900-1200**	**Drugs affecting the Endocrine system** Drugs to be discussed: oral hypoglycemic agents and insulin Related disease processes: Diabetes Melitus Type I and II **Examination 1 Due** **Presentation Topics Due** **Noreen Antonishyn RN,MS,NP,CDE**	Harvey & Champ ch. 24 Koda-Kimbel et al. ch.50	Canadian diabetes association clinical practice guidelines for prevention and management of diabetes in Canada. http://www.diabetes.ca/for-professionals/resources/2008-cpg/
Week 7 **23 June, 2011** **0900-1200** *** note this is a Thursday**	**Drugs affecting the Musculoskeletal/Endocrine system:** Drugs to be discussed: NSAIDS, DMARDS, prednisone and biologic agents, bisphosphinates Related disease processes: osteo/rheumatoid arthritis, osteoporosis **Dr. Jim Rankin RN, PhD, NP**	Harvey & Champ ch. 26, pp.343-344, ch. 40,41 Koda-Kimbel et al. ch. 43,102	Osteoporosis Canada clinical practice guidelines
Week 8 **8 July, 2011**	**Agents affecting the Gastrointestinal System** Drugs to be discussed: antiemetics, proton pump	Harvey & Champe ch. 28 Koda-Kimbel et al. ch. 7, 26	Canadian Association of Gastroenterology Clinical practices guidelines: GERD and H.Pylori

Week	Topic	Required Readings	Clinical Practice Guidelines
0900-1200	inhibitors, histamine receptor blockers, prostaglandins, laxatives. Related disease processes: Nausea/vomiting, peptic ulcers/GERD/H pylori, constipation **Colleen Cuthbert**		
Week 9 **15 July, 2011** **0900-1200**	**Drugs used to treat Infectious Disease** Review of infectious disease pathopysiology Drugs to be discussed: antibiotics Related disease processes: common infections found in clinical practice (eg. UTI, pneumonia, cellulits, sepsis) **Linda Fatovich RN, MN, NP**	Harvey & Champe ch. 30,31,32,33,34,35 Koda-Kimbel et al. ch. 56	IDSA guidelines AMA/TOP infectious disease guidelines
Week 10 **22 July, 2011** **0900-1200**	**Pain** Review of pain pathophysiology Drugs to be discussed: analgesics, opioid analgesics, steroids, pain adjuncts (antidepressants, antiseizure) Related disease processes: Acute and Chronic Pain **Audra Arlain RN, MN, NP**	Harvey & Champe ch. 14, 41 Koda-Kimbel et al. ch. 8	WHO pain

Week	Topic	Required Readings	Clinical Practice Guidelines
Week 11 **29 July, 2011** **0900-1200**	**Cancer Therapeutics** Drugs to be discussed: Chemotherapeutics, Hematopoietic Agents **Colleen Cuthbert** **<u>Examination 2 Distributed</u>**	Harvey & Champe ch.20, 39 Koda-Kimbel ch. 87,88,89	American Society of Clinical Oncology (ASCO) National Comprehensive Cancer Network (NCCN) Multinational Association of Supportive Care in Cancer (MASCC)
Week 12 **5 Aug, 2011** **0900-1200**	**Special Considerations** Prescribing in the elderly dosing in renal insufficiency pharmacogenomics **Haley Bent/Colleen Cuthbert** **<u>Examination 2 Due</u>**	Koda-Kimbel ch. 99, 33, Handout on pharmacogenomics	
Week 13 **12 Aug, 2011** **0900-1200**	**<u>Students Presentations</u>** Course Evaluations & Wrap-Up		

U of C Grading System (as of August 2002)

If the percentage on your assignment is:	If the Grade on your assignment is:	The percentage will be taken from:	If the total for all assignments is:	Your final grade will be:	And the GPA for the course will be:
98.0 – 100	A^+	4.0	3.95 – 4.00	A^+	4.0 - Outstanding
93.0 – 97.9	A	4.0	3.85 – 3.94	A	4.0 - Excellent – superior performance showing comprehensive understanding of the subject matter
88.0 – 92.9	A^-	3.7	3.50 – 3.84	A^-	3.7 - Very good performance
83.5 – 87.9	B^+	3.3	31.5 – 3.49	B^+	3.3 - Good performance
78.0 – 83.4	B	3.0	2.85 – 3.14	B	3.0 - Satisfactory performance (Note: The grade point value [3.0] associated with this grade is the minimum acceptable average that a graduate student must maintain throughout the program as computed at the end of each year of the program)
73.5 – 77.9	**B^-**	**2.7**	**2.50 – 2.84**	**B^-**	2.7 - **Minimum pass for students in the Faculty of Graduate Studies** (Note: Students who accumulate two grades of B^- or lower may be required to withdraw from program by the Faculty of Graduate Studies, regardless of their grade point average)
69.0 – 73.4	C^+	2.3	2.15 – 2.49	C^+	2.3 - Unsatisfactory (Note: All grades below B^- are indicative of failure at the graduate level and cannot be counted toward Faculty of graduate studies course requirements)
63.5 – 68.9	C	2.0	1.85 – 2.14	C	2.0
59.0 – 63.4	C^-	1.7	1.50 – 1.84	C-	1.7
54.5 – 58.9	D^+	1.3	1.15 – 1.49	D^+	1.3
50.5 – 54.5	D	1.0	0.50 – 1.14	D	1.0
49.9 or less	F	0	0.00 – 0.49	F	0

Case Study Worksheet

I. Identifying patient information including relevant comorbidities.
(5 points)

II. Additional Patient Information Needed (What else would you like to know, and why?)
(5 points)

III. Desired Goal(s)/Outcomes(s) of Treatment (What do you and the patient want to accomplish?)
(5 points)

IV. Possible Treatment Options and Their Risks
(5 points)

V. Evaluation of Treatment Option Efficacy (Based on desired goals/outcomes, how will you know that the option worked?)
(5 points)

VI. Individualized Treatment Plan

A. Treatment Option, Dose, Schedule, and Duration (20 points)

B. Rationale (include principles of pharmacokinetics/dynamics and patient/clinical context as rationale. Must be evidence-based)
(25 points)

C. Cost of Treatment Plan (Include source of cost information in References)
(5 points)

D. Adherence Concerns & Adherence Management (Actual/Potential):
What are the Actual/Potential barriers to patient implementation of the plan? How will you manage them?
(5 points for Adherence Concerns and 5 points for Adherence Management)

E. Patient Education
(5 points)

VII. Mechanism(s) of Action (Draw a diagram illustrating the mechanism(s) of action of the primary agent(s) used in the case study).
(10 points)

VIII. Reference(s)
(5 points)

Rubric for Evaluating Presentation

Elements	Does not meet requirements (</= B-)	Meets requirements (B to B+)	Exceeds requirements (A- to A+)
Substantive Content	Presentation is limited to a surface description of the drug and its use in advanced nursing practice	Offers some substantiation and more in-depth understanding of the drug and its use in advanced nursing practice	Offers clear and in-depth understanding of the drug and of its uses in advance nursing practice. In addition shows evidence of reflection on the considerations for advanced nursing practice from a larger perspective
Process, Organization, and Overall Presentation	The presentation is not well organized, does not emphasize important practice points and does not engage fellow students. Goes overtime.	The presentation is organized, summarizes important practice information for fellow students and engages fellow students. Does not go overtime.	The presentation is well organized, succinctly covers topic and focuses on important practice implications. Uses novel and interesting presentation approaches. Does not go overtime.
Scholarship (references, handout, integration of content into clinical practice)	Does not speak to the relevant literature, clinical practice guidelines and does not highlight practice points for fellow students	Some integration of relevant literature and clinical practices guidelines into presentation. Provides useful practice information for fellow students.	Clear and concise integration of literature and clinical practice guidelines into presentation with succinct practice information for fellow students.

Rubric for Evaluating Case Study

Elements	Does not meet requirements (</= B-)	Meets requirements (B to B+)	Exceeds requirements (A- to A+)
Content (patient history, treatment plan)	Paper is limited to a brief description of content required, without full exploration of the questions and shows lack of understanding of approach to coming to an individual treatment plan.	Paper offers more substantiation and in-depth exploration of the questions. Shows a practical and systematic approach to coming to an individual treatment plan. Considers advanced nursing practice in devising treatment plan.	Paper offers clear and in-depth understanding of patient problem and possible treatment options. In addition shows clear understanding of how to devise a treatment plan and links this plan to the patient problem. Integrates concepts of advanced nursing practice.
Mechanism of Action Diagram	The diagram does not demonstrate understanding of the mechanism of action of the drug.	The diagram is in-depth and demonstrates clear mechanism of action at the cellular level.	The diagram is detailed, shows clear pathways and demonstrates in-depth understanding of the cellular mechanisms.
Scholarship (references, integration clinical practice guidelines into rationale, implication for advance nursing practice)	Does not speak to the relevant literature, clinical practice guidelines and does not highlight implications for advanced nursing practice. Reference list is incomplete and /or does not follow APA format.	Some integration of relevant literature and clinical practices guidelines into treatment plan. Provides some implications for advanced nursing practice. Follows APA format.	Clear and concise integration of literature and clinical practice guidelines into treatment plan with succinct and relevant implication for advanced nursing practice. Reference list is complete and follows APA format.