COURSE NUMBER: GNUR 413

COURSE TITLE: Advanced Pharmacology

CREDIT HOURS: 3 Semester Hours

PREREQUISITES: GNUR 442: Advanced Physiology/Pathophysiology.

FACULTY: Lisa Millsap PharmD, ACNP, CCRN, CNRN
Office Hours: by appointment
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COURSE DESCRIPTION: This course will be the foundation for the advanced practice nurse to make appropriate decisions regarding the pharmacological management of patients in clinical practice. Pharmacological principles, including pharmacokinetics, pharmacodynamics, mechanisms of adverse drug reactions, and contraindications will be discussed. Legal requirements for writing prescriptions and the format for prescriptions as well as common sources of medication errors and methods to prevent them will be described. Developmental considerations, socioeconomic status, and complementary therapies will be addressed throughout the course. Pharmacotherapy of selected common disorders will be addressed. Students will synthesize and integrate diverse viewpoints, principles, and selected research findings related to the complex needs of patients via case study analyses. This course, along with clinical courses, will prepare the advanced practice nurse for prescriptive authority.

ACADEMIC HONESTY

Academic honesty is an expression of an ethic of interpersonal justice, responsibility and care applicable to Loyola University faculty, students and staff, which demands that the pursuit of knowledge in the university community be carried out with sincerity and integrity. Academic dishonesty is characterized by the failure to apply this ethic, i.e., any action whereby faculty, student or staff misrepresents the ownership of academic work submitted in his or her name.

Student failure to practice academic honesty will, depending upon the seriousness of the misconduct, result in a sanction ranging from the grade of "F" for the assignment to expulsion from the university.
COURSE OUTCOMES:

Student must receive a grade of B or better in this course in order to progress to clinicals.

Upon completion of this course, the student should be able to:

1. Apply the principles of pharmacokinetics and pharmacodynamics to pharmacological interventions used in selected acute and chronic illnesses.

2. Describe potential iatrogenic effects of pharmacological therapy.

3. Identify drugs of choice for selected health problems considering the patient’s age, socioeconomic status, cultural background, concurrent illnesses, pregnancy, lactation, and potential drug-drug, drug-food, and drug-herbal medicinal interactions.

4. Discuss factors that affect compliance with prescribed and OTC medication regimens and their implication for drug selection and patient education.


6. Critique research on drug therapy pertinent to his/her own practice.

7. Discuss ethical, legal, and economic issues associated with pharmacological interventions.

CONTENT OUTLINE

Overview of Pharmacology: Pharmacokinetics, Pharmacodynamics, Pharmacotherapeutics, Pharmacoepidemiology, Pharmacoeconomics, Pharmacogenomics, Evaluation of Investigational New Drugs

Chemical Factors Affecting Drug Action: Molecular Weight, Solubility, Ionization, Drug Transport Mechanisms Across Cell Membranes

Pharmacokinetics: Drug Absorption, Distribution, Biotransformation, and Excretion

Pharmacodynamics: Pharmacodynamics at the Cellular, Organism, and Population Levels

Legal Issues and Prescription Writing Format
Adverse Drug Effects: Reportable Adverse Effects, Drug-Induced Tissue Toxicities, Drug-drug, Drug-food, Drug-herbal Medicinal Interactions, Non-Pharmacological Adverse Drug Effects

Effects of Selected Disease States on Pharmacotherapy: Implications of Renal, Hepatic, and Cardiovascular Diseases

Developmental Considerations in Pharmacotherapy

Pharmacotherapy of Pain

Pharmacotherapy of Diabetes

Antimicrobial Pharmacotherapy: Principles of Antimicrobial Therapy, Pharmacotherapy of Bacterial, Viral, and Fungal Infections

Pharmacotherapy of Cardiovascular Disorders: Hypertension, Dyslipidemias, Angina, MI, Heart Failure

Pharmacotherapy of GI Disorders: PUD, Acute Stress Ulcers, and GERD

Pharmacotherapy of Respiratory Disorders: Asthma and other types of COPD, Cold, Flu, Rhinitis, Etc.

Instructional Methods:

Lecture/discussion, case analyses, textbook, and Internet reading assignments


Recommended Journals

Advance for Nurse Practitioners
Advances in Pharmacology
American Journal of Diseases in Children
American Journal of Health-System Pharmacy
Clinical Pharmacokinetics
Clinical Pharmacology and Therapeutics
Critical Care Medicine
Critical Care Nurse
Drug Safety
Drugs
Fundamental and Clinical Pharmacology
Journal of the American Academy of Nurse Practitioners
Journal of the American Medical Association
Journal of Clinical Pharmacology
Journal of Pharmaceutical Sciences
Journal of Pediatrics
Journal of Pediatric Health Care
Journal of Pharmacology and Experimental Therapeutics
New England Journal of Medicine
Nurse Practitioner Forum
Patient Care
Pediatrics
Pediatric Infectious Disease Review
Pharmacological Reviews
The Medical Letter
Therapeutic Drug Monitoring

**Recommended Internet Sites**

Links to web sites with information related to pharmacology are located on the syllabus page for the pharmacology course on Blackboard and in the various course sessions.

**Evaluation:**

Examinations  80%
On-line quizzes  20%

**Grading Scale:**

A = 95-100
A- = 93-94
B+ = 89-92
B = 87-88
B- = 85-86
C+ = 81-84
C = 79-80
C- = 77-78
D+ = 73-76
D = 69-76
F = 68 and below

**Please note:** Students are expected to take exams at the scheduled times. Makeup exams will only be given for just cause with written documentation and prior approval of the course faculty. Makeup exams must be taken within one week of the scheduled examination date. Ten points will be deducted from the final examination score for every day (weekends included) that an exam is taken late without an approved excuse and written documentation. **Only answers on the answer sheet (NOT the test booklet) will be graded.**
Seeking or giving information related to the questions on an exam that a student has not yet taken falls under academic dishonesty. When exams are returned to you to review you must return both the exam and the answer sheet before leaving the room. When reviewing an exam you are not allowed to write down any information about the exam. Failure to comply with this falls under academic dishonesty with guidelines as explained in the graduate student handbook.
GNUR 413: Pharmacology for Advanced Practice Nursing Spring semester 2014

**SCHEDULE**

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<thead>
<tr>
<th>TOPIC</th>
<th>READING ASSIGNMENT</th>
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<tr>
<td><strong>January 16</strong>&lt;br&gt;Course Introduction&lt;br&gt;Pharmacoeconomics, Evaluation&lt;br&gt;Of New Drugs, Pharmacoepidemiology, Pharmacogenetics,</td>
<td>pp. 2-7, 127-131</td>
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<td><strong>January 23</strong>&lt;br&gt;Chemical Properties of Drugs,&lt;br&gt;Pharmacokinetics</td>
<td>pp. 15-37</td>
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<td><strong>January 30</strong>&lt;br&gt;Pharmacodynamics, Adverse Drug Effects, Compliance&lt;br&gt;Special Populations in Pharmacotherapy&lt;br&gt;(pediatrics, geriatrics, disease states)</td>
<td>pp. 37-47, 49-76</td>
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<td><strong>February 6</strong>&lt;br&gt;5-6pm&lt;br&gt;EXAM 1</td>
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<td><strong>February 13</strong>&lt;br&gt;Legal Issues in Advanced Practice, Prescription writing&lt;br&gt;OTC Medications, Vitamins</td>
<td>pp. 8-12, 118-126</td>
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<td><strong>February 20</strong>&lt;br&gt;Pharmacotherapy of Pain,&lt;br&gt;Pharmacotherapy of Diabetes</td>
<td>pp. 79-94, 696-712</td>
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<td><strong>February 27</strong>&lt;br&gt;5-6pm&lt;br&gt;EXAM 2</td>
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<td><strong>March 6</strong>&lt;br&gt;Spring Break – NO CLASS</td>
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<td><strong>March 13</strong>&lt;br&gt;Principles of Antimicrobial Therapy</td>
<td>pp. 96-117</td>
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<tr>
<td><strong>March 20</strong>&lt;br&gt;Surgical Antimicrobial Prophylaxis, Vaccines</td>
<td>pp. 820-837</td>
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March 27
Respiratory Infections, Tuberculosis pp. 332-345, 375-390
Asthma, COPD pp. 346-374

April 3
5-6pm
EXAM 3

April 10
PUD, GERD pp. 410-423
UTI and STDs pp. 474-484, 512-535

April 17
Hypertension pp. 230-245

April 24
Vascular Disease, pp. 247-277
Heart Failure pp. 278-295

May 1
5-6pm
FINAL EXAM