



Pharmacology I NURS 109 Course Syllabus_rev 08 04 2022

Basic Course Information

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| Semester: | FALL 2022 | Instructor Name: | Julie Kunath MS APRN AGPCNP-BC ACCNS-AG CCRN-K CNE |
| Course Title & #: | Pharmacology I NURS 109 | Email: | Julie.kunath@imperial.edu |
| CRN #: | 10382 | Webpage (optional): | CANVAS |
| Classroom: | 2139 | Office #: | Available via Zoom, Pronto, or Text |
| Class Dates: | 08/15-12/09/2022 | Office Hours: | Mondays 1305 – 1505; Wednesdays 1330 – 1400; Thursdays 1330 – 1400 |
| Class Days: | Mondays | Office Phone #: | (760) 355 - 6422 |
| Class Times: | 1200 - 1305 | Emergency Contact: | Nursing Office (760) 355 - 6348 |
| Units: | 1 | Class Format: | In-person |

Course Description

This course provides an introduction to the principles of pharmacology, including: pharmacokinetics, pharmacodynamics, medication interactions and potential adverse medication reactions. Emphasis will be placed on life span issues, gene therapy, medication errors, substance abuse, immunizations and OTC, herbal and dietary medications. Focus will be on nursing actions and rationale for the concepts and medications covered.

Course Prerequisite(s) and/or Corequisite(s)

Prerequisite: Admission to the Associate Degree Nursing Program

Corequisite: NURS 107 Fundamentals

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Differentiate the principles of pharmacology, pharmacodynamic, pharmacokinetics, pharmacogenetics, therapeutics, legal, ethical, and cultural influences to medication utilization by passing the final with 78% or better. (ILO 1,2,4)

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Apply principles of pharmacology, pharmacokinetics, pharmacodynamics and drug administration including adverse drug effects and medication errors to medication therapy.
2. Understand the legal and ethical implications, with historical and current drug regulation, substance abuse and psychosocial, gender and cultural influences to medication utilization and administration.

3. Apply principles of pharmacotherapy in the dimensions of the pediatric, geriatric, pregnant and lactating patient.
4. Recognize the major classifications of medications, common medications within each classification, their side effects, and contraindications.
5. Discuss nursing implications and concepts of safety when performing medication administration.

Textbooks & Other Resources or Links

REQUIRED

Burchum, J. R., & Rosenthal, L. D. (2021). *Lehne's pharmacology for nursing care* (11th ed). Elsevier.

- Newest Edition paperback ISBN: 9780323825221
- Newest Edition eBook ISBN: 9780323825245
- Newest Edition Binder Ready Version **ISBN-13:** 978-0323829717

RN Pharmacology for Nursing. ATI nursing education. (Content Mastery Series: Review Module)

ATI: Pharmacology Made Easy (online within ATI package)

Course Requirements and Instructional Methods

A. Hours

NURS 109 is a 1.0 unit theory course. Synchronous sessions will be held once a week for one hour. A minimum requirement of 2 – 3 hours of class preparation will be expected each week.

B. Assignments:

Reading, videos, internet resources, and writing assignments are required. Students will be expected to read, understand, and critique information from college level textbooks, nursing journals, or equivalent. Additional reading assignments will be required to supplement textbook material. Writing assignments will reflect the objectives listed and may include, but not be limited to, short essays, posters, and/or professional papers. Outside assignments including but not limited to nursing lectures, independent exercises, and online learning activities may be assigned and are required.

Plagiarism and cheating policies noted in the student handbook and IVC policies will be strictly enforced. Students are expected to develop original work for this course.

Schedule may change at the discretion of the instructor, taking into account the progress of students with the materials. Any change will be announced in class or via email through Canvas. **Students are held responsible for all materials covered in the syllabus and for any changes that are announced in class, sent by email or announced through Canvas.**

It is recommended that if a grade falls below 82% that the student arrange to meet with the faculty member. Faculty can be reached in person (limited), by email, by Zoom appt or during office hours via Zoom to discuss grades or other classroom matters.

The student is responsible for withdrawing (W) from the class before the deadline as outlined on your registration forms. **Failure to pass this class will affect your ability to progress to the next semester.** Students failing or withdrawing must complete a Petition to Re-Enter.

Course Grading Based on Course Objectives

Students must maintain a “C” average grade as determined by the scale below:

- A = 93-100%**
- B = 85-92%**
- C = 78-84%**
- F = Below 78%**

Grades will not be “rounded”. To advance to the next semester, a “C” or better is required in this course and the co-requisite courses. **The course grade will be computed as follows: 10% from homework/assignments, 10% from quizzes (in class, take-home, or online), 45% will come from an average of the three exams prior to the final exam, and 35% of the course grade will come from the final exam.**

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| Homework/assignments/ATI | 10% | |
| Quizzes | 10% | |
| Exam 1 | 15% | |
| Exam 2 | 15% | |
| Exam 3 | 15% | |
| Final Exam | 35% | |
| Total | 100% | |

All of the following must be attained to successfully pass this course:

- a. **Theory (exams) grade** must have a **total equivalent of 78% or greater.** This requirement must be met in order to progress to the Final Exam.
- b. **Final Theory Exam score** must be passed at a **78% or greater.**
- c. **Total grade calculation** must be passed at a **78% or greater.**
- d. **Attendance** requirements as noted below **must be met.**

Testing will include no more than 3 examinations in addition to written, demonstration, and oral assignments, and a final examination. Pop quizzes may be included. **EXCEPT FOR UNDER EXTREME CIRCUMSTANCES, THERE WILL BE NO MAKE-UPS FOR TESTS OR QUIZZES MISSED DUE TO ABSENCE.**

Online Zoom Meetings: (Scheduled class time is planned as in-person)

How am I expected to act in an online “classroom” (especially Zoom)?

Attending a virtual meeting can be a challenge when there are many students on one conference call. Participating in such meetings may count as class attendance, but disruptive behavior may also result in you not being admitted to future meetings. Follow the tips below for best results:

1) Be RESPECTFUL

- a. Written, verbal, and non-verbal communications should be respectful and focused on learning topics of the class.



- 2) Find a QUIET LOCATION & SILENCE YOUR PHONE (if zooming)**
 - a. People walking around and pets barking can be a distraction.
- 3) EAT AT A DIFFERENT TIME.**
 - a. Crunching food or chugging drinks is distracting for others.
 - b. Synchronous zoom times are set in advance so reserve meals for outside class meetings.
- 4) ADJUST YOUR LIGHTING SO THAT OTHERS CAN SEE YOU**
 - a. It is hard to see you in dim lighting so find a location with light.
 - b. If your back is to a bright window, you will be what is called “backlit” and not only is it hard on the eyes (glare) but you look like a silhouette.
- 5) POSITION THE CAMERA SO THAT YOUR FACE AND EYES ARE SHOWING**
 - a. If you are using the camera, show your face; it helps others see your non-verbal cues.
 - b. You may be at home, but meeting in pajamas or shirtless is not appropriate so dress suitably. Comb your hair, clean your teeth, fix your clothes, etc. before your meeting time to show self-respect and respect for others.
- 6) Be READY TO LEARN AND PAY ATTENTION**
 - a. Catch up on other emails or other work later.
 - b. Silence your phone and put it away during Zoom classes.
 - c. Turn off TV, radios to reduce background noise.
- 7) USE YOUR MUTE BUTTON WHEN IN LOUD PLACES OR FOR DISTRACTIONS**
 - a. Pets barking, children crying, sneezing, coughing, etc. can happen unexpectedly. It’s best if you conference in a private space, but if you can’t find a quiet place, when noises arise **MUTE** your laptop.
- 8) REMEMBER TO UNMUTE WHEN SPEAKING**
 - a. Follow your instructor’s directions about using the “**raise hand**” icon or chat function to be recognized and to speak, but make sure you have unmuted your device.
 - b. Do not speak when someone else is speaking.
- 9) REMAIN FOCUSED AND PARTICIPATE IN THE MEETING**
 - a. Engage in the meeting. Look at the camera. Listen to instruction. Answer questions when asked.
 - b. Do not use the Zoom meeting to meet with your peers or put on a “show” for them.
- 10) PAUSE YOUR VIDEO IF MOVING OR DOING SOMETHING DISTRACTING**
 - a. In case emergencies happen and you need to leave the room or get up and move about, stop your zoom video.

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas.



Anticipated Class Schedule/Calendar

*****Tentative, subject to change without prior notice*****

Reading and assignments due before class are to be completed so that you may be an active participant in class activities.

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| <p>FALL 2022 MON 1200-1305</p> <p>Week/Date TOPICS In-Class Activities</p> | <p>Assigned Reading Lehne's Pharm Text 10e</p> <p><i>11e chapters</i></p> |
| <p>Week 1 August 15</p> <p>Syllabus Review Review on accessing resources within Canvas</p> <p>Review Textbook setup Tips to Succeed in Pharm Drug Card Format</p> <p>Pharmacology Basics</p> | <p>Chapters 1, 2 & 3</p> <p>Chapter 1: Orientation to Pharmacology</p> <p>Chapter 2: Application of Pharmacology to Clinical Practice</p> <p>Chapter 3: Drug Regulation Development, Names, and Information</p> |
| <p>Week 2 August 22</p> <p>Application of Pharmacokinetics</p> | <p>Chapter 4</p> <p>Chapter 4: Pharmacokinetics</p> |
| <p>Week 3 August 29</p> <p>Pharmacodynamics</p> <ul style="list-style-type: none"> • Dose-Response • Drug-Receptor interactions • Interpatient Variability <p>Drug-Drug Interactions Drug-Food Interactions Drug-Supplement Interactions</p> | <p>Chapters 5 & 6</p> <p>Chapter 5: Pharmacodynamics</p> <p>Chapter 6: Drug Interactions</p> |
| <p>Week 4 September 5 (No Class) LABOR DAY</p> <p>EXAM 1</p> | <p>EXAM 1: All content from weeks 1 – 3, which include chapters 1, 2, 3, 4, 5 & 6 in Lehnes and Introduction module in PME 4.0</p> |
| <p>Week 5 September 12</p> <p>Adverse Drug Reactions</p> <ul style="list-style-type: none"> • Medication Guides • Black Box Warnings | <p>Chapter 7</p> <p>Chapter 7: Adverse Drug Reactions and Medication Errors</p> |



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| <p>Medication Errors</p> <ul style="list-style-type: none">• Types• Causes• Reduction Methods• Reporting Errors <p>(In class, split into groups by type or example of error – compare what info was found- look for commonalities.) Lessons Learned Activity.</p> | |
| <p>Week 6 September 19</p> <p>Pharmacology of Drug Abuse</p> <ul style="list-style-type: none">• Definitions• Contributing Factors• Neurobiology of SUD• Principles of Treatment• Controlled Substances (DEA Schedules) <p>Alcohol Effects on Body Systems</p> <ul style="list-style-type: none">• Pharmacokinetics• Tolerance vs Physical Dependence• Interactions• Overdose• Alcohol Use Disorder• Drugs and Treatment <p>Nicotine and Smoking</p> <ul style="list-style-type: none">• Mechanism of Action• Effects/Toxicity• Smoking Cessation• Nicotine Replacement <p>Heroin, Oxycodone & other Opioids – management</p> | <p>Chapters 37, 38, 39 & 40</p> <p>Chapter 37: Substance Use Disorders (SUD) I- Basic Considerations</p> <p>Chapter 38: SUD II- Alcohol</p> <p>Chapter 39: SUD III- Nicotine and Smoking</p> <p>Chapter 40: SUD IV- Major Drugs of Abuse Other Than Alcohol and Nicotine</p> <p><i>Lehnes 11e:</i></p> <p><i>Chapter 40: Substance Use Disorders I- Basic Considerations</i></p> <p><i>Chapter 41: SUD II- Alcohol</i></p> <p><i>Chapter 42: SUD III- Nicotine</i></p> <p><i>Chapter 43: SUD IV- Major Drugs of Abuse Other Than Alcohol and Nicotine</i></p> |
| <p>Week 7 September 26</p> <p>Basic Considerations During Pregnancy</p> <ul style="list-style-type: none">• Placental transfer• Teratogenesis• FDA Preg Risk Categories• New Labeling Rules• Lactation and Drugs <p>Pediatric Patients</p> <ul style="list-style-type: none">• Pharmacokinetics: Neonates& Infants• Pharmacokinetics: 1 year and older | <p>Chapters 9 & 10</p> <p>Chapter 9: Drug Therapy During Pregnancy and Breast-Feeding</p> <p>Chapter 10: Drug Therapy in Pediatric Patients</p> <p><i>Chapter 11: Drug Therapy During Pregnancy and Breast-Feeding</i></p> <p><i>Chapter 12: Drug Therapy in Pediatric Patients</i></p> |



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| <ul style="list-style-type: none"> Promoting adherence in children | |
| <p>Week 8 October 3 Exam 2</p> | <p>Weeks 5, 6, & 7 material will be majority of EXAM 2. There will be 5 - 10 questions from EXAM 1 material.</p> |
| <p>Week 9 October 10</p> <p>Drug Therapy in Older Adults</p> <ul style="list-style-type: none"> Pharmacokinetic changes Pharmacodynamic changes Adverse Drug Reactions How to reduce ADRs Drug Interactions Adherence End of Life Considerations | <p>Chapter 11</p> <p>Chapter 11: Drug Therapy in Older Adults</p> <p><i>Chapter 13: Drug Therapy in Older Adults</i></p> |
| <p>Week 10 October 17</p> <p>Variation in Drug Responses</p> <ul style="list-style-type: none"> Body habitus, age Pathophysiology Tolerance Placebo Effect Absorption Variables Genetics Gender/Race Variables Comorbidities Diet <p>Complementary & Alternative Tx</p> <ul style="list-style-type: none"> Regulation of Supplements Standardization of Herbals Commonly used Dietary Supplements Harmful Supplements to Avoid | <p>Chapters 8 & 108</p> <p>Chapter 8: Individual Variation in Drug Responses</p> <p>Chapter 108: Complementary and Alternative Therapy</p> <p><i>Chapter 8: Individual Variation in Drug Responses</i></p> <p><i>Chapter 86: Complementary and Alternative Therapy</i></p> |
| <p>Week 11 October 24</p> <p>Natural vs Specific Acquired Cell-Mediated vs Ab-Mediated Cells of the Immune System Antibodies vs Antigens Immune Responses Immunizations</p> <ul style="list-style-type: none"> Definitions Active vs Passive | <p>Chapters 67 & 68</p> <p>Chapter 67: Review of Immune System</p> <p>Chapter 68: Childhood Immunization</p> <p><i>Chapter 70: Review of Immune System</i></p> <p><i>Chapter 71: Childhood Immunization</i></p> <p><i>Ch 72: Immunosuppressants (cyclosporine, sirolimus, methotrexate groups only)</i></p> |



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| <ul style="list-style-type: none"> • Records of immunizations • Adverse Effects • Immunization Schedule • Target Diseases <p>Specific Vaccines (AE/CI)</p> <p>Immunosuppressants Overview</p> | |
| <p>Week 12 October 31</p> <p>EXAM 3</p> | <p>EXAM 3: The majority of EXAM 3 content will be from weeks 9, 10, & 11. There will be 5 – 10 questions from previous material.</p> |
| <p>Week 13 November 7</p> <p>Neuropharmacology:</p> <ul style="list-style-type: none"> • Basic Mechanisms of Action • Synaptic Transmission Steps & Drug Effects <p>Autonomic Nervous System (ANS)</p> <ul style="list-style-type: none"> • Parasympathetic Nervous System • Sympathetic Nervous System • Feedback Regulation <p>Peripheral Nervous System (PNS)</p> <ul style="list-style-type: none"> • Cholinergic & Adrenergic Receptors • Specificity | <p>Chapters 12, 13, 14, & 15</p> <p>Chapter 12: Basic Principles of Neuropharmacology Chapter 13: Physiology of the Peripheral Nervous System Chapter 14: Muscarinic Agonists and Antagonists Chapter 15: Cholinesterase Inhibitors and Their Use in Myasthenia Gravis</p> <p><i>Chapter 14: Basic Principles of Neuropharmacology</i> <i>Chapter 15: Physiology of the Peripheral Nervous System</i> <i>Chapter 16: Muscarinic Agonists</i> <i>Chapter 17: Muscarinic Antagonists</i> <i>Chapter 18: Cholinesterase Inhibitors and Their Use in Myasthenia Gravis</i></p> |
| <p>Week 14 November 14</p> <p>Cholinergic Drugs: Muscarinic-Agonists & Antagonists Cholinesterase Inhibitors Neuromuscular Blocking Agents Adrenergic Agonists Alpha-Adrenergic Antagonists Beta-Adrenergic Antagonists Centrally Acting Alpha₂-Agonists Headache Medications</p> | <p>Chapters 16, 17, 18, 19, & 30</p> <p>Chapter 16: Drugs That Block Nicotinic Cholinergic Transmission: Neuromuscular Blocking Agents Chapter 17: Adrenergic Agonists Chapter 18: Adrenergic Antagonists Chapter 19: Indirect-Acting Antiadrenergic Agents Chapter 30: Drugs for Headache</p> <p><i>Chapter 19: Drugs That Block Nicotinic Cholinergic Transmission: Neuromuscular Blocking Agents</i> <i>Chapter 20: Adrenergic Agonists</i> <i>Chapter 21: Adrenergic Antagonists</i> <i>Chapter 22: Indirect-Acting Antiadrenergic</i></p> |



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| | <p><i>Agents</i> <i>Chapter 33: Drugs for Headache</i></p> |
| <p>Week 15 November 21</p> <p>IVC Campus Closed Thanksgiving Break</p> <p>NO CLASSES</p> <p>Opioid/Non-opioids Pain Management in CA</p> <p>Anesthetic and Anesthesia Malignant Hyperthermia Inhalation Anesthetics Intravenous Anesthetics</p> | <p>Chapters 28 & 29 Chapter 28: Opioid Analgesics, Opioid Antagonists, and Nonopioid Centrally Acting Analgesics Chapter 29: Pain Management in Patients with Cancer</p> <p><i>Chapter 31: Opioid Analgesics, Opioid Antagonists, and Nonopioid Centrally Acting Analgesics</i> <i>Chapter 32: Pain Management in Patients with Cancer</i></p> <p>Chapters 26 & 27 Chapter 26: Local Anesthetics Chapter 27: General Anesthetics</p> <p><i>Chapter 29: Local Anesthetics</i> <i>Chapter 30: General Anesthetics</i></p> |
| <p>Week 15 November 28</p> <p>Final Exam Review Session In-Person</p> | |
| <p>Week 16 December 5th</p> <p>Final Exam</p> | <p>FINAL EXAM: Majority of content is from weeks 13-15 with about 5-10 questions from previous material.</p> |

*****Subject to change without prior notice*****