Date
Course Title
Credits
Course Number
Pre-requisite(s)
Hours
Pharmacology & Medication Administration
24 Hours
PN 112
PN113
Co-requisite(s)
Out of Class Work Assignment Hours
10 Hours

Place and Time of Class Meeting

Location: Express Training Services, 3911 Newberry Road, Gainesville, FL., 32607
Time: Classroom: Monday through Friday from 9:00 AM TO 4:30 PM

Name and Contact Information of Instructor

Linnette Nolte RN
352-817-8923 Cell
Linnrmri@aol.com (email)

Book required

(Express Training Services recognizes the use of the textbook in the classroom as part of the educational methodology and strategy applied in diverse materials. The textbook is part of the curriculum and is used to reach the student in an effective manner in the classroom. Every student is expected to acquire and use the textbook.)

Essentials of Pharmacology for Health Occupations, 6th Edition
Woodrow/Colbert/Smith
Cengage Learning: December 7th, 2010

Dosage Calculations, 9th Edition
Pickar/Pickar-Abernethy
Classroom expectations for students

Attendance Policy
Students are responsible for following school policy on attendance. Students must attend 90% of their class. Students who miss 10% of their class must meet with their instructor before attending the next class session. Students who miss more than 10% of their classes will be dropped from the class, forfeit all equipment fees, and must have written approval from the Director of Admissions to re-enroll. The tuition will be refunded in accordance with the refund policy in the catalog.

Clinical days may not be missed and must be made up. Two make up clinical days will be permitted per class unless there are extenuating circumstances.

Students with extenuating circumstances, including but not limited to, hospital confinement, personal problems, and extended illness, may appeal to the Director of Admissions for any exceptions to the absence rule. Documentation of the extenuating circumstances may be required.

Student Tardiness Policy
A student is considered tardy/late if he/she comes to class five minutes late. With three tardies the student accumulates one full absence. If the student misses half of the class period, it is a full absence. When a student has more than three tardies, the instructor will contact the Director of Education and request and intervention session with the student. The goal of the intervention session is to develop and implement an intervention program to help students learn new ways to save and manage time.

NOTE: Plagiarism is defined as the use, without proper acknowledgment, of the ideas, phrases, sentences, or larger units of discourse from another writer or speaker. Plagiarism includes the unauthorized copying of software and the violation of copyright laws. Students who commit plagiarism will obtain a grade of “Failure” on their exam or assignment.

Course Description
The purpose of this introductory course is to provide the foundation for safe practice of medication administration for the student practical nurse. Content includes drug classifications, therapeutic uses, side effects, adverse reactions, safe handling, resources, distribution systems, administration, and documentation. A simulated medication administration will be a lab activity. The basic principles of this course will be specifically applied to all course content throughout the remainder of the program.

Prerequisite: Successful completion (grade of B or better) of PN112.
Learning Objectives
Upon completion of the course, students are able to:

1. Demonstrate the ability to apply basic math skills to calculate medication dosages between the metric, apothecary, and avoirdupois systems for pediatric, adult and elderly patients.
2. Demonstrate ability to observe patients for desired and/or adverse effects of medications.
3. Demonstrate the 6 rights of medication administration.
4. Demonstrate ability to maintain and store medications and equipment appropriately.
5. Demonstrate ability to document medication administration (orally w medicine cup/syringe, nasogastric tube, gastric tube, and rectally) and patient response as necessary.
6. Discuss the National Patient Safety Goals (jointcommission.org)
7. Define schedules of controlled substances, and differentiate between C-I to C-V schedules.
8. Differentiate among the following Drug Names: generic, official, trade, and chemical.
9. Define the following side effects: ototoxicity, nephrotoxicity, tinnitus, and photosensitivity.
10. Define the following undesirable drug effects: teratogenic effect, idiosyncrasy, tolerance, dependence, hypersensitivity, and anaphylactic reaction.
11. Define the following types of injections and explain how they differ in administration and absorption rate: IV, IM, SC, and ID.
12. Identify common abbreviations and symbols used for medication orders.
13. Explain moral, ethical, and legal responsibilities regarding medication errors.

Topical Outline and Schedule

<table>
<thead>
<tr>
<th>DATE</th>
<th>SPECIFIC OBJECTIVES</th>
<th>DAY 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Library Orientation Chapter 11 - 15 Essentials of Pharmacology for Health Occupations 6th Ed From each chapter the student will be able to</td>
<td>Syllabus/Discuss List of Topics/Objectives</td>
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<tr>
<td></td>
<td>Name the categories of Vitamins, Minerals, and Herbs.</td>
<td>Recognize each of the Vitamins, Minerals and Herbs as fat-soluble or water-soluble, listing minerals and their sources, function and signs of deficiency. Chapter 11 pp 158-188</td>
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<tr>
<td></td>
<td>Classify skin medications according to their actions/side effects/categories/and contraindications.</td>
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<td></td>
<td>Identify side effects of the seven major categories of skin medications and contraindications when appropriate.</td>
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<td>Compare and contrast characteristics of the four categories of ANS drugs.</td>
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<td></td>
<td>Name the six characteristics associated with administration of Antineoplastic Drugs.</td>
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<td></td>
<td>Identify Urinary System Drugs.</td>
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LEARNING ACTIVITIES
Discussion of Syllabus/Assignments/Lecture/discussion/presentation/participation,/review questions.

OUT OF CLASS WORK ASSIGNMENTS
Homework: Read: Chapter 16-19 Textbook: Essentials of Pharmacology for Health Occupations 6th Ed.

Review readings covered in class today for quiz tomorrow over:
- Chapter 11 pp 158-188 Vitamins, Minerals and Herbs
- Chapter 12 pp. 193-207 Skin Medications
- Chapter 13 pp 210-218 Autonomic Nervous System Drugs
- Chapter 14 pp 221-231 Anti-neoplastic Drugs
- Chapter 15 pp 234-246 Urinary System Drugs

Read and be prepared for class discussion tomorrow Textbook: Essentials of Pharmacology for Health Occupations 6th Ed.:
- Chapter 16 pp 250-269 GI Drugs
- Chapter 17 pp 273-306 Anti-infective Drugs
- Chapter 18 pp 310-322 Eye Medications
- Chapter 19 pp 327-345 Analgesics, Sedatives, & Hypnotics
- Kaplan Focused Review Pharmacology I: version 1 and 2 online

DATE DAY 2 SPECIFIC OBJECTIVES
Chapter 16 - 19 Essentials of Pharmacology for Health Occupations 6th Ed From each chapter the student will be able to respond to Course Objectives regarding:
- Describe side effects, contraindications, and interactions of Gastrointestinal Drugs.
- Identify side effects, contraindications, and interactions common to
each category of Anti-infective Drugs.

- Demonstrate the administration technique for instillation of Eye Medications to reduce systemic absorption.
- Identify side effects, contraindications, and interactions for each category of ophthalmic medication
- Compare and contrast the purpose and action of nonopioid, opioid, analgesics, sedatives, hypnotics, and antimigraine agents.

<table>
<thead>
<tr>
<th>TOPIC (S)</th>
<th>QUIZ on Chapter 11-15 Textbook: Essentials of Pharmacology for Health Occupations 6th Ed. Discuss List of Topics/Objectives</th>
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<tr>
<td></td>
<td>- Compare and contrast the purpose and action of nonopioid, opioid, analgesics, sedatives, hypnotics, and antimigraine agents. Chapter 19 pp 327-345 Analgesics, Sedatives, &amp; Hypnotics</td>
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<tr>
<th>LEARNING ACTIVITIES</th>
<th>Assignments/Lecture/discussion/presentation/participation/review questions related to chapters 16-19.</th>
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<tr>
<td></td>
<td>Read and be prepared for class discussion tomorrow Textbook: Essentials of Pharmacology for Health Occupations 6th Ed.:</td>
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<tr>
<td></td>
<td>• Chapter 20 pp 349-378 Psychotropic Medications, Alcohol, &amp; Drug Abuse</td>
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<tr>
<td></td>
<td>• Chapter 21 pp 382-391 Musculoskeletal &amp; Anti-inflammatory Drugs</td>
</tr>
<tr>
<td></td>
<td>• Chapter 22 pp 395-409 Anti-convulsants, Anti-parkinsonian Drugs &amp;</td>
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</tbody>
</table>
### Agents for Alz Disease
- Chapter 23 pp 413-431 Endocrine System Drugs
- Chapter 24 pp 435-456 Reproductive System Drugs
- Chapter 25 pp 460-492 Cardiovascular Drugs
- Chapter 26 pp 496-515 Respiratory System Drugs & Anti-histamines
- Chapter 27 pp 519-530 Drugs & Older Adults
- Kaplan Focused Review Pharmacology II: versions 1 and 2

### TOPIC (S)

| DATE |
|SPECIFIC OBJECTIVES | DAY 3 |
| Chapter 20 – 27 Essentials of Pharmacology for Health Occupations 6th Ed |
| From each chapter the student will be able to respond to Course Objectives regarding: |
| • Classify the most commonly used psychotropic medications according to the following five classifications |
| • Describe commonly used: Musculoskeletal and Anti-inflammatory Drugs. Skeletal Muscle Relaxants. |
| • List the medications used for each type of epilepsy, for Parkinsonism, for Alzheimer’s disease, for restless legs syndrome and common side effects. |
| • Identify the hormones secreted by these four endocrine glands: pituitary, adrenals, thyroid, and islets of Langerhans |
| • List agents of the Endocrine System Drugs Therapies. |
| • Describe the actions and effects of Cardiovascular Drugs. |
| • List medications used in treatment of the Respiratory System the side effects, contraindications, and interactions. |
| • Identify Drugs in the treatment of Older Adults their Cumulative Effects. |

### TOPIC (S)

| QUIZ on Chapter 16-19 Textbook: Essentials of Pharmacology for Health Occupations 6th Ed. Discuss List of Topics/Objectives |
| Identify psychotropic medications within the following five classes of CNS stimulants or antidepressants or anxiolytics, antimanics and or antipsychotic medications. Also list purpose, action, side effects, interactions and contraindications for Psychotropic Medications, CNS Stimulants. Selective Norepinephrine Reuptake Inhibitor (SNRI). Antidepressants. Antimanic Agents. Anxiolytics. Antipsychotic |
|---------------------|---|
| OUT OF CLASS WORK ASSIGNMENTS | • Chapter 20 pp 349-378 Psychotropic Medications, Alcohol, & Drug Abuse  
• Chapter 21 pp 382-391 Musculoskeletal & Anti-inflammatory Drugs  
• Chapter 22 pp 395-409 Anti-convulsants, Anti-parkinsonian Drugs & Agents for Alz Disease |

Medications/Major Tranquilizers. Chapter 20 pp 349-378 Psychotropic Medications, Alcohol, & Drug Abuse  
- Describe the most commonly used - Musculoskeletal and Anti-inflammatory Drugs along with Skeletal Muscle Relaxants Chapter 21 pp 382-391 Musculoskeletal & Anti-inflammatory Drugs  
- Identify the most common medications used to treat epilepsy, Parkinson’s, Alzheimer’s disease, restless legs syndrome and common side effects Chapter 22 pp 395-409 Anti-convulsants, Anti-parkinsonian Drugs & Agents for Alz Disease  
- List the most common agents of the Endocrine System Drugs and Therapies regarding: Pituitary Hormones. Adrenal Corticosteroids. Thyroid Agents. Antithyroid Agents. Antidiabetic Agents Chapter 23 pp 413-431 Endocrine System Drugs  
- Identify the common medications and treatments of the Reproductive System Drugs such as the Androgens. Impotence Agents. Estrogens. Progestins. Choice of Contraceptives. Drugs for Labor and Delivery. Other Gonadotropic Drugs and Infertility Drugs. Chapter 24 pp 435-456 Reproductive System Drugs  
- Identify Drugs in the treatment of Older Adults, Cumulative Effects of Drugs. Potentially Inappropriate Medication Use in Older Adults, Drugs That May Cause Mental Impairment, Nonsteroidal Anti-inflammatory Drugs, and Polypharmacy. Chapter 27 pp 519-530 Drugs & Older Adults |
Chapter 23 pp 413-431 Endocrine System Drugs
Chapter 24 pp 435-456 Reproductive System Drugs
Chapter 25 pp 460-492 Cardiovascular Drugs
Chapter 26 pp 496-515 Respiratory System Drugs & Anti-histamines
Chapter 27 pp 519-530 Drugs & Older Adults

Read, practice, and be prepared for class discussion tomorrow.

Textbook: Dosage Calculations 8th edition:
Chapter 1 pp 5-34 Fractions & Decimals
Chapter 2 pp 37-51 Ratios, Percent’s, Simple Equations & Ratio-Proportion
Chapter 3 pp 59-69 Systems of Measurement
Chapter 4 pp 73-88 Conversions: Metric, Apothecary & Household Systems
Chapter 5 pp 91-98 Conversions: for other Clinical Applications: Time & Temperature
Chapter 6 pp 101-113 Equipment Used in Dosage Measurement
Chapter 7 pp 117-128 Interpreting Drug Orders
Chapter 8 pp 133-145 Understanding Drug Labels
Chapter 9 pp 149-162 Measurement Systems, Drug Orders & Drug Labels
Chapter 10 pp 169-193 Oral Dosage of Drugs
Kaplan Focused Review Basic Medication Dosage Calculation online

**DATE** | **SPECIFIC OBJECTIVES** | **DAY 4**
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Chapter 1 – 10 Dosage Calculations 8th Ed
From each chapter the student will be able to respond to Course Objectives regarding:
- Compare the values of Fractions and Decimals, and convert between mixed numbers and improper fractions, and between reduced and equivalent forms of fractions through addition, subtraction, multiplication and division.
- Explain the values expressed in Ratios, Percents, Fractions, Decimals and determine the value of X in simple equations/proportions.
- Interpret and properly express: Metric, Apothecary, and Household Systems
- Recognize the differences between: Time (traditional and international time), and Temperature (Celsius and Fahrenheit)
- Recognize and select the appropriate, read and interpret the calibrations of each utensil selected for: Equipment Used in Dosage Measurement
- Classify, read and write correct medical notation.
- Differentiate the brand and generic names of drugs, dosage strength/concentration, form in which the drug is supplied, total volume of drug in container, and route of administration.
• Describe the consequences and costs of medication errors, along with the six common causes of medication errors.
• Describe the requirements of The Joint Commission to prevent medications errors.
• Explain how to convert all units of measurement to the same system and same size units
• Determine the number of tablets, capsules, volume of liquid per dose that is contained in prescribed dosages or in a solution form.

TOPIC (S)

QUIZ on Chapter 20-27 Textbook: Essentials of Pharmacology for Health Occupations 6th Ed. Discuss List of Topics/Objectives

• Compare the values of Fractions and Decimals, and convert between mixed numbers and improper fractions, and between reduced and equivalent forms of fractions. Chapter 1 pp 5-34 Fractions & Decimals
• Recognize values expressed in Ratios, Percents, Fractions, Decimals and determine the value of X in simple equations/proportions. Chapter 2 pp 37-51 Ratios, Percent’s, Simple Equations & Ratio-Proportion
• Differentiate between: Time and Temperature (Celsius and Fahrenheit). Chapter 5 pp 91-98 Conversions: for other Clinical Applications: Time & Temperature
• Recognize, read and interpret the appropriate calibrations of each utensil selected for measuring appropriate drug dispensing. Chapter 6 pp 101-113 Equipment Used in Dosage Measurement
• Classify the notation of a doctor’s order that specifies the dosage, route, and frequency of the medication to be administered by interpreting physician orders. Chapter 7 pp 117-128 Interpreting Drug Orders
• Describe the consequences and costs of medication errors by misinterpreting/not understanding the parts of a drug label, along with the six common causes of medication errors. Chapter 8 pp 133-145 Understanding Drug Labels
• Determine how to convert any/all units of measurement to the same system and same size units. Chapter 9 pp 149-162 Measurement Systems, Drug Orders & Drug Labels
• Determine the correct number of tablets, capsules, volume of liquid per dose that is contained in prescribed dosages or in a solution form. Chapter 10 pp 169-193 Oral Dosage of Drugs

LEARNING ACTIVITIES

• Lecture/discussion/participation/review
• Group participation in problem solving

OUT OF CLASS WORK ASSIGNMENTS

• Chapter 1 pp 5-34 Fractions & Decimals
### Chapter 2 pp 37-51 Ratios, Percent’s, Simple Equations & Ratio-Proportion
- Chapter 3 pp 59-69 Systems of Measurement
- Chapter 4 pp 73-88 Conversions: Metric, Apothecary & Household Systems
- Chapter 5 pp 91-98 Conversions: for other Clinical Applications: Time & Temperature
- Chapter 6 pp 101-113 Equipment Used in Dosage Measurement
- Chapter 7 pp 117-128 Interpreting Drug Orders
- Chapter 8 pp 133-145 Understanding Drug Labels
- Chapter 9 pp 149-162 Measurement Systems, Drug Orders & Drug Labels
- Chapter 10 pp 169-193 Oral Dosage of Drugs

**Read, practice, and be prepared for class discussion tomorrow**

Textbook: Dosage Calculations 8th Ed:
- Chapter 11 pp 205-231 Parenteral Dosage of Drugs
- Chapter 12 pp 241-276 Reconstitution of Solutions
- Chapter 13 pp 285-305 Alternative Dosage Calculation Methods
- Chapter 14 pp 309-328 Adult Dosages Based on Body Weight
- Chapter 15 pp 355-398 IV Solutions, Equipment & Calculations
- Kaplan Focused Review Pharmacology III: versions 2 and 3

### DATE
### DAY 5

<table>
<thead>
<tr>
<th>SPECIFIC OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 11 – 15 Dosage Calculations 8th Ed</td>
</tr>
<tr>
<td>From each chapter the student will be able to respond to Course Objectives regarding:</td>
</tr>
<tr>
<td>• Identify insulins in current use.</td>
</tr>
<tr>
<td>• Define and apply the terms solvent (diluents), solute, for Reconstitution of Solutions</td>
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<tr>
<td>• Resolve the dosage calculation ratio-proportion: ratio for the dosage you have on hand equals the ratio for the desired dosage, dimensional analysis, and or ration-proportion</td>
</tr>
<tr>
<td>• Compute pounds to kilograms, doses by body weight for both: Pediatric and Adult Dosages Based on Body Weight Advanced Calculations</td>
</tr>
<tr>
<td>• Identify common Intravenous Solutions, Equipment, and Calculations.</td>
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<th>TOPIC (S)</th>
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<tbody>
<tr>
<td><strong>Quiz</strong> Chapter 1 – 10 Textbook: Dosage Calculations 8th edition</td>
</tr>
<tr>
<td>Discuss List of Topics/Objectives</td>
</tr>
<tr>
<td>• Discuss the difference between rapid-, short-, intermediate- and long-acting insulins.</td>
</tr>
<tr>
<td>• Explain single insulin and combined insulin dosages. Chapter 11 pp 205-231 Parenteral Dosage of Drugs</td>
</tr>
<tr>
<td>• Define, apply and differentiate between varying directions for reconstitution and select the correct amount to prepare the dosage ordered. Chapter 12 pp 241-276 Reconstitution of Solutions</td>
</tr>
</tbody>
</table>
Choose, by trying all three methods: ratio for the dosage you have on hand equals the ratio for the desired dosage, dimensional analysis, and or ratio-proportion, the one that is easiest and most logical to you. Chapter 13 pp 285-305 Alternative Dosage Calculation Methods

Determine body weight from lb. to kg. And kg. to lb., doses using mcg/mg per kg or per lb and BSA. Chapter 14 pp 309-328 Pediatric & Adult Dosages Based on Body Weight

Identify IV solutions as hypertonic, isotonic, and hypotonic, proper equipment for administration, along with calculations for safe administration (mL/h, drop factor gtt/mL, drops per minute gtt/min). Chapter 15 pp 355-398 IV Solutions, Equipment & Calculations

LEARNING ACTIVITIES

- Lecture/participation, review questions/Critical Thinking
- Group participation in problem solving

OUT OF CLASS WORK ASSIGNMENTS

Homework: Continue to review for Final Dosage Exam

Instructional Methods

The following strategies may be used in this class:

- Lecture/Discussion
- Textbook Assignments
- Performance Objectives
- Audio/visuals with study guides
- Worksheets
- Power point presentations
- Demonstration of skills with return demonstration

Instructional Materials and References

- Nursing 2014 Drug Handbook (Nursing Drug Handbook) by Lippincott Williams & Wilkins – Published @2013 - ISBN/ISSN: 9781451186352

Assessment Criteria and Methods of Evaluating Students

A= 90-100 %
B= 80-89%
C= 70-79%
D= 60-69%
F= 0-59%
W= Withdrawn
I= Incomplete
Generally, the grades “A” through “B” are considered passing grades. Grades "W" and "I" indicate that no grades were earned for the course. A "W" grade indicates that the student withdrew from the course. An "I" grade indicates that the student was passing the course, but failed to complete all the required course work. The instructor, in his/her discretion may grant an "I" grade instead of an "F", pending completion of the course work by the student within a specified time arranged by the instructor and told to the student. It is the student's responsibility to follow-up with the instructor to complete the course work. If the course work is not completed by the arranged time, the “I” grade becomes an “F”.

**Distribution of Grade Elements**

There will be three quizzes from the text: *Essentials of Pharmacology for Health Occupations*. Each quiz will be worth one third of the Final grade in *Pharmacology*.

Minimum passing grade for this course is 80%

A separate Dosage Final Exam will be administered. In order to continue past Med-Surg II, a score of 100% must be met. Each student will be allowed three attempts. Dates for testing TBA.

Date Syllabus Was Last Reviewed – June 22, 2014