

**STATE UNIVERSITY OF NEW YORK  
COLLEGE OF TECHNOLOGY  
CANTON, NEW YORK**



**COURSE OUTLINE**

**LPNC 100 –Drug Dosage Calculations and Pharmacology**

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**SCHOOL OF SCIENCE, HEALTH, AND CRIMINAL JUSTICE  
NURSING DEPARTMENT**

May 2016

Revised December 2017 by Christine Brassard, Michael Pinkerton & John Conklin

A. **TITLE**: Drug Dosage Calculations and Pharmacology

B. **COURSE NUMBER**: LPNC 100

C. **CREDIT HOURS**: 3

D. **WRITING INTENSIVE COURSE**: No

E. **COURSE LENGTH**: 15 weeks

F. **SEMESTER OFFERED**: Fall

G. **HOURS OF LECTURE, LABORATORY, CLINICAL**: 3 hours of lecture per week

**1 credit = 50 minutes of lecture per week**

H. **CATALOG DESCRIPTION**:

This course introduces the principles related to pharmacology. It examines a variety of drug classifications and their effects on the body. The course places emphasis on use of the nursing process in drug administration and includes drug calculations.

I. **PREREQUISITES/CO-REQUISITES**:

- Practical nursing certificate majors only
- BIOL 217 Human Anatomy and Physiology I
- ENGL 101 Composition and the Spoken Word
- LPNC 101 PN Fundamentals

**J. STUDENT LEARNING OUTCOMES:**

By the end of this course, the student will be able to:

Course Student Learning Outcomes (SLO)	Program SLO
Demonstrate proficiency in basic mathematic skills for oral medications, injections and intravenous flow rates.	Demonstrate proper technique with nursing skills, use of client care equipment and technology in a cost effective manner.
Apply safety and infection control measures related to pharmacology to specific client care scenarios.	Understand client disorders and nursing care utilizing current evidence based practice.
Apply principles of safe nursing care, to ensure the safety of self, client, significant others and members of the health care team.	Demonstrate appropriate care to clients with stable and predictable conditions.
Utilize standardized pharmacological teaching tools to promote and maintain health and to reduce risks for clients experiencing common altered health states in the hospital and extended care facilities.	Implement standardized teaching tools to promote and maintain health and to reduce risks for clients experiencing common altered health states in the hospital and extended care facilities.

**K. REQUIRED TEXTS:**

Henry, N. J. E., Holman, H.C., Williams, D., Wilford, K., Barlow, M.S., Janowski, M.J., Leehy, P. L., & Lemon, T. (2017). *Content mastery series review module: PN pharmacology for nurses* (PN edition 7.0). USA: Assessment Technologies Institute, LLC.

ATI Essentials Package

**L. REFERENCES:** None

**M. EQUIPMENT:** Portable computer with internet access

**N. GRADING METHOD:**

- A = 90 – 100%
- B+ = 85 - 89%
- B = 80 – 84%
- C+ = 75 – 79%
- C = 70 – 74%
- D+ = 65 – 69%
- D = 60 – 64%
- F = 59% and below

**A grade of C+ or better** is required for successful completion of all nursing courses and a grade of C or better is required for all co-requisite courses to continue on in the program.

**O. MEASUREMENT CRITERIA/METHODS:**

<b>Activity</b>	<b>Purpose</b>	<b>Percentage of Grade</b>
Drug Dosage Exam	Demonstrate proficiency in basic mathematic skills for oral medications, injections and intravenous flow rates.	10%
Exams	Apply principles of safe nursing care, to ensure the safety of self, client, significant others and members of the health care team.  Apply safety and infection control measures related to pharmacology to specific client care scenarios.	55%
ATI Exam & Assignments	Apply principles of safe nursing care, to ensure the safety of self, client, significant others and members of the health care team.  Apply safety and infection control measures related to pharmacology to specific client care scenarios.	10%
Final Exam	Apply principles of safe nursing care, to ensure the safety of self, client, significant others and members of the health care team.  Apply safety and infection control measures related to pharmacology to specific client care scenarios.	25%
Total		100%

**Note:** All students are required per program policy to pass a drug dosage calculation exam with a grade of 100 in order to pass this course. Students will be given three opportunities to pass the exam with the required grade of 100. Failure to achieve a grade of 100% after the third attempt, will result in a course grade of “F” or the student may elect to withdraw.

**P. DETAILED COURSE OUTLINE:**

1. Principles of Drug Administration
  - a. Absorption
  - b. Distribution
  - c. Metabolism
  - d. Excretion
  - e. Half-life
  - f. Drug Dosage Calculation
2. Systems of measurement and conversion
  - a. Methods for calculation

- b. Calculations for oral medications
  - c. Calculations for injectable drugs
  - d. Calculations for IV fluids
  - e. Drug calculation based on patient weight
- 3. Nursing Process and Pharmacology
- 4. Pharmacology across the Life-Span
- 5. Drugs Used to Treat Infection
  - a. Antibiotics
  - b. Antituberculosis medications
  - c. Antivirals
  - d. Antifungals
  - e. Antiparasitics
  - f. Anthelmintics
  - g. Antimalarials
- 6. Drugs Affecting the Respiratory System
  - a. Antihistamines
  - b. Antitussives
  - c. Bronchodilators
  - d. Decongestants
  - e. Expectorants
  - f. Steroids
  - g. Leukotriene Modifiers
  - h. Mast Cell Stabilizers
  - i. Mucolytics
- 7. Drugs Affecting the Cardiovascular System
  - a. Adrenergic agents
  - b. Cardiac glycosides
  - c. Vasodilators
  - d. Adrenergic blockers
  - e. Calcium channel blockers
  - f. Lipid lowering agents
  - g. Antihypertensives
  - h. Catecholamines for shock
- 8. Drugs Affecting the Blood
  - a. Anticoagulants
  - b. Anti-anemics
  - c. Thrombolytics
  - d. Antiplatelets
  - e. Blood products
- 9. Drugs Affecting the Digestive System
  - a. Antacids
  - b. Antidiarrheals
  - c. Antiemetics

- d. Antiulcer drugs
  - e. Emetics
  - f. Laxatives
  - g. Vitamins
10. Drugs Affecting the Nervous System
- a. Sympathetic Nervous System
    - i. Adrenergics
    - ii. Catecholamines
    - iii. Adrenergic blockers
      - 1. Alpha
      - 2. Beta
  - b. Parasympathetic Nervous System
    - i. Cholinergics
    - ii. Cholinergic blockers
  - c. Neuromuscular System
    - i. Skeletal muscle relaxants
    - ii. Neuromuscular blockers
    - iii. Central Nervous System Stimulants
    - iv. Central Nervous System Depressants
    - v. Seizure Disorder Medications
    - vi. Anesthetics
11. Drugs for Pain and Inflammation
- a. Narcotics
  - b. Non-narcotics
  - c. NSAIDs
  - d. Aspirin
  - e. Corticosteroids
  - f. Migraine medications
  - g. Anti-Gout medications
12. Drugs Affecting the Immune System
- a. Immunizing agents
  - b. Immunostimulants
  - c. Immunosuppressants
  - d. HIV and AIDS agents
13. Drugs Affecting the Fluid Balance and the Renal System
- a. Diuretics
  - b. Electrolytes
14. Drugs Affecting the Integumentary System
- a. Antiseptics and Disinfectants
  - b. Antiinfectives
  - c. Antifungals
  - d. Antiparasitics
  - e. Topical Corticosteroids

- f. Drugs used to treat acne
- g. Drugs used to treat burns
- 15. Drugs Affecting the Endocrine System
  - a. Insulin
  - b. Oral diabetic agents
  - c. Antithyroid agents
  - d. Thyroid agents
  - e. Corticosteroids
  - f. Estrogen
  - g. Progesterone
  - h. Androgens
  - i. Antiandrogens
- 16. Psychiatric Medications
  - a. Antidepressants
  - b. Mood Stabilizers
  - c. Antianxiety agents
  - d. Antipsychotic

Q. LABORATORY OUTLINE: NA