

**Northern Marianas College**  
**CURRICULUM ACTION REQUEST**

**Effective Semester / Session:** Fall 2012

**Type of Action:**

- New
- Modification
- Move to Inactive (Stop Out)
- Cancellation

**Course Alpha and Number:** NU 124

**Course Title:** Pharmacology for Nurses and Clinical Math

**Reason for initiating, revising, or canceling:**

Course guide is being updated to reflect the General College Catalog March 2011 update, nursing program grading policy, use of a new textbook, and implementation of newly approved (02/17/12) Associate in Science Degree in Nursing Individualized Degree Plan (IDP).

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Rosa M. Tudela, RN

07/06/12

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Proposer

Date

  
Rosa M. Tudela, RN

07/06/12

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Department Chair

Date

  
Barbara K. Merfalen

07/06/12

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Dean of Academic Programs and Services

Date

# Northern Marianas College

## Course Guide

Course: NU 124 Pharmacology for Nurses and Clinical Math

**1. Department**  
Nursing

**2. Purpose**

The purpose of this course is to teach pharmacological concepts to nursing students who wish to obtain an Associate in Science degree in Nursing. The course includes material about the principles of pharmacology, administration of medications, drug classifications, and the effect of medications on each of the body systems. The course prepares the student to administer and monitor the effects of medications. The target populations are students who are enrolled in the first term of nursing, NU 105 Basic Nursing Concepts and Skills, and nurses who wish to do a comprehensive review and update of medications. This course is required for the Associate in Science degree in Nursing. Upon completion of the program and passage of the National Council Licensure Examination for Registered Nurses (NCLEX-RN), the graduating nursing students will be prepared to fill one of the consistently vacant RN positions in the health care facilities in the Commonwealth of the Northern Mariana Islands (CNMI).

**3. Description**

**A. Recommended Textbook(s) and Related Materials**

Required:

Wooddraw, Ruth. *Essentials of Pharmacology for Health Occupation*.  
5th ed. Clifton Park, NY: Delmar-Cengage Learning, 2007.

Readability level: Grade 12

A current Nursing Drug Handbook (published within the last 3 years)

**B. Contact Hours**

1. **Lecture:** 4 hours per week / 60 hours per semester
2. **Lab:** None
3. **Other:** None

**C. Credits**

1. **Number:** 4
2. **Type:** Regular degree credits

# Northern Marianas College

## Course Guide

Course: NU 124 Pharmacology for Nurses and Clinical Math

### D. Catalogue Course Description

This course outlines the concepts used in administering medications and in monitoring clients for the effects of medication administration. This course includes the study of drug classifications, types, actions, contraindications, precautions, side effects, dosages, and nursing implications. This course also covers dosage calculations and measurement systems, reading medication labels, using syringes, intravenous (IV) fluid calculations, and calculations in specialty units. Prerequisites: A grade of "C" or higher in BI 101, BI 225, BI 251, BI 252, CH 124, EN 101, MA 132, and PY 101. Concurrent enrollment: NU 105 and NU 209, or approval of the Nursing Department Chair. English Placement Level: EN 202. Math Placement Level: MA 161. (Offered Spring)

### E. Degree or Certificate Requirements Met by Course

This course fulfills a requirement of the Associate in Science degree in Nursing.

### F. Course Activities and Design

This course will consist of four hours per week of theory instruction in the classroom. Activities may include, but not limited to: lectures, discussions, group activities, computerized learning programs, audiovisual programs, Internet resources, and demonstrations. Key drugs or prototypical drugs, within a class will be used to teach each of the drug classifications. Case studies will be used to help students apply knowledge and anticipate decisions they will be making in clinical practice regarding the administration of medications. Clinical math includes information, explanations, and practice needed to competently and confidently calculate drug dosages.

### 4. Course Prerequisite(s); Concurrent Course Enrollment; Required English/Mathematics Placement Level(s)

Prerequisite(s): A "C" grade or higher in BI 101, BI 225, BI 251, BI 252, CH 124, EN 101, MA 132, and PY 101. Concurrent enrollment: NU 105 and NU 209, or approval of the Nursing Department Chair.

English Placement Level: EN 202

Math Placement Level: MA 161

# Northern Marianas College

## Course Guide

Course: NU 124 Pharmacology for Nurses and Clinical Math

### 5. Estimated Cost of Course; Instructional Resources Needed

Cost to the Student: Tuition for a 4-credit course, textbooks, and any applicable fees.

Cost to the College: Instructor's salary.

Instructional resources needed for this course include videotaped materials, TV/VCR, CD-ROM, computer software programs, pens, papers, overhead projector and transparencies, chalk, markers, simulated medications, medication administration supplies, NMC Internet access, copier machine, copier paper and toner.

### 6. Method of Evaluation

Student grades will be based on the regular letter grade system as described below:

- A: Excellent-grade points: 4.0;
- B: Above average-grade points: 3.0;
- C: Average-grade points: 2.0;
- D: Below average- grade points; 1.0;
- F: Failure-grade points: 0.0.

The Nursing Department utilizes the following grading scale to assign letter grades to grade percentages:

- A: 92-100%
- B: 82-91%
- C: 75-81%
- D: 60-74%
- F: 0-59%

If a nursing course contains a clinical component, student grades will also be based on these grade percentages. The student must pass both the clinical and the theory with 75% or higher in order to pass the course. **This course does not have a clinical component.**

NMC's and Nursing Department's attendance policies will be followed.

# Northern Marianas College

## Course Guide

Course: NU 124 Pharmacology for Nurses and Clinical Math

### 7. Course Outline

This is a topical outline and does not necessarily indicate the sequence in which the material will be presented.

#### 1.0 Introduction

- 1.1 Fundamentals of Clinical Pharmacology
- 1.2 Pharmacology basics
- 1.3 Routes by which drugs are administered
- 1.4 Key concepts of pharmacokinetics
- 1.5 Key concepts of pharmacodynamics
- 1.6 Key concepts of pharmacotherapeutics
- 1.7 Types of drug interactions and adverse reactions
- 1.8 Legal and ethical issues in the administration of medications
- 1.9 The Nursing Process in relation to drug administration
- 1.10 Drug reference

#### 2.0 Classification of Drugs

- 2.1 Autonomic nervous system drugs
- 2.2 Neurologic and neuromuscular drugs
- 2.3 Pain medications
- 2.4 Cardiovascular drugs
- 2.5 Hematologic drugs
- 2.6 Respiratory drugs
- 2.7 Gastrointestinal drugs
- 2.8 Anti-infective drugs
- 2.9 Anti-inflammatory, anti-allergy, and immunosuppressant drugs
- 2.10 Psychotropic drugs
- 2.11 Endocrine drugs
- 2.12 Drugs for fluids and electrolyte balance
- 2.13 Antineoplastic drugs
- 2.14 Other major drugs
- 2.15 Vaccines and treatment for biological weapons exposure
- 2.16 Treatment and antidotes for chemical weapons exposure

### 8. Instructional Goals

This course will introduce students to:

- 1.0 Basic pharmacological principles of pharmacokinetics, pharmacodynamics, and pharmacotherapeutics that are essential to the safe administration of medications;

# Northern Marianas College

## Course Guide

Course: NU 124 Pharmacology for Nurses and Clinical Math

- 2.0 Legal and ethical issues in the administration of medications;
- 3.0 Calculation of medication dosages for clinical practice;
- 4.0 Actions, dosage ranges, therapeutic uses, adverse effects, and drug interactions of the common classes of drugs;
- 5.0 Key or prototype drugs and how to make inferences about other drugs in the same drug classification;
- 6.0 The Nursing Process in relation to administration and evaluation of the therapeutic use of drugs; and
- 7.0 The use of drug references to secure information concerning unfamiliar drugs, and how to apply this information appropriately in a clinical setting.

### 9. Student Learning Outcomes

Upon successful completion of this course, students will be able to:

- 1.0 Explain the pharmacological principles of pharmacokinetics, pharmacodynamics, and pharmacotherapeutics that are essential to the safe administration of medications;
- 2.0 Identify the legal and ethical issues in the administration of medications;
- 3.0 Calculate medication dosages;
- 4.0 Demonstrate knowledge of the actions, dosage ranges, therapeutic uses, adverse effects, and drug interactions of the common classes of drugs;
- 5.0 Apply the knowledge of prototype drugs or drug groups to unfamiliar agents, and use this information to infer probable characteristics, actions, and adverse reactions of new agents in that group;
- 6.0 Utilize the Nursing Process in relation to administration and evaluation of the therapeutic use of drugs through case studies; and

# Northern Marianas College

## Course Guide

Course: NU 124 Pharmacology for Nurses and Clinical Math

- 7.0 Use drug references to secure information concerning unfamiliar drugs, and how to apply this information appropriately given a clinical situation.

### 10. Assessment Measures

Assessment of student learning may include, but not be limited to the following:

- 1.0 Demonstrate knowledge of course content by successfully completing quizzes, examinations, case studies, written assignments, and other computer related assignments.
- 2.0 Must be able to safely pass tests to calculate medication dosages and solutions with a 95% score or better.
- 3.0 Attendance: There is limited amount of absenteeism one may have and still successfully complete the course. When students miss a day, they will be required to do an assignment to make up for material taught that day.
- 4.0 Attain a "C" grade (75%) or better to successfully pass the course.