Prepared by the Department of: Health Sciences
Date of Departmental Approval: February 25, 2014
Date Approved by Curriculum and Programs: March 5, 2014 Effective: Fall 2014

1. **Course Number:** NUR100
   Course Title: Pharmacology Calculations

2. **Description:** This course examines the methods of dosage calculation required for safe administration of medications to children and adults. Interpretation of medical orders and systems of measurement are included. Introduces dimensional analysis to convert and calculate dosages of oral, parenteral, and intravenous medications.

3. **Student Learning Outcomes (instructional objectives: intellectual skills):**
   Upon successful completion of this course, students are able to do the following:
   - Solve basic mathematics problems
   - Use approximate metric-apothecary-household equivalents to solve dosage problems
   - Describe the meaning of symbols and abbreviations commonly used in medication orders
   - Use dimensional analysis as the method to calculate medication dosages
   - Convert metric system to apothecary and apothecary to metric system to calculate drug dosage
   - Calculate intravenous solution flow rate, medication administered in a given period of time, heparin infusions, and titrated medications
   - Prepare medications from powders or crystals
   - Calculate pediatric drug dosages using mg/kg and body surface area

4. **Credit:** One credit

5. **Satisfies General Education Requirement:** No

6. **Prerequisite:** MAT030 or MAT035 or satisfactory basic skills assessment score.

7. **Semesters Offered:** Fall, Spring, Summer

8. **Suggested General Guidelines for Evaluation:** Quizzes and a final examination

9. **General Topical Outline:**
   - Review of basic math skills (decimals, fractions, ratio and proportion)
   - Systems of drug measurement (apothecary, metric, household)
   - Abbreviations, symbols and terminology for medication orders
   - Dimensional analysis
   - Oral dosage calculations (tablets, liquids)
   - Parenteral dosage calculations
   - Reconstitution of powdered drugs
   - Calculations based on body weight and body surface area
   - Intravenous drug and fluid calculations (IV flow rate, medication administered in a period of time, titrated medication dosages, and heparin infusion calculations)