Course Syllabus: 2013

Professor L. Cichminski, RN, MSN                                      Professor M. Edelman, RN, MSN
Assistant Professor                                                   Professor
Course Coordinator

Credit – Hours: 1 cr., 1 hr.

Prerequisites:                                      Passing grade on the COMPASS math skills test
Pre or Corequisite                                     NUR 18
Recommended:                                         SOC 31; ENG 24

Course Description
Beginning level students acquire knowledge and develop proficiency in computing medication dosages. The course also introduces students to techniques for accurately computing medication dosages. How to compute the proper dosage for oral, injectable and intravenous medication to be administered to infants, children and adults are discussed. Content will be reinforced and tested in subsequent nursing courses. Topics include systems of measurement, equivalents and conversions, selected abbreviations, and computation of medication dosages. It is essential for students to engage in additional practice, especially in arithmetic skills, in order to develop proficiency. Provisions are made for additional practice in media and computer laboratories. Tutorial assistance will be available based on individual need and request.

Attendance
Complete participation in class is possible only when students are able to focus attention on the class, therefore entering class after it has begun is disrespectful to faculty and classmates. Talking out of turn or exhibiting other disruptive behaviors is not tolerated and students will be asked to leave the classroom or lab.

All electronic devices that generate sound must be turned off when any member of the academic community enters a classroom. Cellular devices are allowed to be on in the classroom only if the owner is using the caller ID, voice messages or a vibrating battery. NO TEXTING IS ALLOWED AT ANY TIME DURING CLASS. Members of the academic community must exit the classroom to make or receive calls.

A student is deemed excessively absent in any course when he or she has been absent 15% of the number of contact hours a class meets during a semester. When a student is excessively absent, a grade of “W” or “WU” will be assigned as described in the college catalogue.

Students with Disabilities
It is college policy to provide reasonable accommodations to students with disabilities. Any student with a documented disability who may need accommodations in this class is requested to speak directly to Access-Ability Services, D-205, (718) 368-5175, as early in the semester as possible. All discussions will remain confidential.
Evaluation
A grade of “B” is required as the passing grade for this course, NUR 17.
Final letter grades will be calculated according to college and departmental policy as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A+</td>
<td>97 – 100</td>
</tr>
<tr>
<td>A</td>
<td>93 – 96</td>
</tr>
<tr>
<td>A-</td>
<td>90 – 92</td>
</tr>
<tr>
<td>B+</td>
<td>87 – 89</td>
</tr>
<tr>
<td>B</td>
<td>83 – 86</td>
</tr>
<tr>
<td>B-</td>
<td>80 – 82</td>
</tr>
<tr>
<td>C+</td>
<td>78 – 79</td>
</tr>
<tr>
<td>C</td>
<td>75 – 77</td>
</tr>
<tr>
<td>C-</td>
<td>70 – 74</td>
</tr>
<tr>
<td>D+</td>
<td>66 – 69</td>
</tr>
<tr>
<td>D</td>
<td>60 – 65</td>
</tr>
<tr>
<td>F</td>
<td>60 or below</td>
</tr>
<tr>
<td>W</td>
<td>Withdrawn without penalty</td>
</tr>
<tr>
<td>WU</td>
<td>Unofficial withdrawal (counts as a failure)</td>
</tr>
<tr>
<td>INC</td>
<td>Term’s work is incomplete. Counts as an F grade</td>
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</tbody>
</table>

Nursing 17 – final numeric grades will be calculated as follows:

<table>
<thead>
<tr>
<th>Exam</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Exam 1</td>
<td>10%</td>
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<tr>
<td>Exam 2</td>
<td>25%</td>
</tr>
<tr>
<td>Exam 3</td>
<td>25%</td>
</tr>
<tr>
<td>Exam 4 (final exam)</td>
<td>40%</td>
</tr>
</tbody>
</table>

Students are expected to take all tests when scheduled. Exceptions to this rule will be for emergency situations and the faculty must know in advance. Students who do not take a test on the scheduled date are required to take a makeup test. All makeup tests may be given at the end of the semester. Students who fail to take the scheduled exams or makeup exams will receive a grade of zero for that test. All written assignments must comply with college standards for written work. Written assignments are to be turned in during the class period on the date that they are due. All assignments must be handed in by the end of the course to complete the requirements of the course. A late assignment will meet the requirements of the course but will not receive full credit. If written assignments are not submitted by the end of the course, the student will receive a grade of “INC” for the course. Students must submit all assignments prior to the beginning of the next semester in order to progress in the program.

A conference with the instructor is required at mid-semester, and at the end of the course, at which time the student's progress in the course will be discussed. In addition, students may initiate conferences with the instructor at other times.

Retention Criteria
Criteria for retention in the Nursing Program mandates that students:

1. Receive no grades below a “C” in any of the co-requisite courses.
2. Earn a minimum a “C” grade in every required Nursing course with a clinical component.
3. Students who fail a clinical nursing course achieving a grade of not less than “C-“ may apply to repeat the course one time only in the semester immediately following the failure. Repeating the course is subject to space availability. The minimum grade for Clinical courses that are repeated is a “B.”
4. Students must submit an “Intent to Return to Nursing Courses Form” outlining what they thought caused them to be unsuccessful and include a plan for success that demonstrates significant changes in how they will approach the course when repeated.

Course Objectives and Student Learning Outcomes
Upon completion of this course, the student will

1. Recognize and employ units of measurement in the household, apothecary and metric systems
2. Demonstrate the ability to calculate desired dosages from available strengths within and between different systems of measurement

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3. Demonstrate skill to explain abbreviations, symbols and numbers used in medication orders
4. Use critical thinking skills to accurately interpret medication order
5. Demonstrate the ability to calculate the flow rate of intravenous fluids and IVPB medications.

<table>
<thead>
<tr>
<th>Course Objectives</th>
<th>SLOs</th>
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<tbody>
<tr>
<td>• Identify units of measurement in the household, apothecary and metric systems</td>
<td>1</td>
</tr>
<tr>
<td>• Calculate desired dosages from available strengths within and between different systems of measurement</td>
<td>2</td>
</tr>
<tr>
<td>• Explain abbreviations, symbols and numbers used in medication orders</td>
<td>3</td>
</tr>
<tr>
<td>• Accurately interpret medication orders</td>
<td>4</td>
</tr>
<tr>
<td>• Calculate the flow rate of intravenous fluids and IVPB medications</td>
<td>5</td>
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<table>
<thead>
<tr>
<th>Teaching Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lecture/Discussion/Blackboard</td>
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<tr>
<td>• Problem solving</td>
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<tr>
<td>• Group Work</td>
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<tr>
<td>• Case Studies</td>
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<tr>
<td>• Multimedia</td>
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**Required Textbook**

**Topical Outline**
• Unit 1 – Units of Measurement; Interpretation of Medication Orders

• Unit 2 – Systems of Measurement for Dosage Calculations

• UNIT 3 – Common Medication Preparations

• UNIT 4 – Specialized Medication Problems
# Unit 1 – Units of Measurement; Interpretation of Medication Orders

## Learner Objectives

- Upon completion of Unit I, the student will
  - Describe course requirements
  - Identify basic arithmetic skills
  - Identify the parts of a medication order
  - Interpret drug labels
  - Solve calculation problems using dimensional analysis.

## Content/Lecture Discussion/Required Reading (textbook unless otherwise specified)

- Course Orientation and Overview (Syllabus)
- Review arithmetic skills for medication dosage calculations (Handouts, pp. 2 – 24)
- Abbreviations and medication administration process (pp. 28 – 41))
- Medication orders/medication administration record (MAR) (pp. 41 – 51)
- Review of drug labels (pp. 52 – 63)
  - Generic/trade names
  - Drug strengths
  - Expiration dates
  - Reconstitution
- Identify relationship between equivalents with a focus on the dimensional analysis approach in problem solving (pp. 76 – 79; 95 – 114)
### Unit 2 – Systems of Measurement for Dosage Calculations

**Learner Objectives**

- Upon completion of Unit II, the student will
  - Identify units of measurement in the apothecary, household and metric systems
  - Convert from one system of measurement to another
  - Identify the parts of a medication order
  - Interpret drug labels
  - Solve calculation problems using dimensional analysis.

**Content/Lecture Discussion/Required Reading (textbook unless otherwise specified)**

- Review of equivalents and symbols in apothecary, household and metric systems
  - Identify systems of weights and measurement including equivalents between systems (pp. 118 – 132)

- Problem solving and conversions between systems using dimensional analysis (pp. 138 – 149)

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### Unit 3 – Common Medication Preparations

**Learner Objectives**

- Upon completion of Unit III, the student will
  - Calculate dosages for oral medications in tablet, capsule, caplet and liquid form
  - Identify the various types and parts of syringes
  - Determine the amount of solution in different types of syringes
  - Interpret drug labels
  - Solve calculation problem related to preparation of medications for injection from drug supplied in liquid and powdered form.

**Content/Lecture Discussion/Required Reading (textbook unless otherwise specified)**

- Review of drug labels (pp. 52 – 63; 158; 162 – 171)

- Multi-step conversions with drug label interpretation using dimensional analysis (pp. 172 – 183)

- Review of common types of syringes: pre-packages, cartridges, tuberculin, and insulin syringes (pp. 204 – 229)

- Evaluate MD orders and preparing medications using syringes (pp. 268 – 288)

- Review parenteral medications supplied as liquids in vials and ampoules
  - Calculation of problems involving preparation of medications in liquid and powdered form
  - Evaluation of MD orders for parenteral medications (pp. 268 – 288)
### Unit 4 – Specialized Medication Problems

#### Learner Objectives

- Upon completion of Unit IV, the student will
  - Describe the basic concepts and standard equipment utilized in the delivery of intravenous (IV) and enteral solutions
  - Describe intravenous piggyback (IVPB) medication administration
  - Calculate the flow rate of intravenous solutions based on the amount of drug per minute/per hour
  - Calculate pediatric dosage based on body weight
  - Solve calculation problem related to preparation of medications for injection from drug supplied in liquid and powdered form.

#### Content/Lecture Discussion/Required Reading (textbook unless otherwise specified)

- Introduction to concepts and equipment utilized with enteral solutions
  Problem solving related to therapy; calculating flow rates using dimensional analysis (pp. 311 – 332)

- Introduction to concepts and equipment utilized with intravenous piggyback infusions
  Problem solving related to calculating flow rate for intravenous medications using dimensional analysis (pp. 340 – 364)

- Review drug orders related to MD orders in pediatrics
  Problem solving related to pediatric dosages (pp. 374 – 386)

Comprehensive Self-Tests