The faculty is committed to excellence in nursing education. The faculty believes that critical thinking skills is one of the integral parts of nursing education and practice. Critical thinking in nursing is purposeful outcome, and is a complex developmental process. It includes safely implementing a plan of care and evaluating the effectiveness of that action. The nursing faculty believe that safe and effective care, clinical competence and ethical practice are expected as part of the ideals of the nursing profession.

Dosage calculation is a critical skill in nursing which requires 100% accuracy to ensure client safety.* This skill must be mastered and that mastery requires continued vigilance in professional nursing practice. In order to promote life-long accuracy and safety in dosage calculation, nursing students at HACC are required to demonstrate mastery of mathematics and dosage calculation upon entry and throughout the duration of the nursing programs.

* Medication errors are estimated to account for at least 7,000 deaths in the United States alone every year. (Institute of Medicine, 2009) Over 770,000 patients are estimated to be injured because of medication errors every year. (Agency for Health Research and Quality, 2007) One 5-year study showed that the most common types of medication errors were a wrong dose, a wrong drug or a wrong route of administration. (Phillips J, Beam S, Brinker A, Holquist C, Honig P, Lee LY, Pamer C. Retrospective analysis of mortalities associated with medication errors. Am J Health Syst Pharm. Oct 2001. 58(19);1835-41).
DOUGLAS CLEMMENS 

PRACTICAL NURSING REQUIREMENTS

NURSING 100

Guidelines for Math Pre-Test
- All students with less than a 70% on the math calculation test are required to go to the Learning Center/Student Services for math remediation. There will be a pre-determined deadline for completion of the remediation. Failure to meet the deadline will result in an Academic Deficiency.
- Students who receive a 70% or higher must identify areas of need and remediate on their own, with a faculty member, and/or go to the Learning Center/Student Services.
- Students must take their math test, their Dosage Calculations text, and a referral slip each time they go to the Learning Center. The faculty referral slip must be signed at the Learning Center and returned to the Coordinator/Faculty advisor.
- Students must sign in and out at the Learning Center/Student Services.
- The math calculation test must remain in your clinical folder the entire semester.

During this semester dosage calculation will be presented in the classroom with additional practice taking place during assigned clinical post-conferences. At the end of Nursing 100 (date to be announced), all students will take a 10-point dosage calculation test. This test will include oral dosages, parenteral dosages, and IV drip rates. The test will be graded immediately, and incorrect problems will be circled. The student will have one opportunity to correct these problems within the one-hour time frame allotted for the entire test. Calculators are not permitted. If 100% is not achieved, the student will be strongly encouraged to seek further remediation in the Learning Center located on campus and/or make an appointment with a faculty member for additional instruction.
Nursing 102 Entrance Dosage Test

**Requirement:** All students entering Nursing 102 must verify competency in basic math/simple dosage calculation by taking a ten-point entrance test. The student will have one hour to complete the test. Calculators are NOT permitted. Competency requirement is 100%.

**Test Preparation:**
2. Complete and study chapters 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 15 (pp. 439-468)
   - Utilize the formula method described in Chap. 10
     - **Formula Method**
       \[
       \frac{D}{H} \times Q \times \frac{1}{C} = R
       \]
     - Utilize the formulas described in chapter 15
       - mL/h
       - \( V \) (volume) \( \times C \) (drop factor calibration) \( = R \) (rate of flow)

**Procedure:**
1. Test will be given early in Nursing 101
2. If the student does not achieve 100% on the Nursing 102 Entrance Dosage Test the student must take Nursing 115, a half-credit Dosage Calculation course, during the final weeks of Nursing 101.
3. If the student does not pass Nursing 115 (D or F grade), the student will not be eligible to take the second ten-point test, and will be unable to enter Nursing 102. The student will be able to and is encouraged to complete Nursing 101.
4. At the completion of the Nursing 115, the student will take a similar ten-point test (one hour allotted including time for corrections)
   a. The test will be graded immediately, and incorrect problems will be circled.
   b. The student will have one opportunity to correct these problems within the hour time frame allotted for the entire test.
5. If the student does not pass this second ten-point test, the student will be unable to enter Nursing 102, and must reapply to the nursing program.

**All nursing courses must be completed with a ‘C’ or better to graduate.**
HARRISBURG AREA COMMUNITY COLLEGE

AD NURSING PROGRAM

DOSAGE CALCULATION: FIRST SEMESTER ENTRANCE REQUIREMENTS

N140 Entrance Dosage Test

Requirement: All students entering the first semester of the nursing program must verify competency in basic math/simple dosage by taking a ten-point entrance dosage test. The student will have one hour to complete the test with one chance for corrections on the first attempt.

Calculators are permitted, but, ALL set-up of formulas, and math work (step-by-step calculations of long-division and multiplication) must be shown for the test to be graded. Competency requirement is 100%.

Test Preparation:
1. Purchase the required textbook: Calculate with Confidence. 6th Ed. by Deborah Gray Morris.
2. Complete and study chapters 1, 2, 3, 6, 7, 11, 17 (also pages 114-116 on weight conversion)
   ▶ Utilize the formula method described in Chap. 15
   
   Formula Method:
   
   \[ D \text{ (desire)} \times Q \text{ (Quantity)} = \text{dose} \]
   \[ H \text{ (have)} \]

3. Utilize the attached conversion chart when calculating the problems – this conversion chart will also be attached to the 10 point entrance dosage test.

If you are late for this test, you must discuss another test date with a faculty member. If you do not register for the test, or you do register and are absent for this test, you may possibly revoke your admission to the nursing program.

Procedure:
1. Register for the test by the deadline, according to the instructions in the admission packet.
2. The student will have one hour to complete the test and one chance for corrections within the one hour allotment.
3. If the student does not achieve 100% on the N140 entrance dosage test, he/she will receive a remediation packet.
   a. The remediation packet must be completed and submitted on the 1st class day of N140. The packet must be submitted to a nursing faculty member.
   b. If the remediation packet is not submitted by the 1st class day of N140, the student will receive an Academic Deficiency.
      1. The occurrence of two Academic Deficiencies will result in withdrawal from N140.
4. After submission of the remediation packet, the student will have two more chances, without a chance for corrections, to obtain 100% competency on the dosage test.
   a. The 2nd test will be given the second week of N140; the 3rd test will be given the 4th week of N140. (the schedule will be different in the part-time program)
   b. Calculators are permitted, but, ALL set-up of formulas, and math work (step-by-step calculations of long-division and multiplication) must be shown for the test to be graded.

If the student does not obtain 100% competency by the third dosage test, the student will be withdrawn from N140.
HARRISBURG AREA COMMUNITY COLLEGE
AD NURSING PROGRAM
DOSAGE CALCULATION REQUIREMENTS

Nursing 205 Entrance Dosage Test

**Requirement:** All students entering Nursing 205 must verify 100% competency in dosage calculation skills by taking a ten-point dosage test. The student will have one hour to complete the test including one chance for corrections on the first attempt.

Calculators are permitted, but, ALL set-ups of formulas and math work (step-by-step calculations of long-division and multiplication) must be shown for the test to be graded.

Competency requirement is 100%.

**Test Preparation:**
1. Refer to the required textbook: *Calculate with Confidence. 5th Ed. or 6th Ed.* by Deborah Gray Morris.
2. Complete and study chapters 13, 18, 19, 22, 23, 25.
   - Utilize the formula method described in Chap. 15
     
     **Formula Method:**
     
     \[
     \frac{D \text{ (desire)}}{H \text{ (have)}} \times Q \text{ (Quantity)} = \text{dose}
     \]

3. Topics included on the test are oral dosages, parenteral doses, safe dose, Heparin drips, and more advanced reconstitution problems, as well as all previously tested material.
4. Conversions must be memorized.
5. Consider supplemental texts such as:
   - Dosage Calculations Made Easy (Publisher LWW)
   - Davis’ Basic Math Review for Nurses (Publisher F.A. Davis)
6. Seek help from nursing faculty for any questions as soon as possible.

**Procedure:**
1. Register for the test by the deadline, according to instructions.
2. The student will have one hour to complete the test including one chance for corrections on the first attempt.
3. If the student does not achieve 100% on the N205 entrance dosage test, he/she will have 2 more chances, with a one hour allotment, **without** a chance for corrections, to obtain 100% competency.
   a. **Calculators are permitted, but, ALL set-ups of formulas, and math work (step-by-step calculations of long-division and multiplication) must be shown for the test to be graded.**
   b. Faculty will schedule the test(s).
4. If the student does not obtain 100% competency by the third test, this will be considered a clinical failure, and will be noted as a "not met" in the clinical evaluation tool. The student will be withdrawn from the nursing program.

N205 dosage policy 2014
Nursing 206 Entrance Dosage Test

Requirement: All students entering Nursing 206 must verify 100% competency in dosage calculation skills by taking a five-point dosage test. The student will have one hour to complete the test including one chance for corrections on the first attempt.

Calculators are permitted, but, ALL set-ups of formulas and math work (step-by-step calculations of long-division and multiplication) must be shown for the test to be graded.

Competency requirement is 100%.

Test Preparation:
1. Refer to the required textbook: Calculate with Confidence. 5th Ed. by Deborah Gray Morris.
2. Complete and study chapters 18, 19, 22, 23, 25 as well as the first, second and third semester’s dosage material.
   - Utilize the formula method described in Chap. 15

   **Formula Method:**
   \[
   \text{D (desire) x Q (Quantity) = dose}
   \]
   \[
   \text{H (have)}
   \]

3. Topics included on the test are IV drips (Lasix, Heparin, etc.), reconstitution, and pediatric dosage calculations, as well as all dosage material from previous semesters.
4. Conversions must be memorized.
5. Calculators are permitted, BUT, ALL set-ups of formulas and math work (step-by-step calculations of long-division and multiplication) must be shown for the test to be graded.
6. Consider supplemental texts such as:
   - Dosage Calculations Made Easy
   - Davis’ Basic Math Review for Nurses
7. Seek help from nursing faculty for any questions as soon as possible.

Procedure:
1. Register for the test by the deadline, according to instructions.
2. The student will have one hour to complete the test including one chance for corrections on the first attempt.
3. If the student does not achieve 100% on the N206 entrance dosage test, he/she will have 2 more chances, with a one hour allotment, **without** a chance for corrections, to obtain 100% competency.
   a. Calculators are permitted, but, ALL set-up of formulas, and math work (step-by-step calculations of long-division and multiplication) must be shown for the test to be graded.
   b. Faculty will schedule the test(s).
4. If the student does not obtain 100% competency by the third test, this will be considered a clinical failure, and will be noted as a “not met” in the clinical evaluation tool. The student will be withdrawn from the nursing program.
Nursing 150 Dosage Test

Requirement: All students in Nursing 150 must verify 100% competency in dosage calculation skills by taking a ten-point dosage test. The student will have one hour to complete the test including one chance for corrections on the first attempt.

Calculators are permitted, but, ALL set-ups of formulas and math work (step-by-step calculations of long-division and multiplication) must be shown for the test to be graded.

Competency requirement is 100%.

Test Preparation:
1. Refer to the required textbook: Calculate with Confidence. 5th Ed. or 6th Ed. by Deborah Gray Morris.
2. Complete and study chapters 1-3, 6-9, 11, 13, 15, 17-19, and 22(gtts/min and mL/hour)
   - Utilize the formula method described in Chap. 15
   
   Formula Method:
   \[
   D \text{ (desire)} \times Q \text{ (Quantity)} = \text{dose} \\
   H \text{ (have)}
   \]
3. Topics included on the test are oral dosages, IM/SC dosages, reconstitution, and IV (drops/min and mL/hour), as well as all previously tested material.
4. Conversions must be memorized.
5. Consider supplemental texts such as:
   - Dosage Calculations Made Easy (Publisher LWW)
   - Davis’ Basic Math Review for Nurses (Publisher F.A. Davis)
6. Seek help from nursing faculty for any questions as soon as possible.

Procedure:
1. Register for the test by the deadline, according to instructions.
2. The student will have one hour to complete the test including one chance for corrections on the first attempt.
3. If the student does not achieve 100% on the N150 dosage test, he/she will have 2 more chances, with a one hour allotment, **without** a chance for corrections, to obtain 100% competency.
   a. Calculators are permitted, but, ALL set-ups of formulas, and math work (step-by-step calculations of long-division and multiplication) must be shown for the test to be graded.
   b. Faculty will schedule the test(s) during N150.
4. If the student does not obtain 100% competency by mid-course (third test), this will be considered a clinical failure, and will be noted as a “not met” in the clinical evaluation tool. The student will be withdrawn from the nursing program.

N150 dosage policy 2014

HARRISBURG AREA COMMUNITY COLLEGE
**AD NURSING PROGRAM**

**DOSAGE CALCULATION REQUIREMENTS**

**Nursing 251 Dosage Test**

**Requirement:** All students in Nursing 251 must verify 100% competency in dosage calculation skills by taking a five-point dosage test. The student will have one hour to complete the test including one chance for corrections on the first attempt.

Calculators are permitted, but, ALL set-up of formulas, and math work (step-by-step calculations of long-division and multiplication) must be shown for the test to be graded.

Competency requirement is 100%.

**Test Preparation:**
1. Refer to the required textbook: Calculate with Confidence. 5th Ed. by Deborah Gray Morris.
2. Complete and study chapters 18, 19, 22, 23, 25 as well as the first, second and third semester’s dosage material.
   - Utilize the formula method described in Chap. 15
3. Topics included on the test are IV drips (Lasix, Heparin, etc.), reconstitution, and pediatric dosage calculations, as well as all dosage material from previous semesters.
4. Conversions must be memorized.
5. Calculators are permitted, BUT, ALL set-ups of formulas and math work (step-by-step calculations of long-division and multiplication) must be shown for the test to be graded.
6. Consider supplemental texts such as:
   - Dosage Calculations Made Easy
   - Davis’ Basic Math Review for Nurses
7. Seek help from nursing faculty for any questions as soon as possible.

**Procedure:**
1. Register for the test by the deadline, according to instructions.
2. The student will have one hour to complete the test including one chance for corrections on the first attempt.
3. If the student does not achieve 100% on the N251 dosage test, he/she will have 2 more chances, with a one hour allotment, without a chance for corrections, to obtain 100% competency.
   a. Calculators are permitted, but, ALL set-up of formulas, and math work (step-by-step calculations of long-division and multiplication) must be shown for the test to be graded.
   b. Faculty will schedule the test(s).
4. If the student does not obtain 100% competency by mid-course (third test), this will be considered a clinical failure, and will be noted as a “not met” in the clinical evaluation tool. The student will be withdrawn from the nursing program.

N251 dosage policy 2014