SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE, MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLES   MATHEMATICS FOR ADMINISTRATION OF MEDICATIONS

CODE NO   NUR 109   ONE
                             SEMESTER?

PROGRAMME   NURSING

DATE: SEPTEMBER, 199 3   SEPT/9 2
                             PREVIOUS OUTLINE DATED:

AUTHOR: MARGARET HURTUBISE

APPROVED: _____ *tnr rt*   **DATE** ^ /
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MATHEMATICS **FOR** ADMINISTRATION OF **MEDICATIONS**   **NUR 109**

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TOTAL CREDIT HOURS: 15 hours

PREREQUISITE(S): Grade 12 Mathematics (minimum general level)

I. **PHILOSOPHY/GOALS** t

   This course is designed to assist beginning nursing students to
   learn the mathematical skills required for the administration of
   medications. Emphasis is placed on mastery of skills,
   since this is essential for client safety in nursing practice.
   This course will include: abbreviations, metric system,
   conversions, 24 hour time, oral and parenteral medications, I.V.
   flow rates, solutions.

II. **STUDENT PERFORMANCE OBJECTIVES;**

   Upon successful completion of this course the student will:

   1. recognize the common abbreviations used in medication orders
      and interpret medication orders accurately.

   2. demonstrate the ability to write 24-hour time and dates in
      metric system accurately.

   3. demonstrate knowledge of the specified units of the S.I.
      system of measurement and be able to convert selected units
      to other systems of measurement.

   4. accurately calculate dosages of oral and parenteral
      medications.

   5. accurately calculate dosages of medications based on
      body weight.

   6. accurately calculate percent and ratio strengths of
      solutions.

   7. accurately calculate the rate of flow of intravenous
      infusions or length of time it will run.

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III. TOPICS TO BE COVERED;

1. Base and subunits of the S.I. system of measurement.

2. Conversion of selected units of S.I. system to other systems of measurement.

3. Times in 24-hour time and dates in metric system.

4. Abbreviations used in administration of medications.

5. Calculating dosages of oral and parenteral medications,

6. Calculating dosages using body weights.

7. Calculating percent or ratio strengths of solutions.

8. Calculating the rate of flow of intravenous infusions and the length of time the IV will run.

IV, OBJECTIVES	LEARNING ACTIVITIES
will recognize the common abbreviations used in medication orders and interpret medication orders accurately	Review abbreviations handout and Appendix K pp. 174-178 in text Complete exercises on abbreviations and medication orders in class.
will demonstrate knowledge of the specified units of the S.I. system of measurement and be able to convert selected units to other systems of measurement.	Complete exercises on systems of measurement. pp 40-51 in text Review if necessary.
3. will demonstrate the ability to write 24-hour time and dates in the metric system accurately.	Complete exercises on 24-hour time and dates in metric, pp 51-56 in text Complete Post-Test Questions 1^57-80 pp 140-141 **Test #1 - on Metric, Conversions, Abbreviations, Time and Dates.**

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IV OBJECTIVES	LEARNING ACTIVITIES
4. will accurately calculate dosages of oral and parenteral medications.	Read text pp 57-66, 72, 82-85, 91, 96
a) calculate oral solids	Complete exercises on oral and parenteral medications.
b) calculate oral liquids	Read text pp 71-72, 77-78, 90-91, 97
c) calculate parenteral medications	Questions #1-20 and #1-15
	Familiarize your-self with specified syringes and medicine containers.
	Review if necessary.
5. will accurately calculate dosages of medications based on body weight	Read and complete exercises on dosages of medications based on body weight, pp. 78-81, 99 in text
	Review if necessary
	Read and complete exercises on Insulin, Heparin & I.V. additives on pp 100-116.
	Complete Post Test Questions #81-155 {pp 141-148)

IV	OBJECTIVES	LEARNING ACTIVITIES
	will accurately calculate percent and ratio strengths of solutions.	Complete exercises on percent and ratio strength of solutions pp. 128-133 in text Complete Post Test Questions #176-185 (P 150) Review if necessary. **Test #2 - on Oral and Parenteral Meds, Ratio and Percent Strength Solutions**
7,	will accurately calculate the rate of flow of intravenous infusions or length of time it will run.	Read text and complete exercises on flow rates of intravenous solutions. pp. 117-127 in text Complete Post-test on: pp. 148-150 in text #156-175 Review if necessary **Test #3 - on all topics.**

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V. EVALUATION METHODS; (INCLUDES ASSIGNMENTS, ATTENDANCE REQUIREMENTS, ETC,)

1. In the first week of classes, students will be given a test in general math (multiplying, dividing, adding & subtracting of whole numbers, mixed numbers, fractions & decimals, percentages & ratios). If 80% is not obtained, students will have to seek extra help through the Learning Assistance Centre and their text on their own time. Students who are successful in general math have less difficulty with math for meds. In the L.A.C., there are computer programmes, group tutoring and peer tutoring sessions available.

2. A passing grade must be obtained in this course. A passing grade is at least an "A" (80-89%); a mark below 80% is an "R" (repeat).

3. You must receive at least 80% on Test #2 or Test #3. If your total mark equals 80/100 without passing one or the other, you will be required to write the supplemental test.

4. One supplemental exam will be offered in Section B of the course.

5. Calculators are not allowed in tests.

6. Failure to achieve a passing grade in this course will affect the student's progress in the program. If students do not pass NUR 109, they are unable to administer medications clinically and^ therefore, do not complete the objectives of the clinical course in Semester 2.

7. This course will NOT be repeated in Semester 2. You will not be able to continue on in the programme without this course.

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V. **EVALUATION METHODS CONTINUED** . . .

9' **Absence from Tests**;
If you are unable to attend class for a test, you must
contact the teacher's office (759-2554-extension of teacher
will be given to you at the beginning of the course)
BEFORE the test. If you fail to do 3Q> you will not be
allowed to write and will receive a mark of zero. You
must make individual arrangements with the teacher on the
first day back to school. If you fail to do so, you will not
be allowed to write and will receive a mark of zero.

A doctor's certificate may be requested by the teacher.

Those students who are given the opportunity to write
the test at a later date may have a change in format
and/or questions.

(TENTATIVE SCHEDULE - SUBJECT TO CHANGE)

TEST f	DATE	UNIT	MARKS	YOUR MARK
Test	Week of Aug.30/93	General Math	50	
Test #1	Week of Oct.4/93	Units of S.I., Conversion, Abbreviations, Times & Dates	10	
Test #2	Week of Nov.8/93	Oral St Parenteral Meds, Percent & Ratio Strength of Solutions!	40	
Test #3	Week of Dec.13/93	All Topi (includes I.V. rate;:)	50	
		TOTAL	**100**	

**You must receive 80 marks out of 100 to pass this course.
You must pass this course to be able to administer
medications in the clinical area,**

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VI. REQUIRED STUDENT RESOURCES;

Duff, Deborah, *h**, A Metric Guide for Health Professionals on Dosages and Solutions, 3rd edition, W. B. Saunders Company, Toronto, Ontario, 19 92

VII. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY BOOK SECTION:

Handouts and further resources are given to the students as the need arises.

VIII. SPECIAL NOTES:

Students with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the teacher.

Your teacher reserves the right to modify the course as he/she deems necessary to meet the needs of students.