

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

COURSE TITLE:	Sterile Prep II		
CODE NO. :	PTN 401	SEMESTER:	4
PROGRAM:	Pharmacy Technician		
AUTHOR:	Maria Coccimiglio B.S.Pharm. R.Ph.		
DATE:	Dec. 2012	PREVIOUS OUTLINE DATED:	N/A
APPROVED:	"Marilyn King"		Feb/13
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	CHAIR, HEALTH PROGRAMS		DATE
TOTAL CREDITS:	3		
PREREQUISITE(S):	PTN 301		
HOURS/WEEK:	6 hours week for 8 weeks		

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For additional information, please contact the Chair, Health Programs
School of Health Wellness and Continuing Education.
(705) 759-2554, Ext. 2603

I. COURSE DESCRIPTION:

The learner will continue to utilize the Standards of Practice in the preparation of sterile products. Other legalities, regulations and guidelines that rule the manufacture of sterile preparations will also be examined. The principles of sterile compounds will be practiced within the lab setting. An emphasis on accuracy and quality assurance will be maintained in this course.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

This course meets NAPRA competency categories:

1.1,1.2,1.3, 2.1, 3.1, 3.2, 3.3, 4.1, 5.1, 5.2 , 7.1, 7.2, 7.3, 8.1,8.2, 8.3, 9.1, 9.2, 9.3

Upon successful completion of this course, the student will demonstrate the ability to:

1. Dispense pharmaceutical products accurately, efficiently and in compliance with legislation and all established policies and procedures.

Potential Elements of the Performance:

- Understand commonly used medical and pharmacy terminology, directions, abbreviations, acronyms and symbols
- Identify the components required on a compounded sterile preparation label
- Understand the regulations and procedures that must be adhered to when preparing various products for parenteral administration
- Explain storage conditions commonly required for compounded sterile products
- Summarize legislative and other guidelines that govern the use of narcotics and controlled drugs in sterile compounding
- Select and use credible reference and online materials effectively, including Canadian Society of Hospital Pharmacists (CSHP) and USP Chapter 797 standards

2. Describe the equipments, apparel, and supplies required to manufacture sterile products.

Potential Elements of the Performance:

- Identify the different types of hoods used for sterile compounding
- Identify a variety of supplies used for sterile compounds
- Identify critical sites of commonly used sterile equipment and supplies
- Describe the various components of commonly used sterile equipment
- Describe the components and operations of the horizontal and vertical laminar airflow hood

3. Describe the policies and procedures in place for the manufacture of sterile products.

Potential Elements of the Performance:

- Describe anteroom and clean room setup and characteristics
 - Understand and demonstrate the procedures for aseptic hand washing, gloving and garbing
 - Recognize and respond appropriately to situations that compromise asepsis during garbing, gloving and hand washing
 - Explain and demonstrate the proper technique in cleaning laminar airflow hoods
 - Explain procedures required for proper setup of materials and supplies while maintaining a sterile environment
 - Understand the need for continuing training and testing of personnel's knowledge and technique
 - Describe the proper procedure for cleaning a cytotoxic drug contamination/spill
 - Demonstrate the correct procedure for safe handling and disposal of sharps/chemotherapeutics drug s
 - Describe the quality control procedure for batch testing and drug stability
4. Evaluate a coworker's preparation of pharmaceutical product through an independent double check.

Potential Elements of the Performance:

- Be able to detect errors when verifying calculations
 - Accurately interpret terminology and admixing directions used in written procedures and master formulas
 - Be able to independently review a coworkers work which involves being able to accurately interpret the prescription, determine the procedure required, calculate all ingredients required , as well as, rates, diluents, stability dates required, to ensure the correct patient receives the correct product and the correct time.
 - Understand what a high alert drug is and name the drugs and/or it classes considered high alert medications
5. Perform calculations accurately pertaining to IV admixtures and demonstrate problem solving skills.

Potential Elements of the Performance:

- Understand the principles of pharmacy dosage calculations
- Solve mathematical problems related to pharmaceutical calculations including dilutions, percentages,, ratio and proportion, dimensional analysis , IV flow rates, allegation and daily volumes
- Determine the best method of problem solving pharmaceutical calculations based on the sterile compounding procedure required

6. Explain the rationale and importance of maintaining aseptic technique and sterility during the manufacture of IV products, as well as, demonstrate how to maintain a sterile environment and prevent product contamination.

Potential Elements of the Performance:

- Define aseptic technique and key principles essential for ensuring a sterile product
 - Recognize potential contaminants in the sterile environment
 - Understand the rationale for using a hood during sterile product compounding
 - Demonstrate the technique for handling a needle and syringe, for withdrawing from an ampoule or vial, for reconstituting a powdered drug, for transferring a drug or IV solution from one container to another, using a vented or non-vented tubing set and reconstitution while working in various hoods
 - Explain the concepts of compatibility and sterility
7. Manufacture products accurately in a sterile environment, with focus on proper technique, accurate measurement of ingredients and following all policies and procedures.

Potential Elements of the Performance:

- Demonstrate correct technique in the preparation of large volume parenteral, small volume parenteral, ampule-based products in various types of hoods
 - Discuss selection of correctly sized packaging and labelling procedures for a syringe, minibag and large volume parenterals
 - Demonstrate correct technique in the preparation of powdered drug reconstitution while following all manufacturing guidelines
8. Demonstrate manufacturing techniques specifically designed for chemotherapy and total parenteral nutrition (TPN) as well as narcotic preparations, such as PCA pumps and epidural products, and Pediatric products.

III. TOPICS:

1. Review of Aseptic Technique Theory and lab
2. Total Parenteral Nutrition Solutions
3. Narcotic preparations
4. Pediatric Preparations
5. Cancer Chemotherapy
6. Applied Mathematics
7. Quality Assurance

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Sterile Compounding and Aseptic technique: Concepts, Training and Assessment for Pharmacy Technicians by author Lisa McCartney, Paradigm Publishing. ISBN 978-0-76384-083-9 Text and DVD

V. EVALUATION PROCESS/GRADING SYSTEM:

Labs (9 x 5 %)	45%
Assignment	5%
Test #1	20%
Test #2	15%
Practical Assessment	15%
Total	100%

1. The pass mark for the course is 60% to progress in the program
2. All policies and procedures as outlined in the current Student Success Guide related to submitting assignments, scholarly work/academic honesty, tests and examinations.
3. **No supplements** will be provided for tests.

The following semester grades will be assigned to students:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

NOTE: Mid Term grades are provided in theory classes and clinical/field placement experiences. Students are notified that the midterm grade is an interim grade and is subject to change.

Note: For such reasons as program certification or program articulation, certain courses require minimums of greater than 50% and/or have mandatory components to achieve a passing grade.

It is also important to note, that the minimum overall GPA required in order to graduate from a Sault College program remains 2.0.

VI. SPECIAL NOTES:

Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.