

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



**COURSE OUTLINE**

**COURSE TITLE:** Pharmaceutical Compounding II

**CODE NO. :** PTN 305 **SEMESTER:** 3

**PROGRAM:** Pharmacy Technician

**AUTHOR:** Julie Freestone B.Pharm R.Ph.

**DATE:** Jun. 2012 **PREVIOUS OUTLINE DATED:** N/A

**APPROVED:** "Marilyn King" Jun/12

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**CHAIR, HEALTH PROGRAMS**

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**DATE**

**TOTAL CREDITS:** 3

**PREREQUISITE(S):** PTN 203

**HOURS/WEEK:** 3

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*For additional information, please contact the Chair, Health Programs*  
*School of Health, Wellness and Continuing Education*  
*(705) 759-2554, Ext. 2689*

## I. COURSE DESCRIPTION:

Students will learn how to prepare specialised pharmaceutical compounds. The complexity of accurate compounding from preparation techniques, calculations, weights and measures will be covered. The legislation and methods of documentation for these products will be emphasized. The creation of a quality product while maintaining the equipment and lab appropriately will be an expectation in this class.

**This course is designed to enable students to attain competencies specified in the National Association of Pharmacy Regulatory Authorities (NAPRA) Professional Competencies for Canadian Pharmacy Technicians at Entry to Practice September 2007.** (Full document available at [www.napra.ca](http://www.napra.ca))

**This course is designed to enable students to attain the educational outcomes specified in the Canadian Pharmacy Technician Educators Association (CPTEA) Educational Outcomes for Pharmacy Technician Programs in Canada.(March 2007).** (Full document available at [www.cptea.ca](http://www.cptea.ca))

**This course is designed to enable students to meet and maintain the standards of practice expected within the pharmacy technician's role. The standards are specified in the National Association of Pharmacy Regulatory Authorities (NAPRA) Model Standards of Practice for Canadian Pharmacy Technicians. November 2011.** (Full document available at [www.napra.ca](http://www.napra.ca))

**Pharmacy Technicians apply their expertise in drug distribution while performing their daily activities.**

Pharmacy technicians, when distributing drugs,

22. c. compound in accordance with established formulae (NAPRA competency 4.1.3)

i. follow formulation instructions, calculate and confirm calculations and use proper techniques to prepare/ compound sterile, non-sterile, pre-packaged or reconstituted drug products and document calculations and procedures (4.1.3).

## II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. **safely and accurately compound non-sterile specialty dosage forms according to established formulations, guidelines, policies and procedures.**

Potential Elements of the Performance:

- Outline the advantages and disadvantages of the following "specialty" non-sterile dosage forms: troche, suppository, stick, lollipop, lozenge, capsule, powder.
- Demonstrate competency in the use and completion of master formulas.
- Use clean technique when compounding non-sterile preparations.
- Demonstrate efficient practices following lab procedures and protocols.
- Accurately perform, confirm and document calculations.
- Document the source, expiration dates and lot numbers of each ingredient used.

- Select packaging based on quantity, stability, safety, legislative requirements and patient's requirements.
  - Label according to legislative requirements and established protocols e.g. batch/lot expiry, auxiliary and safety labels.
2. **safely and accurately compound sterile specialty dosage forms according to established formulations, guidelines, policies and procedures.**  
Potential Elements of the Performance:
- As for 1.plus:
  - Outline the advantages and disadvantages of the following “specialty” sterile dosage forms: eye drop and ointment, ear drop, nasal spray and gel.
  - Define aseptic technique and key principles for ensuring a sterile product.
  - Discuss procedures for proper hand washing, gloving and gowning.
  - Use aseptic technique when compounding sterile preparations.
  - Determine the suitable environment/conditions, equipment and formulation procedures and techniques to prepare or compound sterile products.
3. **determine if final product suitable for release.**  
Potential Elements of the Performance:
- Assure the principles of compounding a product accurately, using proper technique have been applied.
  - Verify accuracy and appropriateness of ingredients and quantities including weights and volumes.
  - Assure appropriate packaging and labelling of the finished product.
  - Explain and identify the appropriate expiration date, storage and handling conditions for compounded products.
  - Practice” independent double check” competently, emphasizing effective communication with colleagues and detecting errors.
  - Develop an effective checklist for appropriate final release of a product.
4. **comply with legislative requirements and established policies and procedures.**  
Potential Elements of the Performance:
- Discuss the standards established by the Canadian Society of Hospital Pharmacists (CSHP) and the USP Chapter 797 and how they relate to the preparation of sterile products
  - Select, operate and maintain equipment, appropriate to the task, including equipment used to prepare sterile products.

### III. TOPICS:

1. Review of Pharmaceutical Compounding I
  - Compounding practices
  - Facilities, equipment and supplies
  - Quality assurance and record keeping
  - Legislation
  - Health and Safety
  - Math review

2. Capsules, tablets and powders
  - Types and definitions
  - Composition and ingredients
  - Preparation and compounding techniques
  - Quality control
  - Packaging, labelling and stability
  
3. Lozenges, troches, suppositories, lip balms and lollipops
  - Types and definitions
  - Composition and ingredients
  - Preparation and compounding techniques
  - Quality control
  - Packaging, labelling and stability
  
4. Ophthalmic, otic, nasal and inhalation preparations
  - Types and definitions
  - Composition and ingredients
  - Preparation and compounding techniques
  - Quality control
  - Packaging, labelling and stability
  
5. Veterinary compounding
  - Routes of administration
  - Owner considerations
  - Medication flavouring
  - Dosage forms
  
6. Specialty areas
  - Dentistry
  - Hospice
  - Wound care
  - Pain management

#### **IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

Compounding – The Pharmacy Technician Series by Mike Johnston  
ISBN-10;013147609 Publisher : Prentice Hall

Introduction to Pharmaceutical Dosage Forms for Pharmacy Technicians,2008-2009-  
Marie Atlas and Audrey Faris. Pharmacy Tech. Consultants Ltd. ISBN:978-0-  
98104411-2-4

**V. EVALUATION PROCESS/GRADING SYSTEM:**

Assignment	10%
Labs (3 at 10%)	30%
Quizzes (2 at 15%)	30%
Final Exam	30%
<b>Total</b>	<b>100%</b>

Compounding Math Test                      pass/fail

1. Success in passing this course requires an overall course grade of 60% after completion of ALL components of the course including a pass mark for the Compounding Math Test.
2. The pass mark for the course is 60%. The total grade is composed of marks accumulated as indicated above.
3. All policies and procedures as outlined in the current Student Success Guide related to submitting assignments, scholarly work/academic honesty, tests and examinations.
4. **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%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
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.

A minimum of a "C" grade is required to be successful in all PTN coded courses.

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.