PHA 5104  Dosage Forms & Contemporary Pharmacy Practice

2 Semester Credit Hours

Teaching Assistants

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Course Purpose:
Upon completion of this course the student will understand sterile products, and their preparation. The student will also understand non-sterile products especially those prepared extemporaneously. The student will also be capable of performing pharmaceutical calculations with ease.

Course Faculty and Office Hours

Course Coordinator:
Anthony Palmieri III, R.Ph., Ph.D.

Email: palmieri@cop.ufl.edu
Office P 4-31
Phone: (352) 273-7868

Office Hours
By appointment

Place and Time of Class Sessions
Classes meet Tuesday and Thursday 9:35-10:25 in HPNP 1404

How This Course Relates to the Learning Outcomes You Will Achieve in the Pharm.D. Program:

Upon completion of this course, the student will:

1. Apply relevant standards of practice (including USP guidelines, FDA regulations, and ethical guidelines) to prepare safe and effective sterile dosage forms.
2. Understand how to prepare safe and effective sterile dosage forms. Also, explain how it is both a science and an art.
3. Calculate the amount of ingredients needed to prepare a sterile product.
4. Discuss proper aseptic techniques that are used to prepare sterile products.
5. Identify physical and chemical incompatibilities among active and inactive components of sterile formulations. Also, recommend how to avoid unwanted interactions and incompatibilities.
6. Discuss the sterilization methods that are appropriate for a drug and product.
7. Calculate the rate of drug administration based on a prescription order.
8. Describe how to design and maintain an adequate operational facility for compounding sterile products.
9. Determine a patient’s fluid, electrolyte, and nutritional needs. Then, calculate the composition of the parenteral nutrition sources that will meet a patient’s needs.
10. Describe appropriate quality control procedures for sterile products.
11. Discuss how to design and maintain an adequate operational facility for compounding sterile products.
12. Identify the most appropriate resources for information about accurate and standardized preparation of extemporaneous products.
13. Identify physical and chemical incompatibilities among active and inactive pharmaceutical ingredients of a formulation. Also, recommend how to avoid incompatibilities and unwanted interactions.
14. Explain how to design and maintain an adequate operational facility for compounding extemporaneous products.
15. Apply relevant standards of practice (including USP guidelines, FDA regulations, and ethical guidelines) to prepare extemporaneous pharmaceutical products.
16. Contrast compounding with pharmaceutical manufacturing and explain why manufacturers do not make products that are requested for compounding.
17. Explain why a product should not be compounded if it is already available for manufacturing.
18. Perform the following calculations:
   a. Reducing and enlarging formulas
   b. Allegations
   c. Percentage strength
   d. Isotonicity
   e. Amount of ingredient needed to prepare a sterile or extemporaneous product.
   f. Henderson-Hasselbach equation
   g. Metric conversions
   h. Parenteral nutrition needs and amount of ingredients

Course Objectives
Upon completion of this course, the student will:

1. Be able to do pharmaceutical calculations with ease.
2. Understand the preparation of sterile dosage forms and how to evaluate the quality of them.
3. Understand dose forms compounded extemporaneously as well as commercially available dose forms.
4. Evaluate the potency and stability of dosage forms.

**Pre-Requisite Knowledge and Skills**

Pre-requisite knowledge and skills are those required classes prior to this one.

**Course Structure**

Live and video tape lectures. Unless Dr. Palmieri is out of town the lectures will be live in GNV.

**Textbooks**

Recommended Optional Text Book:

   Author: Robert Shrewsbury

   Author: Howard C. Ansel

Older textbooks are also acceptable.

**Student Evaluation & Grading**

The grade is determined as follows:

- Exam 1: 33%
- Exam 2: 33%
- Exam 3: 34%

No Final Exam

Grading Scale is the Sakai default

**Sakai Default**

**Class Attendance Policy**

Attendance is optional.
After the grades are posted if you have a question, please contact the TA within one week.

**Make-up Quiz/Exam Policy**
Make up exams are allowed with a valid reason. If possible please contact Dr. Palmieri before the exam.

**Policy on Old Quizzes and Assignments**
You may not keep the exams but old exams from previous years have been available. I will post the exam and answers after the exam.

**General College of Pharmacy Course Policies**
The College of Pharmacy has a website that lists course policies that are common to all courses. This website covers the following:

1. University Grading Policies
2. Academic Integrity Policy
3. How to request learning accommodations
4. Faculty and course evaluations
5. Student expectations in class
6. Discussion board policy
7. Email communications
8. Religious holidays
9. Counseling & student health
10. How to access services for student success

Please see the following URL for this information:

**Complaints**

Should you have any complaints with your experience in this course please visit:

http://www.distancelearning.ufl.edu/student-complaints to submit a complaint.

**Appendix A: Directions for Contacting Faculty & Course Faculty List**

**Directions for Contacting Course Faculty**
If you have a content question contact Dr. Palmieri. Grade questions should be first addressed to the TA. We prefer e-mail and will respond within 24 hours.

**Appendix B. Schedule of Course Activities/Topics**
All of the lectures will be available through the E-learning system. Additional assignments may be made through the E-learning system.

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<th>Date</th>
<th>Lecture #</th>
<th>Topic</th>
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<td>1</td>
<td>Introduction</td>
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<tr>
<td>8/27</td>
<td>2</td>
<td>What is compounding</td>
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<tr>
<td>8/29</td>
<td>3</td>
<td>Compounding records</td>
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<td>Calculations</td>
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<tr>
<td>9/5</td>
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<td>Sterile formulations</td>
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<tr>
<td>9/10</td>
<td>5</td>
<td>IV administration</td>
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<td>EXAM # 1</td>
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<td>Introduction to Non-sterile compounding</td>
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