

## Pharmaceutical Formulation: Principles and Dosage Forms

4 credits

3 hours lecture/week (MWF 10:30 AM -11:20 AM)

One 2-hour lab/week (T)

One 1-hour conference/week (M 11:30 AM – 12:20 PM)

### Instructors

Course Coordinator:  
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### Course Description

This course provides the knowledge base to be used in subsequent pharmacy courses and professional practice. The student will study the theory and problems involved in incorporating chemicals into stable dosage forms suitable for human medication as well as the routes of drug administration. The basics of the appropriate handling and use of various dosage forms will also be presented. The laboratory will expose the student to common dosage forms, will illustrate important physical principles, and will develop basic manipulative skills.

### Examinations and Grading

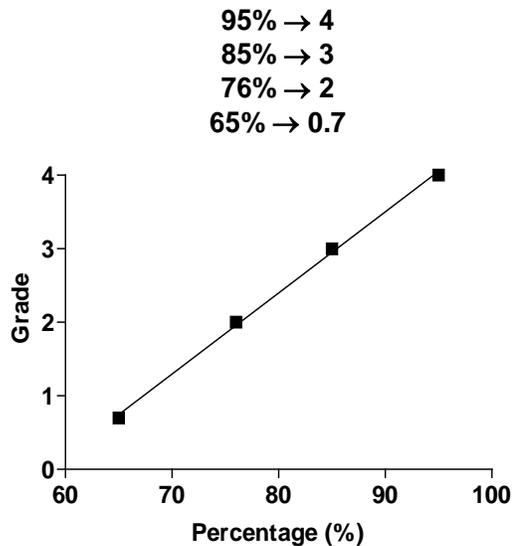
Three written examinations will be given during the quarter. Two 1-hour midterm exams (50 pts.) covering lecture and laboratory material will be given in class. A 2-hour cumulative final exam over lecture and laboratory material (100 pts.) will be given during the scheduled final exam period.

**\*Make-up of missed exams will be allowed only under exceptional circumstances.**

The laboratory score (100 pts.) will be based on the quality of preparations and graded questions from each laboratory.

Thus, the total course score will be obtained as follows:

Midterm 1	50 pts.
Midterm 2	50 pts.
Final	100 pts.
Lab	100 pts.
Total	300 pts.



$$\text{Grade} = 0.1102 \times \text{percentage} - 6.418$$

Final grades will be calculated using the above equation. The passing grade is 0.7.

### Objectives

This course will enable the successful student to:

1. Accurately and rapidly weigh quantities of material on a prescription balance.
2. Make visual approximations of weight of a solid or the volume of a liquid.
3. Choose an appropriate dosage form on the basis of the properties of the raw drug.
4. Choose an appropriate dosage form for a given route of drug administration.
5. Accurately and rapidly weigh, measure, combine, and formulate raw materials into acceptable dosage forms.
6. Identify common dosage forms by appearance and physical properties.

7. Understand and explain the importance of solubility principles, acid-base theory, colligative properties, and interfacial phenomena in the preparation and stability of dosage forms.
8. Explain the purpose of ingredients found in various prescription and non-prescription products.
9. Explain the proper use, as well as the practical, economic, and therapeutic advantages and disadvantages of common dosage forms.
10. Synthesize dosage form theory and information into impromptu patient advice on use and storage of a dispensed medication.
11. Describe methods for stabilizing and preserving medications.
12. Detect drug or vehicle incompatibilities in prescriptions.
13. Understand the basic principle of various routes of drug administration.

### Textbooks

**Required:** Pharmaceutical Calculations. Howard C. Ansel. 15<sup>th</sup> edition,

**Recommended (in reverse in the health science library):**

Pharmaceutical Dosage Forms and Drug Delivery Systems, Howard C. Ansel, Nicholas G. Popovich and Lloyd V. Allen, Jr. 9<sup>th</sup> Edition, 2009.

**For extra help and information (available in the health science library):**

A Practical Guide to Contemporary Pharmacy Practice, Thompson J.E., 1998.

Physical Pharmacy, A. Martin, 4<sup>th</sup> Edition, 1993.

USP31-NF26, 2008.

Remington's Pharmaceutical Sciences, 20<sup>th</sup> Edition, 2000.

Physicochemical Principles of Pharmacy, A.T. Florence and D. Attwood, 2<sup>nd</sup> Edition, 1988.

Applied Pharmaceutics in Contemporary compounding, R. Shrewsbury, Morton Publishing, 2001.