

PHR 142P
Fall 2009
Physical and Chemical Principles of Drugs
Laboratory Syllabus

Instructor: Dr. Maria Croyle

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Teaching Assistants

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Class Time and Location

M	2-3 PM	PHR 2.110	Pre-laboratory lecture (all)	
	3-6 PM	PHR 2.110	Laboratory Section #1	unique number: 61405
T	3:30-6:30 PM	PHR 2.110	Laboratory Section #2	unique number: 61410

Lab Format

All students enrolled in PHR 142P are **required** to attend the pre-lab lecture session held Mondays from 2-3 PM. At the beginning of this lecture period, a **15 minute quiz** on the material covered from the previous weeks laboratory exercise will be given. Thus, it is **very important** that you arrive **on time** for the pre-laboratory lecture. If a student arrives after the quiz has been handed out, they will not be allowed to take the quiz and receive a zero for that day. The remaining lecture time will introduce the students to the laboratory activity for the week and provide direction for completing that week's assignment.

Course Prerequisites

Prior to enrolling in the course, students are to have successfully completed the prerequisite mathematics and chemistry courses including algebra, calculus, and general chemistry and will be held responsible for understanding the concepts presented in these previous courses. In addition, students must also be enrolled in PHR 342C Physical and Chemical Principles of Drugs.

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Required Texts

As for the lecture segment of the course, **there are no required textbooks for the laboratory section of the course.** However, if a student would like additional information relative to the subjects covered in lab, they are referred to the following texts:

**Sinko, P.J. Martin's Physical Pharmacy, 5th edition, Lippincott Williams & Wilkins, 2006 ISBN 0-7817-5027-X

Florence, A. T. Physicochemical Principles of Pharmacy, 4th edition, Pharmaceutical Press, 2006 ISBN: 0-85-369608-X

Whitten, K. W., Davis, R. E., Peck, L. and Stanley, G. C. Chemistry. 9th edition, Brooks Cole, 2009 ISBN 978-0-49-539163-0

Atkins, P. and de Paula, J. Elements of Physical Chemistry 5th edition, Oxford University Press, 2009 ISBN 978-0-19-922672-6

Hammes, G.G. Physical Chemistry for the Biological Sciences, John Wiley & Sons, 2007 ISBN 978-0-470-12202-0

Note: The textbooks listed here are in either the Life Science or Chemistry libraries on campus. Any general chemistry book or physical chemistry book will provide suitable information on subjects covered in this course.

Required Materials

The content of this course will require students to assess data and perform calculations. Thus, all students **must** have a **Texas Instruments TI-30XA calculator**. This calculator must be brought to all pre-laboratory lecture sessions in order to complete the quiz problems and to the laboratory in order to complete the assigned activities. Calculators will not be provided.

Computer Use

All students are required to have access to computers. Although you are not required to use a computer during this course, it may be useful for some of the laboratory assignments.

To get the most out of this course

- a. Attendance of the laboratory sessions is expected.
- b. Work/solve the problems associated with the lab **prior** to going to your laboratory session.
- c. Review lecture notes, quizzes and lab assignments and come armed with questions about the lecture and lab material. Your teaching assistants are here to help you understand the material.

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Course Grading

There are no midterm examinations associated with this course! Instead, three "expanded quizzes" will be given during the pre-lab sessions. These will fall prior to a midterm exam in PHR 342C (see schedule below). Each of the "expanded quizzes" will be of equal value and will count as 25% of the course grade. **There will not be a final exam associated with the lab session.**

Weekly laboratory assignments and quizzes will be given and graded. Quizzes will count as 15% of the course grade. Laboratory assignments will also contribute to 10% of the final grade. Grades will be based on the calculated semester average according to the following formula:

$$\text{Semester average} = (\text{Exam I})(0.25) + (\text{Exam II})(0.25) + (\text{Exam III})(0.25) + (\text{Quizzes})(0.15) + (\text{Assignments})(0.1)$$

Grade assignment will be as follows:

"A" Range:	A+ if semester average is 100-97%	A = 96-93%	A- = 92-90%
"B" Range:	B+ if semester average is 89-87%	B = 86-83%	B- = 82-80%
"C" Range:	C+ if semester average is 79-77%	C = 76-73%	C- = 72-70%
"D" Range:	D+ if semester average is 69-67%	D = 66-65%	
"F" if semester average is 64% and below			

Dates for Expanded Quizzes

Expanded quizzes for PHR 142P will be given on the following dates at the following times:

October 5, 2009	Quiz I	2:00-3:00 PM	PHR 2.110*****	BUR 130(T)
November 9, 2009	Quiz II	2:00-3:00 PM	PHR 2.110*****	BUR 130(T)
November 30, 2009	Quiz III	2:00-3:00 PM	PHR 2.110*****	BUR 130(T)

*******NOTE** - Those enrolled in the Monday lab session will report promptly at 2 PM for the quiz to PHR 2.110. Those enrolled in the Tuesday lab session will report promptly at 2 PM to BUR (Burdine Hall) room 130 for the quiz.

Laboratory sessions following the Expanded Quiz sessions will be used to review material for upcoming PHR 342C midterm exams.

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PHR 142P Laboratory Schedule

Description

The laboratory section of this course is designed to provide the pharmacy student with a forum in which they can apply theoretical principles described in the lecture portion of the course to situations they will encounter as a pharmacist and/or pharmaceutical scientist. Upon completion of the laboratory assignments, students will develop superior problem solving skills and understand the role that physical pharmacy plays in the daily practice of pharmacy.

Week	Laboratory
8/31	Concentration Units, Dilution, and Beer's Law
9/7	No lab – Happy Labor Day!
9/14	Working with Logs and Exponentials (Quiz #1)
9/21	Colligative Properties Workshop:Part A (Quiz #2)
9/28	Colligative Properties Workshop:Part B (Quiz #3)
10/5	Expanded Quiz #1 – Review for 342C midterm with TAs
10/12	Drug Complexation and Binding
10/19	Solubility Experiment (Quiz #4)
10/26	The Common Ion Effect (Quiz #5)
11/2	No Lab – review Labs with TAs for Expanded Quiz
11/9	Expanded Quiz #2 – Review for 342C midterm with TAs
11/16	Acid/Base Workshop
11/23	Effect of pH on Solubility and Partitioning of Drugs (Quiz #6)
11/30	Expanded Quiz #3 – Review for 342C midterm with TAs