Introduction to Pharmaceutics (30:721:301)

Course and Lecture Syllabus (1st Professional Year, Fall, 2015)

Course Coordinator: Professor Arash Hatefi, Ph.D.

Course Lecturers: Professor John L. Colaizzi, Ph.D. (john.colaizzi@pharmacy.rutgers.edu)
Professor Guofeng You, Ph.D. (gyou@rci.rutgers.edu)
Professor Bozena Michniak-Kohn, Ph.D. (michniak@dls.rutgers.edu)
Professor Arash Hatefi, Ph.D. (ahatefi@pharmacy.rutgers.edu)
Dr. Ronak Salva, PhD. (Ronak.Savla@catalent.com)

Lecture Schedule: **When:** Mondays and Thursdays 10:20-11:40 am, **Where:** ARC 103

#	Date	Topic	Lecturer	Textbook Chapter (PC = Pharmacy Calculations; M=Martin)
1	Thu, Sep 3	No class		
2	Mon, Sep 7	Labor Day (No Class)		
3	Thu, Sep 10	Course and Syllabus Overview (First Day of Classes for This Course)	Dr. Hatefi	Notes
4	Mon, Sep 14	Drug Discovery and Development	Dr. Hatefi	Notes
5	Thu Sep 17	Pharmaceutical Calculations I	Dr. Colaizzi	PC 1, 2, 3, 5, 9, appendix A
6	Mon Sep 21	Calculation Quiz I	Dr. Hatefi/TA	
7	Thu Sep 24	Biopharmaceutics	Dr. You	Notes
8	Mon Sep 28	Biopharmaceutics	Dr. You	Notes
9	Thu Oct 1	Pharmaceutical Calculations II	Dr. Colaizzi	PC 6, 7, 13, 16, 17
10	Mon Oct 5	Diffusion and Dissolution	Dr. Michniak-Kohn	M12, M13
11	Thu Oct 8	Calculation Quiz II	Dr. Hatefi /TA	
12	Mon Oct 12	**EXAMINATION 1**	Dr. Hatefi /TA	
13	Thu Oct 15	Isotonic & Buffer Solutions	Dr. Colaizzi	M9; PC11
14	Mon Oct 19	Interfacial Phenomena /Colloids	Dr. Salva	M17
15	Thu Oct 22	Liquid Dosage Forms: Emulsions/Suspensions	Dr. Hatefi	Notes
16	Mon Oct 26	AAPS Meeting (No Class)		
17	Thu Oct 29	AAPS Meeting (No Class)		
18	Mon Nov 2	Drug Stability	Dr. You	M15
19	Thu Nov 5	Liquid Dosage Forms: Emulsions/Suspensions	Dr. Hatefi	Notes
20	Mon Nov 9	**EXAMINATION 2**	Dr. Hatefi /TA	
21	Thu Nov 12	Radioactive Decay and Linear Regression Calculations	Dr. Michniak-Kohn	M1, PC18, 21
22	Mon Nov 16	Rheology	Dr. Michniak-Kohn	M20
23	Thu Nov 19	Pharmaceutical Calculations III	Dr. Colaizzi	PC 8, 10, 12, 15, 20
24	Mon Nov 23	Calculation Quiz III	Dr. Hatefi /TA	
25	Thu Nov 26	Thanksgiving (No class)		
26	Mon Nov 30	**COMPREHENSIVE CALCULATION EXAM**	Dr. Hatefi/TA	
27	Thu Dec 3	**EXAM INATION 3**	Dr. Hatefi /TA	

Lab Schedule: **When:** Wednesdays 8:30am-7:30pm **Where:** WLH 215

Date	**Topic**
16-Sep-2015	Oral Solution
23-Sep-2015	Oral Suspension
30-Sep-2015	Topical Lotion
7-Oct-2015	Topical Gel
14-Oct-2015	Methocel Oral Gel
21-Oct-2015	Oral Suspension using Methocel Gel
28-Oct-2015	No Lab
4-Nov-2015	Mineral Oil Emulsion
11-Nov-2015	Cold Cream
18-Nov-2015	Benzoyl Peroxide Ointment and Hydrocortisone Cream
25-Nov-2015*	Zinc Oxide Paste
2-Dec-2015	Transdermal Gel

*Due to change of class schedule related to the Thanksgiving Holiday, the 8:40am lab will be at 6:10pm (Valid only for Nov 25)

Teaching Assistants:

1. Haoxun Wang (Head TA), (hw264@rutgers.edu)
2. In Heon Lee (inheon@scarletmail.rutgers.edu)
3. Pei Chin Tsai (tsai.p1027@gmail.com)
4. Manting Chiang (mantingc1979@gmail.com)
5. Jinghui Zhang (jenniferzhang2015@163.com)
6. YuQing Yang Ann (anney2011@gmail.com)
7. Obeid Mohammadali Pourmalekshah (o_malekshah@yahoo.com)

Course Description:

Introduction to Pharmaceutics will introduce the student to the physicochemical characterization of drugs and drug formulations including fundamental principles and processes of pharmacy such as equilibria and kinetics, and will provide students with a thorough understanding and ability to perform the basic calculations applicable to contemporary pharmacy practice.

Laboratory:

There is a required laboratory component to Introduction to Pharmaceutics. The laboratory addresses the basics of pharmaceutical compounding. Each student must attend laboratory every week according to their section (1 to 6, etc.).

Section	**Time**
1	8:40 am-10:00 am
2	10:10 am-11:30 am
3	11:40 am-1:00 pm
4	3:10 pm- 4:30pm
5	4:40 pm-6:00 pm
6	6:10 pm-7:30 pm (only if necessary; will be determined by Head TA)

Please note the following important points:

1- Unexcused absences cannot be made up. That is, students who miss a lab session will receive a zero for that lab.
2- Coming late to the lab (more than 10 minutes) will result in deduction of 0.5 grade points from pre-lab quiz.
3- There will be 0.3 points deduction each time for not wearing lab coat, maintaining clean station or sink area.
4- Dress professionally, no open toe shoes, jeans, T-shirts, shorts, or sneakers.

Examinations and Grading:
Overall, there are four exams and three quizzes. Please note that there will be a comprehensive exam on pharmaceutical calculations (November 30th). Students who score lower than 80% on the comprehensive calculations exam will be required to take a make-up exam at a later date. The date for make-up exam will be determined by the course coordinator. Students who need to take the make-up exam are required to attend the exam, otherwise will receive zero points which could in turn inhibit them from progressing to PY2. We highly recommend that students take Pharmacy Calculation Exams serious due to their high importance.

GRADING SCHEME:

Percentile	Letter Grade
90-100	A
85-89.9	B+
80-84.9	B
75-79.9	C+
70-74.9	C
60- 69.9	D
less than 60	F

1. Examination dates are scheduled as follows:

Exam 1	October 12
Exam 2	November 9
Comprehensive Calculations Exam	November 30
Exam 3	December 3

2. *Students are required to take the examinations at the scheduled time***.** It is not possible to arrange special make-up exams except in the rarest of cases. Any make-up exam due to illness or other emergency requires written documentation (e.g., medical excuse from a doctor) and the exam will be administered at the discretion of the course coordinator.

3. The examinations will be based on assigned readings, assigned problems, and class notes.

4. Students will not be allowed to leave the exam room until they have handed in their exam, with no exceptions. All book bags, backpacks, and other materials must be left at the front or side of the room during the exam.

5. During the exams, you will be provided with a hand held calculator capable of performing logarithmic calculations as well as LINEAR REGRESSION. Use of Palm-or WindowsCE based systems or other “beamable” devices are strictly prohibited. All phones must be turned off.

6. Grades will be determined as follows:

Component	**Percent of Final Grade**
Exam 1	20%
Exam 2	20%
Exam 3	20%
Calculation quizzes and exam	20%
Laboratory	20%

Required Textbooks:

- Pharmaceutical Calculations, Ansel, H.C. and Stoklosa M.J., 14th Edition, 2013, LWW.
- Martin's Physical Pharmacy and Pharmaceutical Sciences, Sinko, P.J., 5th or 6th Edition, 2006 or 2010 , LWW.

Recommended Textbooks:

-A Practical Guide to Contemporary Pharmacy Practice, Thompson, J. E., 2nd Edition, 2004, LWW.
-Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems, 8th Edition, L.V. Allen, N.G. Popovich, & H.C. Ansel, 2005, LWW

Required Textbook for the Laboratory section:

-The Art, Science and Technology of Pharmaceutical Compounding, Allen, L.V. 2nd. Edition, 2002, American Pharmaceutical Association.

Academic Integrity:

The University has a firm policy on academic integrity, which is summarized in the University Catalog. More complete information is contained in the University Code of Student Conduct and the University Policy on Academic Integrity, which are both available in the Dean's Office. All members of the university community are responsible for knowing what the standards are and adhering to them. Students should also bring any violations of which they are aware to the attention of the instructors. Such violations include cheating, fabrication, facilitating academic dishonesty, plagiarism, denying others access to information or resources, collaboration on projects or quizzes designed for individual completion. Violation of academic integrity is a separable offense under the University Code of Student Conduct. Grades in this course are primarily determined by written exams primarily, therefore most violations of academic integrity in this course will be either level three or four violations. The recommended sanction for level three violations is suspension from the University for one or more terms with a notation of "academic disciplinary suspension" placed on the student's transcript for the period of suspension and a failing grade in the course. The recommended sanction for level four violations is expulsion from the University and a permanent notation on the student's transcript. Any violations of academic integrity relating to this course will be handled by the student disciplinary process outlined in the University Code of Student Conduct.

- **Note: Cell phones** are to be **turned off** for the duration of lecture and exams. Students are encouraged to behave professionally during the class time. These include attending the class on time and avoiding sleeping during the lectures.

Student Absence Reporting

Students are expected to attend all classes; if you expect to miss one or two classes, you may use the University absence reporting website https://sims.rutgers.edu/ssra/ to indicate the date and reason for your absence. An email is automatically sent to me. ***Please note that this absence reporting system is not for exams and labs.***