

PHAR 7402: Pharmaceutics

Spring Semester 2020

Course Description

A study of the applications of physical, chemical and biopharmaceutical principles in pharmacy and pharmaceutical sciences, especially in designing and evaluating various stable pharmaceutical dosage forms.

Additional Course Description

This course introduces applications of physico-chemical and biopharmaceutical principles in designing various pharmaceutical dosage forms. Discussions may include, but not limited to, pertinent mathematical concepts, development issues, processes, regulatory issues and compendial methods of evaluation of commonly administered dosage forms. This course also offers foundational knowledge to enable rational decision-making about drug therapy based on the principles of drug delivery system.

Course Credit

4 credit hours

Pre-Requisites

PHAR 7201: Pharmaceutical Calculations

Co-Requisites

Completion or current enrollment in PHAR 7192: Non-sterile Compounding Lab

Class Meeting Days, Time & Location

Monday and Wednesday: 10:00 am to 12:00 Noon; W.T. Brookshire Hall room # 137

Course Coordinator

Rahmat M. Talukder, R.Ph., Ph.D.

W.T. Brookshire Hall Room # 342

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Office hours: Monday & Friday: 9 am to 10 am

Preferred method of contact: Email

Fisch College of Pharmacy (FCOP) and UT Tyler Policies

This is part 1 of the syllabus. Part 2 contains UT Tyler and the FCOP course policies and procedures. These are available as a PDF at <https://www.uttyler.edu/pharmacy/academic-affairs/files/fcop-syllabus-policies.pdf>. For experiential courses (i.e., IPPE and/or APPE), the Experiential Manual contains additional policies and instructions that supplement the Syllabus Part 1 and 2. Please note, the experiential manual may contain policies with different deadlines and/or instructions. The manual should be followed in these cases.

Required Materials

1. Most of the class materials will be posted on the classes' Canvas site. The site address is: uttyler.edu/canvas.

2. Allen LV, Popovich NG, Ansel HC, et.al. (2013). Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems. 10th ed. Lippincott Williams & Wilkins. (2013). ISBN: 978-0-78-177934-0 (Available via online through the Robert R. Muntz Library).

Recommended Materials

1. Howard C. Ansel and Shelly Janet Prince Stockton (2017). Pharmaceutical Calculations 15th Edition. ISBN-13: 978-1496300713. Lippincott Williams & Wilkins, Philadelphia, Pennsylvania. (Available via online through the Robert R. Muntz Library)

Course Format

The course may include, but are not limited to, the following activities:

1. Independent study of selected readings
2. Individual readiness assessment tests (iRATs)
3. Team-based learning, active learning strategies:
 - a. Team readiness assessment tests (tRATs)
 - b. Team application of content and concepts

Course Learning Outcomes (CLOs)

CLOs	Related PLO(s)	Assessment Methods	Grading Method	JCPP Skill(s) Assessed	ACPE Std. 11 & 12
1. Explain the basic physico-chemical, mathematical and biopharmaceutical principles involved in designing a drug product	1	1	ES	NA	4
2. Explain the nature of selected pharmaceutical dosage forms, including how they are designed, formulated, manufactured or compounded, and stability and quality are tested	1	1	ES	NA	4
3. Describe the delivery techniques and recommended accessories needed for administering selected drug products	1	1	ES	NA	4
4. Develop and describe patient counseling tips on selected drug delivery systems	1	1, 2	ES,	NA	4

Course Assessment Methods

	Assessment Method	Description <i>A brief description of each summative assessment that may be used in this course (This is to allow the college to identify which ACPE standards are being assessed)</i>
1	Exams (Multiple Choice or Multiple Selection Questions)	Standard MCQ and Select All that apply questions in ExamSoft (ES)

Grading Policy & Grade Calculation

Grades will be determined based on evaluation of individual and team readiness assessment tests (iRATs, tRATs), individual and team cumulative assessment tests (iCATs, tCATs), midterm examinations, final examinations, skills assessments, graded application assignments, participation in team-based projects, peer evaluations and other assessment methods that may include, but not limited to, Objective Structured Clinical Examinations (OSCE). Examinations, RATs and CATs may consist of, but not limited to, multiple-choice, true/false, fill in the blank, short-answer, essay, and problem-based questions.

During the time the course is in progress, students whose cumulative course percentage falls below 70.0% may receive an academic alert and be subject to periodic course content review in special sessions with the course instructor(s). The student's faculty advisor may receive an academic alert to act upon on the student's behalf.

All examinations, tests, and assignments, including the final examination, may be **cumulative**. Students are responsible for material presented during the prior courses. The grading scale for all graded material is below. The final course grade will be assigned according to the calculated percentage and the percentages will not be rounded upward or downward. For additional information, see examination/assessment policy below.

Standard Grade Calculation*

Individual Component	85%
iRATs/Other Individual Activities	10%
Exam-1	20%
Exam-2	20%
Final Exam (Comprehensive)	35%
Team Component	15%
tRATs	5%
Team Application(s)	10%
Total	100%

****The final course letter grade will be determined according to the following grading scheme:***

A	90 - 100 %
B	80 - 89.999 %
C	70 - 79.999 %
D	65.0 - 69.999 %
F	< 65.0 %

PHAR 7402: Pharmaceutics Class Schedule (Spring 2020)

Date	Topic	Instructor	CLO	WSOP
1/13	Introduction, Biopharmaceutic Considerations in Drug Product Design*	Dr. Talukder	1	S19
1/15	Biopharmaceutic Considerations in Drug Product Design*	Dr. Talukder	1	S19
1/20	MLK Holiday			
1/22	Preformulation-1*	Dr. Talukder	1, 2	S19
1/27	Preformulation-2*	Dr. Talukder	1, 2	S19
1/29	Preformulation-3	Dr. Talukder	1, 2	S19
2/3	Solution*	Dr. Talukder	2, 4	S19
2/5	Solution*	Dr. Talukder	2, 4	S19
2/10	Suspension*	Dr. Talukder	2, 4	S19
2/12	Emulsion*	Dr. Talukder	3, 4	S19
2/17	Powders & Granules (Including Inhalers)-1*	Dr. Talukder	3, 4	S19
2/19	Exam-1			
2/24	Powders & Granules (Including Inhalers)-1*	Dr. Talukder	2, 4	S19
2/26	Creams, Ointment, Pastes, Gels*	Dr. Talukder	2, 4	S19
3/02	Rectal Drug Delivery (Suppositories, Inserts etc.)*	Dr. Talukder	1, 2	S19
3/04	Capsules*	Dr. Talukder	1, 2	S19
3/09 – 3/14: Spring Break				
3/16		Dr. Talukder	3, 4	S19
3/18		Dr. Talukder	3, 4	S19
3/23	Tablets*	Dr. Talukder	3, 4	S19
3/25	Controlled Release Systems*	Dr. Talukder	1, 2	S19
3/30	Controlled Release Systems*	Dr. Talukder	1	S19
4/1	Transdermal Systems*	Dr. Talukder	1	S19
4/6	Exam – 2 (Materials from 02/17 to 03/30)			
4/8	Sterile Preparations*	Dr. Talukder	1	S19
4/13	Radiopharmaceuticals*	Dr. Talukder	1	S19
4/15	Biologics*	Dr. Talukder	1, 2	S19
4/20	Biotechnology Based Drugs*	Dr. Talukder	1, 2	S19
4/22	Biotechnology Based Drugs*	Dr. Talukder	1	S19
4/27	Drug Approval Process*	Dr. Talukder	1	S19
	Final Exam (Comprehensive)			

* iRATs & tRATs

Please note that dates, topics, and assignments are subject to change. In the event of a change, you will be given notification of the change.