UNIVERSITY OF SOUTHERN CALIFORNIA

SCHOOL OF PHARMACY

Course: PHAR 414: Therapeutics I
5 Units, class #60223

FACULTY

Course Coordinators:

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COURSE DESCRIPTION

Students will be given the opportunity to learn the basic principles of Pharmacology, Biomedicinal Chemistry, Pharmaceutics and Therapeutics. Students will be introduced to Drug Toxicity, Drug Metabolism, Drug Interactions, Drug Receptor Interactions, Natural Products, and other subjects, of which modern Pharmacists must be aware. Each subject area is presented in an integrated approach with Pharmacology, Biomedicinal Chemistry, Pharmaceutics and Therapeutics lectures. There will be 61 lectures, 3 case discussions, 2 midterm examinations and a final examination. The lectures will be presented over a seven week period.

SPECIFIC OBJECTIVES - This integrated, team taught course will help the students master the following areas:

- FDA drug approval process and drug discovery process
- Structure activity relationships
- Physicochemical properties of drugs
- Receptor classification and kinetics
- Molecular forces in drug receptor interactions and nonreceptor mechanisms

- Tissue and system drug targets
- Drug targeting
- Dose response curves
- Drug delivery, absorption, distribution and excretion
- Drug metabolism and pharmacogenetics
- Toxicology, drug interactions and drug toxicity
- Clinical aspects of pharmacokinetics and pharmacodynamics
- Clinical laboratory tests and noninvasive diagnostic techniques
- Fluids and electrolytes
- Allergies and immunology
- Natural products and vitamins

EXAMINATIONS

Examinations will usually be multiple choice or true/false format. Instructors may choose to use essay questions. For the midterms, each lecture will be tested with 3 questions per hour of lecture. The final examination will be cumulative and will be tested with 1 question per hour of lecture that has already been tested and 3 questions per hour for lectures that have not already been tested.

	Approximate Grading
Exam 1 Friday, January 25, 1:00-3:00 PM, Meyer Auditorium	24% of grade
Exam 2 Friday, February 8, 2:00-4:00 PM, Meyer Auditorium	26.5% of grade
Final Thursday, March 7, 1:00-4:00 PM, Meyer Auditorium	40% of grade
Case discussions	8% of grade
Dose Response Self Study	1.5% of grade

The actual percentage of the grade for each examination will depend on the number of hours of lecture tested by each examination. The midterms will end promptly at the designated time. No test materials will be collected after these times. Any student who does not take an examination at the scheduled time, other than for medical or family emergencies, will fail the course. There will be no exceptions to this policy. Any student found cheating during an examination will receive an F on the test.

REPLACEMENT EXAMINATION POLICY

A student who would otherwise receive a D or an F in a course may sit for a scheduled Replacement Examination provided they are deemed eligible. A student will be deemed ineligible if:

1. The student has received 2 F's within a semester or academic year
2. The student has received 1 D and 1 F in a semester
3. The student has received 3 or more D grades in a semester
4. The student has received 2 D's or a combination of 1 D and 1 F in a two semester sequence course within an academic year.
5. If the student has already sat for two Replacement Examinations within the academic year

The Replacement Examination will be worth 40% of the grade and will occur at the end of the semester. The results of the Replacement Examination will be averaged with the rest of the grades used for determining the original grade.

The maximum grade a student can receive after averaging in the Replacement Examination is a C.

If the student does poorly on the Replacement Examination, the student's course grade may decrease.

Textbooks - **Required**

1) Goodman and Gilman's The Pharmacological Basis of Therapeutics, 9th ed. Gilman AG, Rall TW, Nies AS, Taylor P (eds). Pergamon Press, 1996
2) Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry. Delgado, JN, Remers, WA (eds) Lippincott-Raven, 1998.
3) Pharmacotherapy: A Pathophysiologic Approach, 4th ed. Posey, LM, DiPiro JT (eds) Appleton & Lange, 1999

Textbooks - Recommended

Basic and Clinical Pharmacology, 7th ed. Katsung BG (ed). Appleton & Lange, 1998.
Casarett and Doull's Toxicology: The Basic Science of Poisons. 5th Revised ed. McGraw-Hill, 1999.
Principles of Pharmacology, Munson PL, Mueller, RA and Breese, GR. Chapman & Hall, 1996.

CLASS SCHEDULE

The class schedule is attached. The class meets in **PSC 108** on
Wednesdays from 2:00 - 5:00 PM; on
Thursdays from 1:00 - 5:00 PM; and on
Fridays from 1:00 - 4:00 PM.
Case discussions with the residents will occur on some Thursdays from 3:00 – 5:00 PM, discussions will occur in various rooms

CLASS ATTENDANCE AND NOTE POOLING

Class attendance is encouraged. Note pooling is allowed, but is discouraged. Students must be aware that the note pool makes mistakes and does not make up for not attending lectures.

COURSE PHAR 414: THERAPEUTICS I
Class Schedule, Spring 2001

Month	Day	Hour	Subject	Instructor
January	W 9	2:00	Introduction	Rho/Adams
		3:00	Physicochemical properties	Bolger
		4:00	Receptor classification	Bolger
	Th 10	1:00	Receptor kinetics	Adams
		2:00	Molecular forces in drug receptor interactions	Cadenas
		3:00	Molecular forces in drug receptor interactions	Cadenas
		4:00	Nonreceptor mechanisms	Alkana
	F 11	1:00	Dose response curves	Adams
		2:00	FDA drug approval process	Stagg
		3:00	FDA drug approval process	Stagg
	W 16	2:00	Drug metabolism - cytochrome P450	Adams
		3:00	Drug metabolism - cytochrome P450	Adams
		4:00	Drug metabolism - conjugation	Adams
	Th 17	1:00	Drug interactions	Cupo
		2:00	Drug interactions	Cupo
		3:00	DISCUSSION – Drug Interactions	Residents
		4:00	DISCUSSION – Drug Interactions	Residents
	F 18	1:00	Pharmacogenetics	Gutierrez
		2:00	Pharmacogenetics	Gutierrez
		3:00	SAR adrenergic agonists and antagonists (α_1, α_2)	Lien
	W 23	2:00	SAR adrenergic agonists and antagonists (β_1, β_2)	Lien
		3:00	SAR adrenergic agonists (indirect) and antagonists (irrev)	Lien
		4:00	SAR adrenergic antagonists (alkaloids, quinazolines)	Lien
	Th 24	1:00	Drug targeting	Rho
		2:00	Drug targeting	Rho
		3:00	Self study of dose response curves	Bolger
		4:00	Self study of dose response curves	Bolger
	F 25	1:00	**1st. MIDTERM – Meyer Auditorium**	All instructors
		2:00	**To cover through SAR adrenergic antagonists**	

Month	Day	Hour	Subject	Instructor
	W 30	2:00	Noninvasive diagnostic techniques	Wolf
		3:00	Noninvasive diagnostic techniques	Wolf
		4:00	Clinical laboratory tests	Besinque
	Th 31	1:00	Clinical laboratory tests	Besinque
		2:00	Documentation of Pharmaceutical Care	Gong
		3:00	Documentation of Pharmaceutical Care	Gong
		4:00	Fluids and electrolytes	Lieu
Feb	F 1	1:00	Fluids and electrolytes	Lieu
		2:00	Fluids and electrolytes	Lieu
		3:00	Fluids and electrolytes	Lieu
	W 6	2:00	Clinical aspects of pharmacokinetics	Beringer
		3:00	Clinical aspects of pharmacodynamics	Beringer
		4:00	Toxicology	Sevanian
	Th 7	1:00	Toxicology	Sevanian
		2:00	Toxicology	Sevanian
		3:00	DISCUSSION – Fluid and Electrolytes	Residents
		4:00	DISCUSSION – Fluids and Electrolytes	Residents
	F8	1:00	Adverse drug events	Rho
		2:00	**2nd. MIDTERM – PSC 108/112**	All instructors
		3:00	**To cover through Fluids and Electrolytes**	
	W 13	2:00	Pharmacology of antihistamines and adrenergics	Adams
		3:00	Pharmacology of antihistamines and adrenergics	Adams
		4:00	Chemistry of histamine agonists (H_1, H_2)	Lien
	Th 14	1:00	SAR of antihistamines (H_1) and mast cell stabilizers	Lien
		2:00	Pharmacokinetics of antihistamines and adrenergics	Adams
		3:00	Clinical aspects of allergies and immunology	Rho
		4:00	Clinical aspects of allergies and immunology	Rho
	F 15	1:00	Natural products- Chemistry (secondary metabolites)	Lien
		2:00	Natural products – Chemistry (carbohydrates, glycosides, phenolics)	Lien
		3:00	Local Medicinal Plants	Adams
	W 20	2:00	Natural products - Pharmacology	Adams
		3:00	Natural products - Pharmacology	Adams
		4:00	Natural products - Pharmacology	Adams

Month	Day	Hour	Subject	Instructor
	Th 21	1:00	Natural products – Chemistry (alkaloids)	Lien
		2:00	Natural products – Chemistry (biotechnology products)	Lien
		3:00	Natural products – Pharmacology	Adams
		4:00	Natural products – Pharmacology	Adams
	F 22	1:00	Natural products – clinical use in arthritis	Adams
		2:00	Natural products – clinical use in psychiatry	Wincor
		3:00	Natural products – clinical use in various diseases	Wincor
	Th28	3:00	DISCUSSION – Applied Pharmacokinetics	Residents
		4:00	DISCUSSION – Applied Pharmacokinetics	Residents
	Th7	1:00-4:00	**FINAL EXAMINATION – PSC 108 & 112**	All instructors