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### PHAR 554.01: Therapeutics IV

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## Therapeutics IV - Pharmacy 554 - Spring 2014

Course Coordinator: WJD

M, T 1310-1500 SB 114

Instructors:

F 1510-1730 (Tests)

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### Disabilities

*Students with disabilities may request reasonable modifications by contacting me. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students (DSS). "Reasonable" means the University permits no fundamental alterations of academic standards or retroactive modifications. For more information, please consult <http://www.umt.edu/disability>. If you think you may have a disability adversely affecting your academic performance, and you have not already registered with DSS, please contact DSS in Lommasson 154. I will work with you and DSS to provide an appropriate accommodation.*

The University requires the following statement on all syllabi:

"All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at [http://life.umt.edu/vpsa/student\\_conduct.php](http://life.umt.edu/vpsa/student_conduct.php)

### Material and Resources

Required Texts:

DiPiro: *Pharmacotherapy*

APhA: *Handbook of Nonprescription Drugs*

Goodman & Gilman's *Pharmacological Basis of Therapeutics*

Boh's *Pharmacy Practice Manual: A Guide to the Clinical Experience*

Susan Stein, **OR** a diagnostic and laboratory book

A medical dictionary

Optional Texts:

Clinical Pharmacokinetics Pocket Reference, John Murphy  
(strongly recommended)

Young, Koda-Kimble: *Applied Therapeutics*

### Course Orientation

Pharmacotherapy is drug therapy. It involves the application of drug knowledge to the treatment of patients. This requires organizational skills, critical thinking skills, problem solving skills, communication skills, and creativity as well as an understanding of drugs, diseases, and people. This course will focus on the analytical, synthesizing, and evaluative skills needed to assess drug therapy and formulate and communicate a solution. Although knowledge is not the primary focus, you will learn much information by using it to solve pharmacotherapeutic

problems.

**Pharm. D. Program Outcomes addressed by this course:** IA, IB, III, VIA, VIB, VIIA, VIIIA, VIIC

These outcomes may be found on the program website (under “current students” then “documents”) but are reproduced for you below: <http://pharmacy.health.umt.edu/documents-and-links>

**University of Montana - Doctor of Pharmacy Program Mission and Outcomes Statement (9-10-09)**

The mission of the Doctor of Pharmacy Program is to prepare future pharmacists, in both formal and informal learning environments, to provide patient-centered and population-based care and to manage the systems within which pharmacists work while fostering professionalism, leadership and advocacy, interprofessional collaboration, self-directed learning, cultural competency and scholarship.

In achieving the mission of the Doctor of Pharmacy Program, graduates will have the ability\* (knowledge, skills, attitudes and values) to:

I. Provide patient-centered care

- A. Integrate and apply biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences
- B. Ensure optimal pharmacotherapy for patients

II. Communicate effectively with patients, families, caregivers, and health care professionals

III. Use critical thinking and problem solving skills to enhance patient care

IV. Work effectively within an interprofessional team

V. Manage and utilize resources of the health care system for the benefit of individual and public health.

- A. Promote patient and public safety
- B. Perform quality assurance techniques to improve the medication use system
- C. Seek to reduce health care disparities.

VI. Efficiently utilize information resources and technology

- A. Identify, retrieve and interpret relevant professional literature
- B. Communicate evidence-based information to other health care providers, patients, and the public

VII. Promote public health

- A. Promote health improvement, wellness, and disease prevention
- B. Solve, or contribute to, solutions to public health problems

VIII. Practice professionally

- A. Apply ethical, social, legal and economic principles to practice
- B. Respond to patients' needs in a culturally sensitive manner
- C. Apply practice standards to optimize patient care
- D. Maintain professional competence by becoming a self-directed learner

IX. Be a good citizen, demonstrate leadership and contribute to the community

X. Engage in scholarly activity

- A. Use a scholarly approach to become an agent of change to advance pharmacy practice

B. Demonstrate a commitment to life-long learning

\*Each ability is many faceted. The ACPE Accreditation Standards, Guidelines, and Appendices ([http://www.acpe-ccredit.org/pdf/ACPE\\_Revised\\_PharmD\\_Standards\\_Adopted\\_Jan152006.DOC](http://www.acpe-ccredit.org/pdf/ACPE_Revised_PharmD_Standards_Adopted_Jan152006.DOC)) and the CAPE Educational Outcomes 2004 and Supplements ([http://www.aacp.org/Docs/MainNavigation/Resources/6075\\_CAPE2004.pdf](http://www.aacp.org/Docs/MainNavigation/Resources/6075_CAPE2004.pdf)) describe these abilities in much more detail and can be consulted for further definition.

## **Goals of the Course**

To develop and utilize organizational skills, critical thinking skills, problem solving skills, and communications skills to benefit patients.

To promote the students' understanding of pathophysiology of cardiovascular, psychiatric, and neurological disorders with particular emphasis on the facets of diseases that are amenable to drug therapy.

To augment the student's understanding of the management of cardiovascular, psychiatric, and neurological disorders with particular emphasis on pharmacotherapy.

To familiarize the student with the proper use of drugs in a clinical setting.

To develop the student's awareness of factors that should be considered prior to selection of a drug and the appropriate parameters that should be monitored for therapeutic as well as undesired effects.

## **Performance Objectives**

Upon completion of this course, each student shall be able to:

Organize patient information into a problem list with supporting data.

Relate the pathophysiology of a disease to the known or purported action(s) of a drug.

Evaluate the seriousness of a disorder based on the signs and symptoms related to a diagnosed problem, and:

- determine the necessity of drug therapy,
- when applicable, choose the proper drug, dosage, and/or drug product for the situation.

Determine the role of non-pharmacologic therapy.

Tailor the drug therapy to an individual based on patient characteristics and pharmacokinetic and pharmacoeconomic principles.

Monitor the appropriate parameters of a disease to determine if the patient is responding

positively to therapy.

Monitor for adverse drug reactions and exacerbation of underlying patient problems resulting from drug therapy.

Identify potential drug-drug interactions, and put forth an appropriate plan to mitigate these issues.

Identify and formulate solutions for specific drug related problems

Evaluate potential solutions for a given patient's drug related problem to optimize his/her pharmacotherapy.

Communicate pharmacotherapeutic suggestions effectively.

More Specific Goals and Objectives are attached to the handout for each topic.

### **Student Responsibilities and Obligations**

To do assigned readings and studying from the texts **before** the corresponding class sessions.

To attend and participate in class discussions.

To perform clinical assessments and recommendations successfully on take-home cases and write professional consultations.

To perform satisfactorily on tests.

### **Testing and Grading:**

Your grade is determined by your responses on take-home cases and tests. Both take-homes and tests require you to utilize material that you were exposed to and should have **learned** in prior classes. Take-home cases should be evaluated to identify any drug related problem and propose solutions to these problems. The rationale for your recommendation is an essential component and should be stated completely. The “why” is more important than the “what”. More specific information for what is needed in the answer is provided in the rubric for each case.

Unless other arrangements have been made with the course coordinator (wjd) prior to the due date, these assignments must be **turned in on time** if credit is to be awarded. Discussion of these take-home assignments among students is encouraged. However, each student must write their own answers. **No other student should ever see your written response; this will be considered academic dishonesty.** Identical, or virtually identical, responses will be considered academic dishonesty and lead to failure of the course. .

Pharmacokinetics topics will be graded in two ways: test questions and take-home cases. The homework should include:

- an evaluation of the patient and current dosage of the drug,
- calculations (if needed) including (at a minimum) formulae, numbers substituted in, and the answer, and
- a written consultation to the physician with your evaluation, recommendations, and justification.

The test questions are usually: 1) evaluate this person's therapy and state if you agree or disagree. If you agree, state why. If you disagree, state why, suggest an alternative, and justify your choice, or 2) Critique this prescription. If you agree, state why. If you disagree, state why, suggest an alternative, and justify your choice.

There will be four tests, two cardiac, one psychiatric, and one neurologic. These will be open book and open notebook. **No electronic devices are allowed.** Questions will be case scenarios, similar to take-home cases. You will need to organize data, evaluate, recognize problems, and generate, justify and communicate solutions.

Academic dishonesty, also known as cheating, will not be tolerated in any form. Academic dishonesty will result in failure of the course. One form of academic dishonesty is plagiarism. According to the Online Writing Lab of Purdue University, last updated on March 27, 2013 by Karl Stolley, Allen Brizee, Joshua M. Paiz, plagiarism "is the uncredited use (both intentional and unintentional) of somebody else's words or ideas." As for the definition of plagiarism as defined on the website [www.plagiarism.org](http://www.plagiarism.org) (2013) "All of the following are considered plagiarism:

- turning in someone else's work as your own
- copying words or ideas from someone else without giving credit
- failing to put a quotation in quotation marks
- giving incorrect information about the source of a quotation
- changing words but copying the sentence structure of a source without giving credit
- copying so many words or ideas from a source that it makes up the majority of your work, whether you give credit or not (see our section on "fair use" rules)"

Grading: Your grade in Therapeutics IV is based on total points. A point is a point, whether it is on a test or on a homework assignment. Grades are based on the original curve (see below); NOT the 90/80/70/60 to which you have become accustomed.. At the end of the course, I will put the total points in a distribution and look for natural breaks to divide between grades. A, B, C, D, or F are the only possibilities, there are no +/-'s.

There are a few guarantees.

1. All assignments must be completed or you will fail the course no matter how many points you have accumulated.
2. You are guaranteed, at least a(n):
  - A if you achieve > 93% of the highest grade
  - B if you achieve > 86% of the highest grade
  - C if you achieve > 79% of the highest grade

D if you achieve > 72% of the highest grade.

I calculate this percentage on the basis of the highest grade achieved in the class. I figure the rest are our fault. Therefore, the percentage on any given assignment is irrelevant. These cuts are not absolute. They will never go up. They often go down, based on gaps between groups of students.

An assessment schedule is attached. Grades are presented and kept on Moodle. This is not intended to be an online course. If faculty want to post materials they can, but not all course materials will be available online.

### Syllabus:

Reading and studying are **REQUIRED**. The contents of the assigned pages, some of which may not be discussed in class, will be included on cases and tests. You are expected to have read and **STUDIED** each chapter and be ready to discuss it before the assigned class time. In addition, you are expected to bring what you have learned in previous classes, such as pharmacokinetics, pharmacology, pharmaceutics, and therapeutics.

Chapter is chapter of DiPiro, eighth edition) as a Study Assignment to be done before class

Day	Month	Date	Topic	Instructor	Chapter
M	Jan	27	Introduction Ischemic Heart Disease	wjd vjc	23
T	Jan	28	Ischemic Heart Disease	vjc	24
M	Feb	03	Electrocardiograms Dysrhythmias	vjc	17 18
T		04	Dysrhythmias	vjc	25
M		10	Dysrhythmias	vjc	
T		11	Digoxin Pharmacokinetic – bring calculators	wjd	8
M		17	Presidents' Holiday		
T		18	Hypertension	kh	19, JNC-8
F		21	<b>Test One</b> thru Dig PK 1510-1740	SB114/117	

M		24	Hypertension Lipid	kh	28 2013 ACC/AHA Guideli ne on the Treatme nt of Blood Cholest erol to Reduce ASCVD Risk in Adults
T	Feb	25	Lipid	kh	
M	Mar	03	Alcohol withdrawal Heart Failure	wjd vjc	20, 21
T		04	Heart Failure	vjc	22
M		10	Hemodynamics	vjc	
T		11	Shock	vjc	30, 31
M		17	Schizophrenia	sn	76
T		18	Schizophrenia Depression	sn	77
F		21	<b>Test two</b> HTN thru Shock 1510-1740	SB114/117	
M		24	Depression Bipolar Disorder	sn	78
T		25	Bipolar Disorder Anxiety Disorders	sn wjd	79
M	Mar	31	Spring		
T	Apr	01	Break		
M		07	Anxiety Disorders	wjd	80
T		08	Sleep Disorders	wjd	81
M		14	ADHD	wjd	72
T		15	ADHD Anticonvulsant Pharmacokinetics	dra	
F		18	<b>Test three</b> schiz thru sleep 1510-1740	SB114/117	
M		21	Anticonvulsant Pharmacokinetics Seizures	dra	65
T		22	Seizures	dra	66
M		28	Parkinson's disease		68
T	Apr	29	Dementia	gah	63



M	May	05	Multiple Sclerosis Spinal Cord Injury	dra	64
T		06	in lieu of tests		
M		12	<b>Test 4</b> ADHD thru SCI 1310-1540 S	SB169	

**Assessment Schedule** (\*due during break week or a holiday, so plan for it)

Instructor	Points	Assessment	Due Student	Due to Instructor
vjc	15	Ischemic Heart Disease	1/28	2/4
vjc	30	Dysrhythmias	2/10	2/17
wjd	10	Digoxin Pharmacokinetics	2/11	2/18
	55			
kh	15	Hypertension	2/24	3/3
kh	15	Lipids	2/25	3/4
	55	<b>Test One</b> 1510-1730 thru Dig PK SB114/117	2/21	2/21
wjd	5	Alcohol withdrawal	3/3	3/10
vjc	15	Heart Failure	3/4	3/11
vjc	10	Hemodynamics	3/10	3/17
en	10	Shock	3/11	3/18
	70	<b>Test two</b> HTN thru Shock 1510-1740	3/21	3/21
wjd	15	Schizophrenia	3/18	3/25
wjd	10	Depression	3/24	3/31*
wjd	10	Bipolar Disorder	3/25	4/1*
wjd	15	Anxiety	4/7	4/14
wjd	10	Sleep Disorders	4/8	4/15
	60	<b>Test three</b> Schiz thru sleep 1310-1530 SB 114/117	4/18	4/18
wjd	15	ADHD	4/15	4/22
dra	10	Anticonvulsant Pharmacokinetics	4/21	4/28
dra	15	Seizure Disorders	4/22	4/29
dra	10	Parkinson's	4/28	5/5
gah	10	Dementia	4/29	5/6
dra	5	Multiple Sclerosis	5/6	5/13
dra	5	Spinal Cord Injury	5/6	5/13
	70	<b>Test Four</b> ADHD thru SCI 1310-1540 SB169	5/14	5/14