Principles of Physiology, Pharmacology and Pharmacogenomics
PHAR 7301
Fall Semester 2020

Course Description
This course introduces students to basic principles related to the body and how drugs act within it. Basic principles of physiology, pharmacology and pharmacogenomics will be presented.

Additional Course Description
This course is an introduction to basic principles and concepts of physiology, pharmacology and pharmacogenomics. Topics covered include concepts and mechanisms of basic processes underlying disease; general principles of drug action and therapeutics, including drug receptors interactions, and the relationship between drug concentration and drug effect; and foundational concepts in pharmacogenomics.

Course Credit
3 credit hours

Pre-Requisites
None

Co-Requisites
None

Class Meeting Days, Time & Location
Wednesdays, 9:00 am – 12:00 pm; W.T. Brookshire Hall rooms 136 and 137.

Course Coordinator
Ayman K Hamouda, BPharm, PhD
W.T. Brookshire Hall Room 369
Email: Ahamouda@uttyler.edu
Office hours: face-to-face appointment, walk-in, call, email, zoom, skype… etc.
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
Most course required materials are available through the Robert R. Muntz Library. These materials are available either online* (http://library.uttyler.edu/) or on reserve.

1. Golan DE. Principles of Pharmacology: The Pathophysiologic Basis of Drug Therapy. North American 4th Edition. ISBN-13: 978-1451191004; ISBN-10: 9781451191004
2. **Other required materials will be posted on the classes' Canvas site. The site address is: uttyler.edu/canvas.**

Recommended Materials

Recommended materials are available online (http://library.uttyler.edu/) at the Robert R. Muntz Library.

1. *Pathophysiology of Disease: An Introduction to Clinical Medicine (7th Edition). Hammer GD and McPhee SJ. Lange-McGraw Hill. ISBN: 978-0-07-180600-8, 2014.
2. *Basic and Clinical Pharmacology (14th Edition). Katzung BG. Lange-McGraw Hill. ISBN: 978-1-259-64115-2, 2018.
3. *Goodman & Gilman's: The Pharmacological Basis of Therapeutics, (13th Edition). Shanahan, JF and Lebowitz, H. Lange-McGraw Hill. ISBN: 978-1-25-958473-2, 2018.

Course Format

The course may include, but is 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)	EPAs	Assessment Methods	Grading Method	PPCP Skill(s) Assessed	ACPE Std. 11 & 12
1. Describe and discuss basic principles and concepts of physiology, pharmacology and pharmacogenomics.	1	1.1	1,2	ES	N/A	N/A
2. Understand concepts and mechanisms of normal physiological processes and pathological processes underlying disease.	1	1.1	1,2	ES	N/A	N/A
3. Understand general principles of drug action, including drug receptors interactions, and the relationship between drug concentration and drug effect.	1	1.1	1,2,	ES	N/A	N/A
4. Understand the relationship between pharmacokinetic and pharmacodynamic properties of drugs and their therapeutic benefit, side effects, and clinical uses.	1, 2	1.1, 1.2	1,2	ES	N/A	N/A
5. Apply foundational concepts of physiology and pharmacology to identify and resolve medication-related problems, educate intended audience, advocate health care, and promote public health and wellness.	1, 4, 6, 7, 8	1.1, 1.2, 2.1, 4.1	1,2,6,8	ES	N/A	N/A

Course Assessment Methods

	Assessment Method	Description
1	Exam Multiple Choice or Multiple Selection Question(s)	Standard MCQ and/or Select All that apply questions.
2	Exam Open Ended Question(s)	Short answer and/or fill-in-the blank questions.
6	Team Project	A team project/report may be added as part of the final exam or as bonus points.
8	Oral Presentation	An individual project/report may be added as part of the final exam or as bonus points.

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 written examinations, skills assessments, graded application assignments, participation in team-based projects, peer evaluations and other assessment methods that may include Objective Structured Clinical Examinations (OSCE). Examinations, RATs and CATs may consist of multiple-choice, true/false, 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*

iRATs/Other Individual Activities	20%
Major Assessments (e.g., Midterm/Final Exams)	75%
tRAT and Team Applications	5%
Total	**100%**

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

A	90 - 100 %
B	80 - 89.99$\bar{9}$ %
C	70 - 79.99$\bar{9}$ %
D	65.0 - 69.99$\bar{9}$ %
F	< 65.0 %

PHAR 7301 (Physiology, Pharmacology, Pharmacogenomics) Course Schedule

WEEK	DAY	TOPIC	Instructor	CLO	Disease State
1	08/26/2020	Pharmacodynamics: Drugs and Receptors #1	Hamouda	1	
2	09/02/2020	Pharmacodynamics: Drugs and Receptors #2	Hamouda	1,3	
3	09/9/2020	Pharmacokinetics: ADME	Wang	1,2	
4	09/16/2020	Toxicology and Pharmacogenomics	Wang	1,2	
5	09/23/2020	EXAM 1			
6	09/30/2020	Physiology and Pharmacology: Autonomic Nervous System #1	Wang	1,3	
7	10/07/2020	Physiology and Pharmacology: Autonomic Nervous System #2	Wang	1,3	
8	10/14/2020	Physiology: Central Nervous System	Hamouda	1,3	
9	10/21/2020	Pharmacology: Muscle Relaxants, Local Anesthetics, General Anesthetics	Hamouda	3,4	
10	10/28/2020	EXAM 2			
11	11/04/2020	Pathophysiology & Pharmacology: Epilepsy and Anticonvulsants	Hamouda	2,3,4	epilepsy
12	11/11/2020	Pathophysiology & Pharmacology: Epilepsy and Anticonvulsants	Hamouda	2,3,4	epilepsy
13	11/18/2020	Pathophysiology & Pharmacology: Pain & Analgesics	Hamouda	3,4,5	Chronic pain
14	11/25/2020	Thanksgiving			
15	12/02/2020	Pathophysiology & Pharmacology: Pain & Analgesics	Hamouda	3,4,5	Chronic pain
		Final Exam (date TBD by Academic Affairs; may not be on class day)			

Expect a RAT on every class day. The instructor may choose to omit a RAT or administer a take-home assignment, in lieu of a RAT.

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