Pharmacoepidemiology and Pharmacoeconomics
PHAR 7377
Fall Semester 2021

Catalogue Description
This course introduces pharmacy students to the principles of pharmacoepidemiology and pharmacoeconomics with emphasis on application to pharmacy practice and evaluation of drug literature.

Additional Course Information
The course provides students with an introduction to the principles of pharmacoepidemiology and pharmacoeconomics and their relationship to pharmacy practice. Pharmacoepidemiology topics include basic epidemiologic principles, measures of disease frequency and association, methodological issues in pharmacoepidemiology studies such as bias and confounding, and critical evaluation of pharmacoepidemiology literature. Special attention will be given to the application of these principles to population-based pharmacy practice, such as the measurement of drug utilization and effects of drug use on treatment outcomes in large patient populations. Pharmacoeconomic topics include measuring and estimating different types of costs in the healthcare system, evaluating different types of cost analyses, and making decisions about the cost-effectiveness of therapeutic alternatives using decision trees and Markov modeling.

Course Credit
Three (3) credit hours

Pre-Requisites
Completion of PHAR 7274 Biostatistics and Clinical Research Methods or equivalent course

Co-Requisites
None

Class Meeting Days, Time & Location
Friday 9:00 am – 12:00 pm, W.T. Brookshire Hall Room # 133

Course Coordinator
Osama A. Shoair, PhD
W.T. Brookshire Hall Room 346
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Email: oshoair@uttyler.edu
Office hours: Wednesday/Friday 12:00 pm – 1:30 pm, and by appointment
Preferred method of contact: E-mail

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 and Part 3 contains policies specific to Fall 2021. These are available as a PDF at https://www.uttyler.edu/pharmacy/academic-affairs/

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. *Yang Y, West-Strum D. *Understanding Pharmacoepidemiology*. 1st ed. McGraw-Hill Education; 2011. ISBN: 978-0-07-163500-4. Available at AccessPharmacy through UT Tyler Library.
2. Rascati KL. *Essentials of Pharmacoeconomics*. 2nd ed. Wolters Kluwer; 2013. ISBN: 978-1-4511-7593-6. Available at LWW Health Library through UT Tyler Library.
3. Other required materials will be posted on the classes' Canvas site. The site address is http://uttyler.edu/canvas

Recommended Materials
None.

Course Format
The course may include, but is not limited to, the following activities:
1. Independent study of selected readings
2. Preclass assignments
3. Individual readiness assessment tests (iRATs)
4. Individual applications
5. Team-based learning, active learning strategies:
    a. Team readiness assessment tests (tRATs)
    b. Team application of content and concepts
    c. Team presentation of content and concepts
6. Completion of online trainings/quizzes
7. Educational video clips (online and in class)

Course Learning Outcomes (CLOs)

CLOs	PLO(s) Assessed for this CLO (1-15)	EPAs (1.1-6.1)	Assessment Methods	Grading Method	PPCP Skill(s) Assessed (1-5)	ACPE Std. 11 & 12 (1-4)
1. Calculate measures of disease frequency and measures of association between exposures and outcomes	1	NA	1	ES	NA	4
2. Identify potential sources of bias and confounding in pharmacoepidemiology studies	1	NA	1	ES	NA	4
3. Calculate medication adherence and persistence using administrative claims data	1	NA	1	ES	NA	4
4. Evaluate the strengths and limitations of published pharmacoepidemiology studies	1	NA	1	ES	NA	4
5. Compare costs and outcomes of therapeutic alternatives using various pharmacoeconomic analyses	1	NA	1	ES	NA	4
6. Evaluate the strengths and limitations of published pharmacoeconomic studies	1	NA	1	ES	NA	4

Course Assessment Methods

	Assessment Method	Description
1	Formative and Summative Written Exams	*Standard multiple-choice, select all that apply, matching, hot spot, fill-in-the-blank, and short essay questions*

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

INDIVIDUAL COMPONENTS	95%
iRATs	10%
Individual Applications	15%
Exam 1	20%
Exam 2	15%
Final Exam	35%
TEAM COMPONENTS	5%
tRATs	2%
Team Applications	3%
TOTAL	100%

Final Course Letter Grade

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

PHAR 7377 Course Schedule (Fall 2021)

Week	Day	Topic	Instructor	CLO	Disease State
1	8/27	Pharmacoepidemiology: Introduction to Pharmacoepidemiology	Shoair	1	S20.99
2	9/3	Pharmacoepidemiology: Measures of Morbidity and Mortality	Shoair	1	S20.99
3	9/10	Pharmacoepidemiology: Measures of Association between Exposures and Outcomes	Shoair	1	S20.99
4	9/17	Pharmacoepidemiology: Methodological Issues in Pharmacoepidemiology Studies	Shoair	2	S20.99
5	9/24	Pharmacoepidemiology: Medication Utilization Patterns	Shoair	3	S20.99
6	10/1	Pharmacoepidemiology: Evaluation of the Pharmacoepidemiology Literature	Shoair	4	S20.99
7	**10/8**	**EXAM 1 (Content covered from 8/27 through 10/1)**			
8	10/15	Pharmacoeconomics: Introduction to Pharmacoeconomics	Shoair	5	S20.99
		Pharmacoeconomics: Measuring and Estimating Costs	Shoair	5	
9	10/22	Pharmacoeconomics: Evaluation of the Pharmacoeconomic Literature	Shoair	6	S20.99
		Pharmacoeconomics: Cost-Minimization Analysis	Shoair	5, 6	
10	10/29	Pharmacoeconomics: Cost-Effectiveness Analysis	Shoair	5, 6	S20.99
11	**11/5**	**EXAM 2 (Content covered from 10/15 through 10/29)**			
12	11/12	Pharmacoeconomics: Cost-Utility Analysis	Shoair	5, 6	S20.99
13	11/19	Pharmacoeconomics: Cost-Benefit Analysis	Shoair	5, 6	S20.99
	11/26	**Thanksgiving Holiday: No Classes**			
14	12/3	Pharmacoeconomics: Decision Analysis and Markov Modeling	Shoair	5, 6	S20.99
15	**12/8**	**FINAL EXAM from 1:00 pm – 4:00 pm (Content covered from 8/27 through 12/3)**			
Dates, topics, and assignments are subject to change. In the event of a change, you will be given ample notification of the changes.					