

PHAR 7377 Pharmacoepidemiology and Pharmacoeconomics

Fall 2024

Course 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 applying these principles to population-based pharmacy practice, such as the measurement of drug utilization and the effects of drug use on treatment outcomes in large patient populations. Pharmacoeconomic topics include measuring and estimating different categories 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

Thursday 9:00 am – 12:00 pm, W.T. Brookshire Hall Room 234

Course Coordinator

Osama A. Shoaib, Ph.D.

W.T. Brookshire Hall Room 346

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Email: oshoaib@uttyler.edu

Office hours: Thursday/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. 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: Health Economics and Outcomes Research*. 3rd ed. Wolters Kluwer; 2021. ISBN: 978-1-9751-3944-5. 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 of content and concepts
5. Team-based assignments
 - a. Team readiness assessment tests (tRATs)
 - b. Team application of content and concepts
 - c. Team presentation of content and concepts
6. Completion of online training and quizzes
7. Educational video clips (online and in class)
8. Journal Clubs

Course Learning Outcomes (CLOs)

CLOs	PLO(s) Assessed for this CLO (1-15)	EPAs (1-13)	ACPE Std. 11 & 12 (1-4)	Grading Method	Assessment Methods
1. Calculate measures of disease frequency and measures of association between exposures and outcomes	1	NA	4	ES	1
2. Identify potential sources of bias and confounding in pharmacoepidemiology studies	1	NA	4	ES	1
3. Calculate medication adherence and persistence using administrative claims data	1	NA	4	ES	1
4. Evaluate the strengths and limitations of published pharmacoepidemiology studies	1	NA	4	ES	1
5. Compare costs and outcomes of therapeutic alternatives using various pharmacoeconomic analyses	1	NA	4	ES	1
6. Evaluate the strengths and limitations of published pharmacoeconomic studies	1	NA	4	ES	1

Course Assessment Methods

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

Grading Policy & Grade Calculation

Grades will be determined based on the 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. Examinations, RATs, and CATs may consist of but are not limited to, multiple-choice, select all that apply, matching, ordered-response, hot spot, fill-in-the-blank, short essay, and problem-based questions.

All examinations, tests, and assignments, including the final examination, may be **cumulative**. Students are responsible for the material presented during the prior courses. The grading scale for all course-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 the examination/assessment policy available in Part 2 of the syllabus, available as a PDF at <https://www.uttler.edu/pharmacy/academic-affairs/>

During the time the course is in progress, students who obtain less than 75% on any summative assessment or a total course grade of less than 75% during a particular semester will receive an academic alert from the course coordinator and the Office of Academic Affairs and be subject to weekly in-course remediation with the course instructor(s).

Standard Grade Calculation

Individual Components	95%
iRATs	3%
Individual Applications	2%
First Exam	25%
Second Exam	25%
Final Exam	40%
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 2024

Week	Day	Topic	Instructor	CLO	Disease State
1	8/29	Pharmacoepidemiology: Introduction to Pharmacoepidemiology	Shoair	1	\$20.99
2	9/5	Pharmacoepidemiology: Measures of Morbidity and Mortality	Shoair	1	\$20.99
3	9/12	Pharmacoepidemiology: Measures of Association Between Exposures and Outcomes	Shoair	1	\$20.99
4	9/19	Pharmacoepidemiology: Methodological Issues in Pharmacoepidemiology Studies	Shoair	2	\$20.99
5	9/26	Pharmacoepidemiology: Medication Utilization Patterns	Shoair	3	\$20.99
6	10/3	First Exam (Content covered from 8/29 through 9/26)			
7	10/10	Pharmacoepidemiology: Evaluation of the Pharmacoepidemiology Literature	Shoair	4	\$20.99
8	10/17	Pharmacoeconomics: Introduction to Pharmacoeconomics	Shoair	5	\$20.99
		Pharmacoeconomics: Measuring and Estimating Costs	Shoair	5	
9	10/24	Pharmacoeconomics: Evaluation of the Pharmacoeconomic Literature	Shoair	6	\$20.99
		Pharmacoeconomics: Cost-Minimization Analysis	Shoair	5, 6	
10	10/31	Second Exam (Content covered from 10/10 through 10/24)			
11	11/7	Pharmacoeconomics: Cost-Effectiveness Analysis	Shoair	5, 6	\$20.99
12	11/14	Pharmacoeconomics: Cost-Utility Analysis	Shoair	5, 6	\$20.99
13	11/21	Pharmacoeconomics: Cost-Benefit Analysis	Shoair	5, 6	\$20.99
	11/28	Thanksgiving Holiday: No Classes			
14	12/5	Pharmacoeconomics: Decision Analysis and Markov Models	Shoair	5, 6	\$20.99
15	12/12	Final Exam from 9:00 am – 12:00 pm (Content covered from 8/29 through 12/5)			
*Dates, topics, and assignments are subject to change. In the event of a change, you will be given ample notification of the changes.					