

**PHAR 7377: Pharmacoepidemiology and Pharmacoeconomics**  
**Fall 2025**

**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 covers the fundamental principles of pharmacoepidemiology and pharmacoeconomics and their relevance to pharmacy practice. Pharmacoepidemiology topics include basic epidemiologic principles, measures of disease frequency and association, and methodological issues in pharmacoepidemiology studies, such as bias and confounding. Students will learn to critically evaluate the pharmacoepidemiology literature. Special emphasis will be placed on applying these principles to population-based pharmacy practice, including measuring drug utilization and assessing the effects of drug use on treatment outcomes in large patient populations. Pharmacoeconomics topics include measuring and estimating healthcare costs, critically evaluating pharmacoeconomic studies, and applying various economic evaluations. Students will also learn how decision-analytic models like decision trees and Markov models inform healthcare decision-making.

**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

Phone number: (903) 565-6523

Email: oshoaib@uttyler.edu

Office hours: Tuesday and Thursday, 12:00 PM – 1:00 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.

**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*. 1<sup>st</sup> 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*. 3<sup>rd</sup> 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 class Canvas site. The site address is <http://uttyler.edu/canvas>

### 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 application exercises of content and concepts
5. Team-based assignments
  - a. Team readiness assessment tests (tRATs)
  - b. Team application exercises of content and concepts
  - c. Team presentation of content and concepts
6. Educational video clips (online and in class)
7. Journal Clubs

### Course Learning Outcomes (CLOs)

CLOs	PLO(s) Assessed for this CLO (1-12)	ACPE Appendix 1	NAPLEX (1.1-6.5)	Assessment Methods (1-13)
1. Calculate and interpret various measures of disease frequency and association	1, 2, 3	Biostatistics Research Design Pharmacoepidemiology	1.C.8, 1.F, 4.A	1
2. Identify and evaluate potential sources of bias and confounding in pharmacoepidemiology studies	1, 2, 3	Biostatistics Research Design Pharmacoepidemiology	1.E, 1.F	1
3. Calculate and interpret medication adherence and persistence using administrative claims data	1, 2, 3	Pharmacoepidemiology	1.C.8, 1.F	1
4. Evaluate the strengths and limitations of published pharmacoepidemiology studies	1, 2, 3	Biostatistics Research Design Pharmacoepidemiology	1.E, 1.F	1
5. Compare the costs and outcomes of therapeutic alternatives using various pharmacoeconomic analyses	1, 2, 3	Pharmacoeconomics	1.C.8	1
6. Evaluate the strengths and limitations of published pharmacoeconomic studies	1, 2, 3	Pharmacoeconomics	1.E, 1.F	1

### Course Summative Assessment Methods

	Assessment Method	Description
1	Question-based examination (ExamSoft-based)	Standard multiple-choice, select all that apply, matching, ordered-response, hot spot, fill-in-the-blank, and short essay questions

### Appropriate Use of Artificial Intelligence

AI is permitted only for specific assignments or situations, and appropriate acknowledgment is required. In this course, we may use AI tools (such as ChatGPT and Copilot) to examine how these tools may inform our exploration of the class topics. You will be notified as to when and how these tools will be used, along with guidance for attribution. Using AI tools outside these parameters violates UT Tyler's Honor Code, constitutes plagiarism, and will be treated as such.

### Grading Policy & Grade Calculation

Grades will be determined based on the evaluation of assignments, formative assessments (for learning), and summative assessments (for mastery). Final examinations are synonymous with summative assessments. Assessments may consist of but are not limited to multiple-choice, true/false, fill-in-the-blank, short-answer, essay, and problem-based questions. They may also include a variety of formats beyond the traditional question-based written examination, as each CLO may require different methods to determine student achievement.

Assignments, formative assessments, and summative assessments may be **cumulative**. Students are responsible for material presented during 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 [Part 2](#) of the syllabus.

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 Application Exercises	2%
First Exam	25%
Second Exam	25%
Final Exam	40%
Team Components	5%
tRATs	2%
Team Application Exercises	3%
TOTAL	100%

\*The final course letter grade will be as follows:

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

**PHAR 7377 Course Schedule<sup>#</sup>**

**Fall 2025**

Week	Day	Topic	Instructor	CLO
1	8/28	Pharmacoepidemiology: Introduction to Pharmacoepidemiology	Shoair	1
2	9/4	Pharmacoepidemiology: Measures of Morbidity and Mortality	Shoair	1
3	9/12**	Pharmacoepidemiology: Measures of Association	Shoair	1
4	9/18	Pharmacoepidemiology: Methodological Issues in Pharmacoepidemiology Studies	Shoair	2
5	9/25	Pharmacoepidemiology: Medication Utilization Patterns	Shoair	3
6	10/2	First Exam (Content covered from 8/28 through 9/25)		
7	10/9	Pharmacoepidemiology: Evaluation of the Pharmacoepidemiology Literature	Shoair	4
8	10/16	Pharmacoeconomics: Introduction to Pharmacoeconomics	Shoair	5
		Pharmacoeconomics: Measuring and Estimating Costs	Shoair	5
9	10/23	Pharmacoeconomics: Evaluation of the Pharmacoeconomic Literature	Shoair	6
		Pharmacoeconomics: Cost-Minimization Analysis	Shoair	5, 6
10	10/30	Second Exam (Content covered from 10/9 through 10/23)		
11	11/6	Pharmacoeconomics: Cost-Effectiveness Analysis	Shoair	5, 6
12	11/13	Pharmacoeconomics: Cost-Utility Analysis	Shoair	5, 6
13	11/20	Pharmacoeconomics: Cost-Benefit Analysis	Shoair	5, 6
	11/27	Thanksgiving Holiday: No Classes		
14	12/4	Pharmacoeconomics: Decision Analysis and Markov Models	Shoair	5, 6
15	12/11	Final Exam   9:00 AM – 12:00 PM (Content covered from 8/28 through 12/4)		
**This class is scheduled for 9/12/2025 from 2:00 PM to 5:00 PM, replacing the one originally planned for 9/11/2025.				
#Dates, topics, and assignments may be subject to change. You will receive advance notification of any changes.				