

**Independent Study**  
**Research Experience in Pain medicine**  
**PHAR 7299**

**Course Description**

Laboratory-based course in research methods to find natural compounds and their application.

**Additional Information on the Course**

This course introduces the students to different research methods used in the drug discovery field. Several techniques will be covered including bacterial culture, DNA purification, cell culture, molecular biology, protein expression in different biological systems, and biochemical assays. The course is focused on the application of natural compounds for the treatment, diagnosis, monitoring, and control of the biological system.

**Course Credit**

2 Credit Hour

**Pre-Requisite courses:** None

**Co-Requisite courses:** None

**Class Meeting Days, Time and Location:** TBD, 3<sup>rd</sup>-floor laboratory

**Course Coordinator**

Farah Deba, Ph.D.

WTB 345

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Office hours: TBD

Preferred method of contact: Email/ in-person

**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**

Course required materials are available through the Robert R. Muntz Library. These materials are available either online\* (<http://library.uttyler.edu/>) or on reserve. Other materials may be found online or provided by the course coordinator.

**Course Format**

The course includes the following activities:

1. Independent readings of research materials provided by the coordinator.
2. Lab work
3. Clearly writing the finding.

## Course Learning Outcomes (CLOs)

The central objective of this course is to introduce students to the concept of natural compounds and its design criteria and application in the medical field. The student will be able to understand the essential features of the compounds and biology that are converging to the interdisciplinary field.

1. Investigate information on natural compounds and how it is related to a broader spectrum of biomedical applications.
2. Develop skills and ability to work as an active participant in a research environment.
3. Develop skills to design a compounds to target multifarious biological environments.
4. Gain knowledge on evaluating the medicinal impact of the disease of interest.
5. Summarize results in the form of Research Presentation (oral or poster) and/or manuscript/report writing

## Course Assessment Methods

S. N.	Assessment Method	Description
1	Individual Project	Under the supervision of the course coordinator/instructor, the student will design an independent project in a pharmacy-related area of interest, including specific goals and an action plan.
2	Oral Presentation	At the end of the independent study, the student will give an oral presentation of their experience, including any pertinent research findings.
3	Poster Presentation	A possible alternative to assessment method 2.
4	Internship/Observation	Lab work observation and mentoring

## Grading Policy & Grade Calculation

Grades will be determined based on the evaluation of the project, including goals, plans, reflections, and presentations.

### Standard Grade Calculation\*

Plan, Goals & Week-Week Activities 70%  
Final Presentation of Project 30%

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

## Tentative Schedule

Week	TOPIC	CLO	Disease States
1	Orientation to Course & Project Determination	1	NA
2 - 14	Design and Execution of Project <ul style="list-style-type: none"><li>• Search the compounds via PubMed.</li><li>• Characterization of the compounds and their application</li></ul>	2-5	NA

	<ul style="list-style-type: none"> <li>• Cell culture: Neuronal cells and normal cells</li> <li>• Compounds Cellular Interaction Studies using Microscopic Techniques</li> <li>• Enzyme kinetics activity: Plate reader</li> </ul>		
15	Final Presentation of Project	6	NA