Syllabus: Applied Research in Community Pharmacy (#2217021563) Second Semester 2024/2025

COURSE INFORMATION	
Course Name: Applied Research in Community Pharmacy **Learning method:** face-to-face education **Semester: Second** **Department: Clinical Pharmacy & Pharmacy Practice** **Faculty: Pharmaceutical Sciences**	**Course Code: 2217021563** **Section: 1** **Core Curriculum: 2019 Study Plan** **JNQF Level: 7**
Day(s) and Time(s): Wednesday 8.30-11.30 **Classroom: 206** **Date prepared: December 2021** **Date updated: April 2025**	**Credit Hours:** 3 **Prerequisites: 131702368 (Community Pharmacy 1)**

COURSE DESCRIPTION

This course provides students with a comprehensive understanding of the role of research in community pharmacy practice. It introduces the principles and methodologies of conducting applied research, focusing on improving patient care, pharmacy services, and health outcomes in a community setting. Students will learn to critically evaluate research literature, design studies, collect and analyze data, and apply findings to real-world pharmacy practice. The course emphasizes evidence-based decision-making, quality improvement, and innovation in pharmacy services.

DELIVERY METHODS

The course is delivered through a combination of active learning strategies. These include:

- PowerPoint presentations and active classroom-based discussion.
- Writing project proposal.
- Data collection for research.
- Data analysis, results discussion and writing reports.
- Workshops and lectures by external speakers.
- Intervention form, case-based group discussions and teamwork.
- Students are encouraged to participate and be actively involved in the learning process.
- Relevant films and documentaries.

FACULTY INFORMATION

Name	**Dr Tahani Alwidyan**
Academic Title:	**Assistant Professors**
Office Location:	**Third Floor, room number 414**
Telephone Number:	**Extension: 3414**
Email Address:	**alwidyantahani@hu.edu.jo** **alwidyantahani@staff.hu.edu.jo**
Office Hours:	- **Monday: 8:30-10:00, Tuesday: 10:00-11:30, Wednesday: 2:30-4:00** ***Preferably, send an email to schedule an appointment.**

REFERENCES AND LEARNING RESOURCES

Required Textbook(s):.

1. Awaisu A, Mukhalalati B, Mohamed Ibrahim MI. Research Designs and Methodologies Related to Pharmacy Practice. Encyclopedia of Pharmacy Practice and Clinical Pharmacy. 2019;7-21. doi:10.1016/B978-0-12-812735-3.00602-6.

2. Communication Skills in Pharmacy Practice: A Practical Guide for Students and Practitioners, 6th ed 2012 by Tindall W et al.

3. Biostatistics: a foundation for analysis in the health sciences, 10th edition, 2013, Wayne Daniel, 2013, John Wiley and sons.

4. Essential Statistics for the Pharmaceutical Sciences, Second Edition, 2015, Philip Rowe , 2016 John Wiley & Sons.

Suggested Additional Resources:

5. Blenkinsopp A., Duerden M., Blenkinsopp J. ***Symptoms in the Pharmacy: A Guide to the Management of Common Illnesses*** (Wiley-Blackwell: 8 e 2018) ISBN-10: 9781119317968

Useful Web Resources:

6. The Pharmacists' Patient Care Process (PPCP). Available at https://jcpp.net/patient-care-process/

7. Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases. Hall E., Wodi A.P., Hamborsky J., et al., eds. 14th ed. Washington, D.C. Public Health Foundation, 2021. Available at https://www.cdc.gov/vaccines/pubs/pinkbook/index.html

8. Drugs and Lactation Database (LactMed) [Internet]. Bethesda (MD): National Library of Medicine (US); 2006-. Available from https://www.ncbi.nlm.nih.gov/books/NBK501922/?report=classic

9. Many drug information sources are now available on website: www.drugs.com www.Elm.Jo www.Patient.info.

STUDENT LEARNING OUTCOMES MATRIX

Alignment matrix between the course objectives and the **course** learning outcomes (CLOs) with the **program** learning outcomes (PLOs).

Core Curriculum LOs	B.Sc. Pharmacy Program LOs	Course Objectives (1-4 as below)								Assessment Method(s)
	Main Domain	**1**	**2**	**3**	**4**	**A**	**B**	**C**	**D**	
Foundational Knowledge	**Learner**					A.1 A.2				Student's proposal, and exams.
Essentials for Practice and Care	**Caregiver**									Student's proposal, and exams.
	Manager									
	Provider						B.1 B.2			
Approach to Practice and Care	**Creative Thinker and Problem-solver**								D.1	Student's proposal, and exams.
	Educator									
	Advocate									
	Communicato									

	r									
	Promoter							C.1 C.2		
Personal and Professional Development	**Self-aware**								D.2	Student's proposal, and exams.
	Leader									
	Innovator									
	Professional									
	Collaborator									
Pharmaceutical Product Expert	**Manufacturer**									

COURSE OBJECTIVES**

By the end of this course, students will be able to:

1. Formulate research questions relevant to community pharmacy practice.
2. Design and conduct studies to address practice-based problems.
3. Interpret and apply research findings to improve patient care and pharmacy operations.
4. Communicate research findings effectively to diverse audiences, including healthcare professionals and patients.

COURSE INTENDED LEARNING OUTCOMES** (CILOS)

A. Foundational Knowledge

A.1 Recognize various research designs and methodologies which align with evidence-based decision-making in community pharmacy practice.

A.2 Recognize ethical and legal issues in pharmacy research.

B. Essentials to Practice and Care

B.1 Apply evidence-based research to optimize medication therapy, enhance medication dispensing processes, and promote public health initiatives in community pharmacy practice.

B.2 Communicate research findings effectively with healthcare professionals to address practice-based challenges and communicate research outcomes to improve patient care.

C. Approach to Practice and Care

C.1 Apply research findings to optimize patient care and make evidence-based decisions that enhance health outcomes in community pharmacy practice.

C.2 Integrate research into practice to address community pharmacy challenges and contribute to the continuous improvement of pharmacy services and patient care.

D. Personal and Professional Development

D.1 Demonstrate the ability to independently identify knowledge gaps, manage time effectively, and engage in continuous learning, while adhering to ethical research practices and fostering personal growth in community pharmacy.

D.2 Develop strong teamwork, critical thinking, and communication skills to solve practice-based problems, effectively present research findings, and contribute to multidisciplinary projects in a professional setting.

ACADEMIC SUPPORT

It is The Hashemite University policy to provide educational opportunities that ensure fair, appropriate and reasonable accommodation to students who have disabilities that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to contact their instructor to ensure that their individual needs are met. The University through its Special Need section will exert all efforts to accommodate for individual's needs.

Special Needs Section:

Tel: **00962-5-3903333 Extension: 4209**
Location: **Students Affairs Deanship/ Department of Student Welfare Services**
Email: **amalomoush@hu.edu.jo**
amalomoush@staff.hu.edu.jo

COURSE REGULATIONS

Participation

Class participation and attendance are important elements of every student's learning experience at The Hashemite University, and the student is expected to attend all classes. A student should not miss more than 15% of the classes during a semester. *Those exceeding this limit of 15% will receive a failing grade regardless of their performance*. It is a student's responsibility to monitor the frequency of their own absences. **Attendance record begins on the first day of class irrespective of the period allotted to drop/add and late registration. It is a student's responsibility to sign-in; failure to do so will result in a non-attendance being recorded.**

In exceptional cases, the student, with the instructor's prior permission, could be exempted from attending a class provided that the number of such occasions does not exceed the limit allowed by the University. The instructor will determine the acceptability of an absence for being absent. A student who misses more than 25% of classes and has a valid excuse for being absent will be allowed to withdraw from the course.

On average, students need to spend 18 hrs of study, writing a proposal and preparation weekly. At the beginning of the weekly class, students should be on time and should not leave before the end of the class without an accepted excuse. **If the student missed a class, it is him/her responsibility to find out about any announcements or assignments they have missed.** For any clarification, students should communicate with their instructor at her posted office hours or by appointment. Students should listen well in the class, if anyone has a question, he/she should ask the instructor. Students can find the course material at the course Microsoft team/Model after the class.

Sharing of course materials is forbidden. No course material including, but not limited to, course outline, lecture hand-outs, videos, exams, and assignments may be shared online or with anyone outside the class. Any suspected unauthorized sharing of materials, will be reported to the university's Legal Affairs Office. If a student violates this restriction, it could lead to student misconduct procedures.

Plagiarism

Plagiarism is considered a serious academic offence and can result in your work losing marks or being failed. HU expects its students to adopt and abide by the highest standards of conduct in their interaction with their professors, peers, and the wider University community. As such, a student is expected not to engage in behaviours that compromise his/her own integrity as well as that of The Hashemite University.

Plagiarism includes the following examples, and it applies to all student assignments or submitted work:

- **Use of the others' work, ideas, images or words of someone else without his/her permission or reference to them.**
- **Use of someone else's wording, name, phrase, sentence, paragraph or essay without using quotation marks.**
- **Misrepresentation of the sources that were used.**

The instructor has the right to fail the coursework or deduct marks where plagiarism is detected.

Missed Assessments

In all cases of assessment, students who fails to attend an exam on the scheduled date without prior permission, and/or are unable to provide a medical note, will automatically receive a failure grade for this part of the assessment.

In cases where a student misses an assessment on account of a medical reason or with prior permission; in line with university regulations an incomplete grade for the specific assessment will be awarded and an alternative assessment or extension can be arranged.

Cheating

Cheating, academic disconduct, fabrication and plagiarism will not be tolerated, and the university policy will be applied. Cheating policy: The participation, the commitment of cheating will lead to applying all following penalties together:

- Failing the subject, he/she cheated at.
- Failing the other subjects taken in the same course.
- Not allowed to register for the next semester.
- The summer semester is not considered as a semester.

Student Complaints Policy

Students at The Hashemite University have the right to pursue complaints related to faculty, staff, and other students. The nature of the complaints may be either academic or non-academic. For more information about the policy and processes related to this policy, you may refer to the students' handbook.

COURSE ASSESSMENT

Course Calendar and Assessment

Students will be graded through the following means of assessment:

Course Assessment Plan						
Assessment	Grade Weighting	Deadline	CILOs			
			A	B	C	D
Writing a project proposal.	15%	~ 11th week	A	B	C	D
Data collection, data analysis and interpreting the results.	20%	~ 11th week	A	B	C	D
Student's reflection report	20%	~ 12th week	A	B	C	D
Poster presentation	15%	~ 13th &14th week	A	B	C	D
Work discussion by external committee	30 %	~ 15th /16th week	A	B	C	D

Description of the Course and Exams

✓ **<u>This course is described as follow:</u>**

- From the first to the fourth week, students will be expected to attend one day/week (3 hours) for theoretical lectures by their instructor at the university.
- Students will be introduced to some of the research designs and methods to be able to do the work.
- Registered students in the course should work in teams on a selected pharmacy practice-related research topic during the semester (1st month: proposal writing and reviewing, 2nd & 3rd: months data collection, 4th month: analyzing, discussing and writing results and may be- for some projects- writing the manuscript).
- From the fourth week to week thirteen, students will be expected to attend one day/week (3 hours) for discussions and evaluations with their instructor at the university. While, during the week they will be expected to prepare their proposals, collect data or analyze results to be discussed with the instructor.
- Meetings with the instructor are scheduled to be on predetermined days according to the available time.
- Students will be offered the following pharmacy practice research themes to select from them:

1. Cardiovascular health.
2. Diabetics health.
3. Geriatric health.
4. Pediatric health.
5. Women health.
6. OTC medications.

✓ **<u>The Final exam is described as follow:</u>**

- Test questions predominately come from material presented in the class and the class discussions.

- Semester exams may be conducted during the regularly scheduled weekly class period.

- Exams may consist of a combination of multiple choice, short answer, match, true and false, and/or descriptive questions.

- The final exam date is determined by the university.

- The final exams test students' theoretical knowledge of the topics and skills that were covered and discussed during the course.

- No make-up exams will be given. Only documented absences will be considered as per HU guidelines. Make-up exams may be different from regular exams in content and format.

- Grades are not negotiable and are awarded according to the following criteria:

Letter Grade	Description	Grade Points
A+	Excellent	4.00
A		3.75
A-		3.50
B+	Very Good	3.25
B		3.00
B-		2.75
C+	Good	2.50
C		2.25
C-		2.00
D+	Pass	1.75
D	Pass	1.50
F	Fail	0.00
I	Incomplete	-

WEEKLY LECTURE SCHEDULE AND CONTENT DISTRIBUTION

"Lecture hours and weeks are approximate and may change as needed"

Note: For the one lecture period per week (T or W), one lecture period covers 2 credit lecture hours (3 actual hours). The course content specifies chapters of the textbook that will be included in exams.

Week No.	No of Hours	CILOs	Week Topic	Notes	Delivery Method	Assessment Method
1	3		**Introduction to the course and to the applied research in pharmacy practice:** - Introduction about research. - Research Process - Identify research problem - Literature review - Hypothesis formulation			
2	3	A	**Introduction to the applied research in pharmacy practice:** - Research Design - Sampling Design - Writing methods section		PowerPoint presentations and active classroom-based discussion.	Final exam
3	3	A	**Introduction to the applied research in pharmacy practice:** - Data collection - Data analysis and hypothesis testing - Writing research report		PowerPoint presentations and active classroom-based discussion.	Final exam
4-12	3	A-D	Understanding community pharmacists' role and challenges in implementing smoking cessation programs: a qualitative study (methodology: semi-structured interviews).		Writing project proposal. + Data collection for research. + Data analysis, results discussion and writing reports.	Student's proposal and report. + Final exam
4-12	3	A-D	Effectiveness of clinical pharmacist interventions in		Writing project proposal.	Student's proposal and report.

			reducing polypharmacy-related risks in community settings: a controlled before-after study (methodology: controlled before-after study).		+ Data collection for research. + Data analysis, results discussion and writing reports.	+ Final exam
4-12	3	A-D	Improving community pharmacists' knowledge and attitudes on antibiotic stewardship: a cluster-controlled educational intervention study (methodology: cluster-controlled trial with pre-post assessment).		Writing project proposal. + Data collection for research. + Data analysis, results discussion and writing reports.	Student's proposal and report. + Final exam
4-12	3	A-D	Patient perceptions and satisfaction with pharmacist-led medication reviews (methodology: survey).		Writing project proposal. + Data collection for research. + Data analysis, results discussion and writing reports.	Student's proposal and report. + Final exam
4-12	3	A-D	The role of community pharmacists in deprescribing unnecessary medications: a prospective interventional study (methodology: prospective interventional).		Writing project proposal. + Data collection for research. + Data analysis, results discussion and writing reports.	Student's proposal and report. + Final exam

13-14	Poster presentation
15-16	Final exam as per HU calendar

Course outline created by Dr. Enaam Al-Momany in December 2021 and updated by Dr. Tahani Alwidyan in April 2025.