

Department: clinical pharmacy

Zarqa University  
Faculty of pharmacy

Prerequisite: None

Course Title: Seminar

Instructor: Dr. Hana Abu Sawan

Course #: 1101706

Lecture's time: Monday 9 – 10

Office Hours: Sun, Tue, Thu: 10-11

Semester: 1<sup>st</sup> 2020/2021



### Course description:

The purpose of this course is to introduce students to the academic research process and exposes students to strategies of problem-solving. It trains students on critical thinking, research, writing, and documentation. Also student will learn how to search the available literature concerning specific topics in pharmaceutical sciences. During the course, students will be assigned to come up with a research proposal, including a key scientific question, and they will conduct research into the literature related to their scientific question, and they should develop a research design that addresses this question and provide more knowledge to this field. The student required to write a scientific report and to present the topic orally using the available multimedia techniques.

### Competencies:

Competencies	
1.1 (Learner)	3.4 (Collaborator)
3.1 (problem solver)	3.6 (Communicator)
3.2 (Educator)	4.4 (Professional)

### Aims of the course:

1. Introduces students to the academic research process and exposes students to strategies of problem-solving
2. Train students on critical thinking, research, writing, and documentation.
3. Teaching students how to search the available literature concerning specific topics in pharmaceutical sciences.
4. Equip students with the skills needed to understand research data from a study design point of view.



5. Write a scientific report related to the Master's thesis, and to present the topic orally using the available multimedia techniques.
6. Provide students the ability to discuss and present their research ideas related to the Master's thesis.

## **Intended Learning Outcomes (ILOs):**

### **A. Knowledge and Understanding**

- A1. A student is expected to know how to search the available literature concerning specific topics in pharmaceutical sciences.
- A2. To provide students with the knowledge on how to conduct their study and the appropriate study design required to complete the study.

### **B. Subject-specific skills**

- B1. A student is expected to identify criteria about the different literature searching method.
- B2. Learn how to interpret and communicate their research ideas.
- B3. Develop the ability to design the research question.
- B4. Students are expected to start constructing; writing and presenting their data sets their thesis report form.

### **C. Critical-Thinking Skills**

- C1. A student is expected to read research papers similar to their research ideas and critically analyse the rationale of the study (journal club).
- C2. Students expected to improve their problem-solving skills through a group discussion designed in the journal club sessions.

### **D. General and Transferable Skills** (other skills relevant to employability and personal development)

- D1. Enable students to present their data in a scientific thesis format.
- D2. Enable students to collect and interpret information from medical research papers.
- D3. Enable students to write their data in a scientific thesis format.



## Teaching strategies in course outline:

Teaching strategies in the course outline	
<input checked="" type="checkbox"/> Lectures	<input type="checkbox"/> Field visits
<input checked="" type="checkbox"/> Online Lectures	<input type="checkbox"/> Roleplay
<input type="checkbox"/> Practical training / laboratory	<input checked="" type="checkbox"/> Presentation
<input type="checkbox"/> Seminar / Workshop	<input type="checkbox"/> Quizzes
<input checked="" type="checkbox"/> Moodle	<input checked="" type="checkbox"/> Online resources
<input checked="" type="checkbox"/> Case study	<input checked="" type="checkbox"/> Team-based learning
<input type="checkbox"/> Flipped classroom	<input type="checkbox"/> Social related activities (chat)
<input type="checkbox"/> Simulation	<input checked="" type="checkbox"/> Other assignments and homework
<input type="checkbox"/> Others :	

## Course Contents and Schedule:

Week	Topics	Teaching Procedure	specific ILOs in addition to earlier ILOs
W1	<b>Introduction to the research process and way of thinking.</b>	Powerpoint presentations and group discussion	<ul style="list-style-type: none"> <li>• Review syllabus</li> <li>• Why do we need to do research?</li> <li>• Research is an integral part of your practice.</li> <li>• The research process, characteristics, and requirements.</li> <li>• Research paradigm and types of research.</li> </ul>
W2	<b>Journal club 1 (Reviewing the literature)</b>	Powerpoint presentations and group discussion	<ul style="list-style-type: none"> <li>• Bringing clarity and focus on the student research problem.</li> <li>• Improving student research methodology.</li> <li>• Broadening student knowledge base in your research area.</li> <li>• Enabling the student to contextualise your findings.</li> <li>• Teach students on how to review the literature.</li> </ul>



W3	<b>Journal club 2 (Formulating a research problem)</b>	Powerpoint presentations and group discussion	<ul style="list-style-type: none"> <li>• The importance of formulating a research problem.</li> <li>• Consideration in formulating the research problem.</li> <li>• Steps in formulating the research problem.</li> </ul>
W4-5	<b>Conceptualising the research design</b>	Powerpoint presentations and group discussion	<ul style="list-style-type: none"> <li>• The function of research design.</li> <li>• Selecting a study design.</li> </ul>
W6	<b>Bias in research Types of bias Effect of bias Preventive steps</b>	Powerpoint presentations and group discussion	<ul style="list-style-type: none"> <li>• <b>Language bias</b></li> <li>• <b>Biases of rhetoric</b></li> <li>• <b>Chronological bias</b></li> <li>• <b>Prevalence-incidence (Neyman) bias</b></li> <li>• <b>All's well literature bias</b></li> <li>• <b>Admission rate bias</b></li> <li>• <b>Apprehension bias</b></li> <li>• <b>Wrong sample size bias</b></li> <li>• <b>Previous opinion bias</b></li> <li>• <b>Starting time bias</b></li> </ul>
W7	<b>Bias in research Types of bias Effect of bias Preventive steps</b>	Powerpoint presentations and group discussion	<ul style="list-style-type: none"> <li>• <b>unacceptable disease bias</b></li> <li>• <b>mimicry bias</b></li> <li>• <b>lack of blinding bias</b></li> <li>• <b>substitution game bias</b></li> <li>• <b>informed presence bias</b></li> <li>• <b>Information bias</b></li> <li>• <b>Misclassification bias.</b></li> <li>• <b>Popularity bias .</b></li> <li>• <b>Differential referance bias.</b></li> <li>• <b>Insensitive measure bias .</b></li> </ul>
W8	<b>Bias in research Types of bias Effect of bias Preventive steps</b>	Powerpoint presentations and group discussion	<ul style="list-style-type: none"> <li>• <b>Observer bias</b></li> <li>• <b>Verification bias</b></li> <li>• <b>Positive result bias</b></li> <li>• <b>Publication bias</b></li> <li>• <b>Outcome reporting bias</b></li> <li>• <b>Attrition bias</b></li> <li>• <b>Availability bias</b></li> <li>• <b>Performance bias</b></li> <li>• <b>Reporting bias</b></li> </ul>



			<ul style="list-style-type: none"> <li>• Compliance bias</li> </ul>
<b>W9</b>	<b>Midterm exam</b>		
W10	<b>Bias in research</b> <b>Types of bias</b> <b>Effect of bias</b> <b>Preventive steps</b>	Powerpoint presentations Discussion & case study	<ul style="list-style-type: none"> <li>• Ascertainment bias</li> <li>• Volunteer bias</li> <li>• Spectrum bias</li> <li>• Differential Reference bias</li> <li>• Perception bias</li> <li>• Centripetal bias</li> <li>• Industry Sponsorship Bias</li> <li>• Hot stuff bias</li> <li>• Hawthorne effect</li> <li>• Spin Bias</li> </ul>
W11	<b>Bias in research</b> <b>Types of bias</b> <b>Effect of bias</b> <b>Preventive steps</b>	Powerpoint presentations Discussion & case study	<ul style="list-style-type: none"> <li>• Unmasking (detection signal) bias</li> <li>• Diagnostic access bias</li> <li>• Diagnostic suspicion bias</li> <li>• Immortal time bias</li> <li>• Referral filter bias</li> </ul>
W12	<b>Journal club</b>	Powerpoint presentations Discussion & case study	<ul style="list-style-type: none"> <li>• Student presentations on selected topics</li> </ul>
W13	<b>Journal club</b>	Powerpoint presentations Discussion & case study	<ul style="list-style-type: none"> <li>• Student presentations on selected topics</li> </ul>
W14	<b>Journal club</b>	Powerpoint presentations Discussion & case study	<ul style="list-style-type: none"> <li>• Student presentations on selected topics</li> </ul>
<b>W15</b>	<b>Final exam</b>		



## References:

- **Main textbook:**
- RESEARCH METHODOLOGY a step-by-step guide for beginners  
Ranjit Kumar, SAGE Publications Ltd, 3<sup>rd</sup> edition, 2011.

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Assessment method	Assessment method	Date	Grade
Class activity	Journal Club (Group discussion, presentation, and report)	W12-14	25%
Mid exam	examination	W10	25%
Final exam	Final written exam	W15	50%

