

## University of 21 September for Applied and Medical Sciences

### Faculty of Clinical Pharmacy

### Program of Master in Clinical Pharmacy

### Course Specification of Evidence-Based Medicine

Course No. (CPh108)

**2021/2022**

Prepared By

1

Dr. Ali Al kaf

Reviewed By

Dr. Ali Alyahawi

Dean of Faculty

Dr.

I. Course Identification and General Information:					
1	Course Title:	Evidence-Based Medicine			
2	Course Code & Number:	CPh108			
3	Credit hours:	C.H			TOTAL
		Th.	Seminar	Pr	
		2	-	-	2
4	Study level/ semester at which this course is offered:	-			
5	Pre –requisite (if any):	Research Methodology and Biostatistics			
6	Co –requisite (if any):	None			
7	Program (s) in which the course is offered:	Master in clinical Pharmacy			
8	Language of teaching the course:	English			
9	Study System	Semester-based system			
10	Mode of delivery:	Regular			
11	Location of teaching the course:	Faculty of Clinical Pharmacy			
12	Prepared By:	Prof. Dr. Alkaf			
13	Date of Approval				

II. Course Description:
<p>This course will enable students to identify, obtain and utilize published medical literature to be used in patient care, research projects and lifelong learning. This course is designed to provide a balanced approach to the principles of clinical research and statistics for evaluating pharmacy literature to implement evidence-based pharmacotherapy. This requires a comprehensive understanding of the principles and practice of drug literature evaluation with a strong grounding in research design and statistical methods.</p>

Prepared By

2

Dr. Ali Al kaf

Reviewed By

Dr. Ali Alyahawi

Dean of Faculty

Dr.

III.	Course Intended learning outcomes (CILOs):	Referenced PILOs
a.1	Describe differences among primary, secondary, and tertiary literature and the role of drug literature evaluation in establishing a good foundation for a pharmacy professional.	A3
a.2	Discuss the basic principles in statistics and different types of clinical trials	A3
b.1	Conduct efficient searches of clinical evidence using the most appropriate terms and other tools	B2
b.2	Correctly use the statistics analyses methods and evaluate results from statistical analyses reported in the medical literature with a focus on common statistical methods.	B1, B2
c.1	Critically appraise the most common types of clinical research papers	C1,C3
c.2	Apply the evidence to individual patients.	C1, C2, C3
d.1	Search for information from appropriate sources of primary literature to verify that patient therapy is based on best scientific evidence available	D1
d.2	Communicate information to healthcare providers, patients and caregivers in a timely and effective manner.	D2

<b>(A) Alignment Course Intended Learning Outcomes of Knowledge and Understanding to Teaching Strategies and Assessment Strategies:</b>		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
<b>a1-</b> Describe differences among primary, secondary, and tertiary literature and the role of drug literature evaluation in establishing a good foundation for a pharmacy professional.	- Lectures - Discussion - Seminar	Exam Assignment
<b>a2-</b> Discuss the basic principles in statistics and different types of clinical trials.	- Lectures - Discussion - Assignments - Seminar	Exam Assignment

Prepared By

3

Dr. Ali Al kaf

Reviewed By

Dr. Ali Alyahawi

Dean of Faculty

Dr.

<b>(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:</b>		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
<b>b1-</b> Conduct efficient searches of clinical evidence using the most appropriate terms and other tools.	<ul style="list-style-type: none"> <li>- Lectures</li> <li>- Discussion</li> <li>- Assignments</li> <li>- Seminar</li> <li>- Cases presentation</li> </ul>	Exam Assignment
<b>b2-</b> Correctly use the statistics analyses methods and evaluate results from statistical analyses reported in the medical literature with a focus on common statistical methods.	<ul style="list-style-type: none"> <li>- Lectures</li> <li>- Discussion</li> <li>- Assignments</li> <li>- Seminar</li> <li>- Cases presentation</li> </ul>	Exam Assignment

<b>( C) Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:</b>		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
<b>C1-</b> Critically appraise the most common types of clinical research papers.	<ul style="list-style-type: none"> <li>- Lectures</li> <li>- Discussion</li> <li>- Assignments</li> <li>- Seminar</li> <li>- Cases presentation</li> </ul>	Exam Assignment
<b>C2-</b> Apply the evidence to individual patients.	<ul style="list-style-type: none"> <li>- Seminar</li> <li>- Cases presentation</li> </ul>	Exam Assignment

<b>(D) Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:</b>		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
<b>d1-</b> Search for information from appropriate sources of	<ul style="list-style-type: none"> <li>- Lectures</li> </ul>	Exam

Prepared By

4

Dr. Ali Al kaf

Reviewed By

Dr. Ali Alyahawi

Dean of Faculty

Dr.

primary literature to verify that patient therapy is based on best scientific evidence available	- Discussion - Assignments - Seminar - Cases presentation	Assignment
d2-Communicate information to healthcare providers, patients and caregivers in a timely and effective manner.	- Discussion - Seminar - Cases presentation	Presentation

IV. Course Content:					
A – Theoretical Aspect:					
Order	Units/Topics List	Learning Outcomes	Sub Topics List	Number of Weeks	contact hours
1	The principles of scientific research	a 1, a2, b1, b2, d1	- Overview of Drug Information Resources	1	1
			- Internet Sources of DI		
			- Evaluating DI Resources		
			- Accessing Quality DI Resources		
			- Research Design and Methods		
- Principles of Evidence-Based Medicine (EBM)	1	1			
- Evaluating Randomized Controlled Trials	2	2			
- Evaluating Clinical Literature: An Overview	1	1			
2	Midterm Exam	a 1, a2, b1, b2, d1		1	2
3	Statistical Principles and Data Analysis	a 2, b1, b2, c2	- Basic Statistical Concepts	2	2
			- Bivariate Analysis and Comparing Groups	1	1
			- Logistic Regression and Survival Analysis	1	1
			- Sample Size and Power Analysis	1	1
4	Systematic Review and Meta-Analysis	a 1, a2, b1, b2, c1, c2, d1, d2	- Evaluation of Systematic Review and Meta-Analysis	1	1

Prepared By

5

Reviewed By

Dean of Faculty

Dr. Ali Al kaf

Dr. Ali Alyahawi

Dr.

5	Applying Drug Literature to Patient Care	a 1, a2, b1, b2, c1, c2, d1, d2	- Application of evidence for selected cases	1	1
6	Final exam	a 1, a2, b1, b2, c1, c2, d1		1	2
Number of Weeks /and Units Per Semester				16	18

B - Practical Aspect: (if any)				
Order	Tasks/ Experiments	Number of Weeks	contact hours	Learning Outcomes
1	Nil			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
Number of Weeks /and Units Per Semester				

V. Teaching strategies of the course:
<ul style="list-style-type: none"> <li>- Lectures</li> <li>- Discussion</li> <li>- Assignments</li> <li>- Seminar</li> <li>- Cases presentation</li> </ul>

Prepared By

6

Dr. Ali Al kaf

Reviewed By

Dr. Ali Alyahawi

Dean of Faculty

Dr.



VI. Assignments:				
No	Assignments	Aligned CILOs(symbols)	Week Due	Mark
1	Assignment 1: Describe the types of research designs	a 1, a2	Week 6	5
2	Assignment 1 Apply drug literature for managing selected case of DM type 2.	a 1, a2, b1, b2, c1, c2, d1	Week 14	5
<b>Total</b>				10

VII. Schedule of Assessment Tasks for Students During the Semester:					
No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Assignments and attendance	Week 1-14	20	20%	a 1, a2, b1, b2, c1, c2, d1
2	Midterm Exam	Week 8	20	20%	a 1, a2, b1, b2, d1
3	Final Exam	Week 16	60	60%	a 1, a2, b1, b2, c1, c2, d1
<b>Total</b>			100	100%	

VIII. Learning Resources:	
<ul style="list-style-type: none"> <li>Written in the following order: ( Author - Year of publication - Title - Edition - Place of publication - Publisher).</li> </ul>	
<b>1- Required Textbook(s) ( maximum two ).</b>	
	<ol style="list-style-type: none"> <li>1. Arlene Fink, 2013. How to Conduct Surveys: A Step-by-Step Guide, 5th, 978-1452203874</li> <li>2. Beth Dawson, Robert G. Trapp, 2004. Basic &amp; Clinical Biostatistics, 4<sup>th</sup>, 978-0071410175</li> </ol>
<b>2- Essential References.</b>	
	<ol style="list-style-type: none"> <li>1. Rajender R. Aparasu and John P. Bentley, 2014. Principles of Research Design And Literature Evaluation, 1<sup>st</sup>. 978-1284038798</li> <li>2. Gordon Guyatt; Drummond Rennie; Maureen O. Meade; Deborah J. Cook. 2014, Users' Guides to the Medical Literature: A Manual for Evidence-Based Clinical Practice, 3<sup>rd</sup>, 978-0071790710</li> <li>3. Gordon Guyatt; Drummond Rennie; Maureen O. Meade; Deborah J. Cook, 2015. Users' Guide the Medical Literature: Essentials of Evidence-Based Clinical Practice 3<sup>rd</sup>, 978-007179415</li> <li>4. Trisha Greenhalgh, 2014. How to Read a Paper: The Basics of Evidence-Based Medicine, 5<sup>th</sup></li> </ol>

Prepared By

7

Reviewed By

Dean of Faculty

Dr. Ali Al kaf

Dr. Ali Alyahawi

Dr.



	1118800966 5. Robert Ed Diczno, 2011. Clinical Pharmacist's Guide to Biostatistics and Literature Evaluation 978-1932658781
<b>3- Electronic Materials and Web Sites etc.</b>	
	- Up-to-date - <a href="https://druginfo.nlm.nih.gov/drugportal/drugportal.jsp">https://druginfo.nlm.nih.gov/drugportal/drugportal.jsp</a> -

<b>I. Course Policies: (Based on the Uniform Students' Bylaw (2007))</b>	
1	<b>Class Attendance:</b> Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	<b>Tardiness:</b> A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
3	<b>Exam Attendance/Punctuality:</b> No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	<b>Assignments &amp; Projects:</b> Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	<b>Cheating:</b> Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	<b>Forgery and Impersonation:</b> Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	<b>Other policies:</b> The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.

Prepared By

8

Dr. Ali Al kaf

Reviewed By

Dr. Ali Alyahawi

Dean of Faculty

Dr.

University of 21 September for Applied and Medical Sciences

**Faculty of Clinical Pharmacy**

**Program of Master in Clinical Pharmacy**

**Course Specification of Evidence-Based Medicine**

Course No (CPh108)

**2021/2022**

Prepared By

9

Dr. Ali Al kaf

Reviewed By

Dr. Ali Alyahawi

Dean of Faculty

Dr.

## II. - Information about Faculty Member Responsible for the Course:

<b>Name of Faculty Member</b>	Dr. Ali Alkaf	<b>Office Hours</b>					
<b>Location &amp; Telephone No.</b>		<b>SAT</b>	<b>SUN</b>	<b>MON</b>	<b>TUE</b>	<b>WED</b>	<b>THU</b>
<b>E-mail</b>	Alialkaf21@gmail.com						

## III. Course Identification and General Information:

<b>1</b>	<b>Course Title:</b>	Evidence-Based Medicine				
<b>2</b>	<b>Course Code &amp; Number:</b>	CPh108				
<b>3</b>	<b>Credit hours:</b>	<b>C.H</b>				<b>TOTAL</b>
		<b>Th.</b>	<b>Seminar</b>	<b>Pr</b>	<b>Tr.</b>	
		2	--		--	2
<b>4</b>	<b>Study level/ semester at which this course is offered:</b>	-				
<b>5</b>	<b>Pre –requisite (if any):</b>	Research Methodology and Biostatistics				
<b>6</b>	<b>Co –requisite (if any):</b>	None				
<b>7</b>	<b>Program (s) in which the course is offered:</b>	Master in Clinical Pharmacy				
<b>8</b>	<b>Language of teaching the course:</b>	English				
<b>9</b>	<b>Study System</b>	Semester-based system				
<b>10</b>	<b>Mode of delivery:</b>	Regular-Full Time				
<b>11</b>	<b>Location of teaching the course:</b>	Faculty of Clinical Pharmacy				

## IV. Course Description:

The course will enable students to identify, obtain and utilize published medical literature to be used in patient care, research projects and lifelong learning. This course is designed to provide a balanced approach to the principles of clinical research and statistics for evaluating pharmacy literature to implement evidence-based pharmacotherapy. This requires a comprehensive understanding of the principles and practice of drug literature evaluation with a strong grounding in research design and statistical methods.

Prepared By

10

Dr. Ali Al kaf

Reviewed By

Dr. Ali Alyahawi

Dean of Faculty

Dr.

<b>V. Course Intended learning outcomes (CILOs)</b> Upon completion of this Course, student will be able to:	
a.1	Describe differences among primary, secondary, and tertiary literature and the role of drug literature evaluation in establishing a good foundation for a pharmacy professional.
a.2	Discuss the basic principles in statistics and different types of clinical trials
b.1	Conduct efficient searches of clinical evidence using the most appropriate terms and other tools
b.2	Correctly use the statistics analyses methods and evaluate results from statistical analyses reported in the medical literature with a focus on common statistical methods.
c.1	Critically appraise the most common types of clinical research papers
c.2	Apply the evidence to individual patients.
d.1	Search for information from appropriate sources of primary literature to verify that patient therapy is based on best scientific evidence available
d.2	Communicate information to healthcare providers, patients and caregivers in a timely and effective manner.

<b>VI. Course Content:</b>				
<b>A – Theoretical Aspect:</b>				
Order	Units/Topics List	Sub Topics List	Week Due	Contact Hours
1	The principles of scientific research	- Overview of Drug Information Resources	1	1
		- Internet Sources of DI		
		- Evaluating DI Resources	2	2
		- Accessing Quality DI Resources		
		- Research Design and Methods		
- Principles of Evidence-Based Medicine (EBM)	1	1		
- Evaluating Randomized Controlled Trials	2	2		
- Evaluating Clinical Literature: An Overview	1	1		
2	<b>Midterm Exam</b>		1	2
		- Basic Statistical Concepts	2	2

Prepared By

11

Dr. Ali Al kaf

Reviewed By

Dr. Ali Alyahawi

Dean of Faculty

Dr.

3	Statistical Principles and Data Analysis	- Bivariate Analysis and Comparing Groups	1	1
		- Logistic Regression and Survival Analysis	1	1
		- Sample Size and Power Analysis	1	1
4	Systematic Review and Meta-Analysis	- Evaluation of Systematic Review and Meta-Analysis	1	1
5	Applying Drug Literature to Patient Care	- Application of evidence for selected cases	1	1
6	<b>Final exam</b>		1	2
<b>Number of Weeks /and Units Per Semester</b>			<b>16</b>	<b>18</b>

<b>B - Practical Aspect: (if any)</b>			
Order	Tasks/ Experiments	Week Due	Contact Hours
1	Nil		
2			
3			
4			
5			
6			
7			
8			
<b>Number of Weeks /and Units Per Semester</b>		<b>14</b>	<b>28</b>

<b>VII. Teaching strategies of the course:</b>
<ul style="list-style-type: none"> <li>- Lectures</li> <li>- Discussion</li> <li>- Assignments</li> <li>- Seminar</li> <li>- Cases presentation</li> </ul>

Prepared By

12

Dr. Ali Al kaf

Reviewed By

Dr. Ali Alyahawi

Dean of Faculty

Dr.

### VIII. Assignments:

No	Assignments	Week Due	Mark
1	Assignment 1: Describe the types of research designs	Week 6	5
2	Assignment 1 Apply drug literature for managing selected case of DM type 2.	Week 14	5
<b>Total</b>			10

### IX. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
1	Assignments and attendance	Week 1-14	20	20%
2	Midterm Exam	Week 8	20	20%
3	Final Exam	Week 16	60	60%
<b>Total</b>			100	100%

### IX. Learning Resources:

- Written in the following order: ( Author - Year of publication - Title - Edition - Place of publication - Publisher).

#### 1- Required Textbook(s) ( maximum two ).

3. Arlene Fink, 2013. How to Conduct Surveys: A Step-by-Step Guide, 5th, 978-1452203874
4. Beth Dawson, Robert G. Trapp, 2004. Basic & Clinical Biostatistics, 4<sup>th</sup>, 978-0071410175

#### 2- Essential References.

6. Rajender R. Aparasu and John P. Bentley, 2014. Principles of Research Design And Literature Evaluation, 1<sup>st</sup>. 978-1284038798
7. Gordon Guyatt; Drummond Rennie; Maureen O. Meade; Deborah J. Cook. 2014, Users' Guides to the Medical Literature: A Manual for Evidence-Based Clinical Practice, 3<sup>rd</sup>, 978-0071790710
8. Gordon Guyatt; Drummond Rennie; Maureen O. Meade; Deborah J. Cook, 2015. Users' Guide the Medical Literature: Essentials of Evidence-Based Clinical Practice 3<sup>rd</sup>, 978-007179415
9. Trisha Greenhalgh, 2014. How to Read a Paper: The Basics of Evidence-Based Medicine, 5<sup>th</sup> 1118800966
10. Robert Ed Dicenzo, 2011. Clinical Pharmacist's Guide to Biostatistics and Literature Evaluation 978-1932658781

#### 3- Electronic Materials and Web Sites etc.

- Up-to-date

Prepared By

13

Dr. Ali Al kaf

Reviewed By

Dr. Ali Alyahawi

Dean of Faculty

Dr.

- <https://druginfo.nlm.nih.gov/drugportal/drugportal.jsp>

### X. Course Policies: (Based on the Uniform Students' Bylaw (2007))

1	<b>Class Attendance:</b> Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	<b>Tardiness:</b> A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
3	<b>Exam Attendance/Punctuality:</b> No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	<b>Assignments &amp; Projects:</b> Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	<b>Cheating:</b> Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	<b>Forgery and Impersonation:</b> Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	<b>Other policies:</b> The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.

Prepared By

14

Dr. Ali Al kaf

Reviewed By

Dr. Ali Alyahawi

Dean of Faculty

Dr.