The University of Jordan

Accreditation & Quality Assurance Center

COURSE Syllabus
### Course Title

Evidence Based Medicine Pharmaceutical Literature Evaluation

### Course Number

1203518

### Credit Hours (theory, practical)

2 (theory)

### Contact Hours (theory, practical)

2 (theory)

### Prerequisites/corequisites

Prerequisite: 1203364 (Pharmacology II)

### Program title

PharmD

### Program code


### Awarding institution

The University of Jordan

### Faculty

Pharmacy

### Department

Biopharmaceutics & Clinical Pharmacy

### Level of course

undergraduate

### Year of study and semester(s)

Spring semester of the 5th year

### Final Qualification

PharmD

### Other department(s) involved in teaching the course

None

### Language of Instruction

English

### Date of production/revision

14 February 2016

### Course Coordinator:

Office numbers, office hours, phone numbers, and email addresses should be listed.

Prof. Mayyada Wazaify, PhD.

[http://eacademic.ju.edu.jo/m.wazaify/default.aspx](http://eacademic.ju.edu.jo/m.wazaify/default.aspx)

Office 108  
Phone 5 355 000, Ext. 23554.  
E-mail: m.wazaify@ju.edu.jo  
Office hours to be announced

### Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.

Dr. Maysa Al-Suyagh, PhD.

Office 106.  
Phone 5 355 000, Ext. 23337.  
E-mail: m.suyagh@ju.edu.jo  
Office hours to be announced

### Course Description:

As stated in the approved study plan.

This course will enable students to identify, obtain and utilize published medical literature to be used in patient care, research projects and lifelong learning. Emphasis on data searching and retrieval using computer database and written material

With the increasing emphasis on evidence-based practices, there is a greater need for pharmacists to understand clinical research, evaluate scientific findings, and translate evidence to support patient-care decisions. This requires a comprehensive understanding of the principles and practice of drug literature evaluation with a strong grounding in research design and statistical methods.
19. Course aims and outcomes:

**A- Aims:**

This course is designed for professional pharmacy (PharmD) students and it aims to provide a balanced approach to the principles of clinical research and statistics for evaluating pharmacy literature to implement evidence-based pharmacotherapy.

The course is broadly divided into three parts to meet the following objectives:

- Achieve an understanding of the principles of scientific research with an emphasis on clinical research designs ranging from randomized controlled trials to case reports.
- Provide the foundation necessary to understand statistics and to critically evaluate results from statistical analyses reported in the medical literature with a focus on common statistical methods.
- Provide the knowledge of the principles of evidence-based medicine, drug literature sources and evaluation techniques, and application of evidence to patient care.

**B- Course Intended Learning Outcomes (ILOs):**

Successful completion of the course should lead to the following outcomes:

**A. Knowledge and Understanding:** Student is expected to understand:

A1. basic principles in evidence based medicine
A2. basic principles in statistics
A3. different types of clinical trials

**B. Intellectual Analytical and Cognitive Skills:** Student is expected to be able to perform the following:

B1. calculation of treatment effect and its confidence interval
B2. assessment of heterogeneity
B3. assessment of publication bias
B4. assessment of sensitivity of meta-analysis
B5. construction of a forest plot

**C. Subject-Specific Skills:** Student is expected to

C1. formulate a clinical question on PICO(TT) format
C2. look for the best evidence
C3. critically appraise the evidence

**D. Transferable Key Skills:** Students is expected to

D1. access and utilization of online-resources on EBM
D2. access and utilization of primary sources of evidence

**ILOs: Learning and Evaluation Methods**

<table>
<thead>
<tr>
<th>ILO/s</th>
<th>Learning Methods</th>
<th>Evaluation Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ILOs</td>
<td>Lectures and Discussions, Homework and Assignments</td>
<td>Exam, Quiz and assignment</td>
</tr>
</tbody>
</table>

**Competencies achieved at the end of this course:**

- Provide patient centred care.
- Identify appropriate sources of information and evaluate primary literature to synthesize answers to patient-specific questions and to Verify that patient therapy is based on best scientific evidence available
- Develop interpersonal and communication skills
- Communicate information to physicians, other healthcare providers, patients and caregivers in a timely and effective manner.
### 20. Topic Outline and Schedule:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Week</th>
<th>Instructor</th>
<th>Achieved ILOs</th>
<th>Evaluation Methods</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Introduction</td>
<td>1</td>
<td>Dr. Maysa Suyagh</td>
<td>A1-3, B1, C1</td>
<td>Exams, Quizzes</td>
<td>Specified in each lecture. General references provided below</td>
</tr>
<tr>
<td>Principles of Clinical Research and an overview about EBM</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Research Design and Methods</td>
<td>2</td>
<td>Dr. Maysa Suyagh</td>
<td>A1-3, B1, C1</td>
<td>Exams, Quizzes</td>
<td>Specified in each lecture. General references provided below</td>
</tr>
<tr>
<td>Randomized Controlled Trials</td>
<td>3</td>
<td>Dr. Maysa Suyagh</td>
<td>A1-3, B1, C1</td>
<td>Exams, Quizzes</td>
<td>Specified in each lecture. General references provided below</td>
</tr>
<tr>
<td>Principles of Evidence-Based Medicine</td>
<td>4</td>
<td>Dr. Maysa Suyagh</td>
<td>A1-3, B1, C1</td>
<td>Exams, Quizzes</td>
<td>Specified in each lecture. General references provided below</td>
</tr>
<tr>
<td>Introduction to Drug Literature</td>
<td>5</td>
<td>Dr. Maysa Suyagh</td>
<td>A1-3, B1, C1</td>
<td>Exams, Quizzes</td>
<td>Specified in each lecture. General references provided below</td>
</tr>
<tr>
<td>Evaluating Clinical Literature: An Overview</td>
<td>6</td>
<td>Dr. Maysa Suyagh</td>
<td>A1-3, B1, C1</td>
<td>Exams, Quizzes</td>
<td>Specified in each lecture. General references provided below</td>
</tr>
<tr>
<td>Evaluating Randomized Controlled Trials</td>
<td>7</td>
<td>Dr. Maysa Suyagh</td>
<td>A1-3, B1, C1</td>
<td>Exams, Quizzes</td>
<td>Specified in each lecture. General references provided below</td>
</tr>
<tr>
<td>Statistical Principles and Data Analysis</td>
<td>8</td>
<td>Prof. M. Wazaify</td>
<td>A1-3, B1, C1</td>
<td>Exams, Quizzes</td>
<td>Specified in each lecture. General references provided below</td>
</tr>
<tr>
<td>Measurement and Descriptive Analysis</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Interpretation and Basic Statistical Concepts</td>
<td>9</td>
<td>Prof. M. Wazaify</td>
<td>A1-3, B1, C1</td>
<td>Exams, Quizzes</td>
<td>Specified in each lecture. General references provided below</td>
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<tr>
<td>Bivariate Analysis and Comparing Groups</td>
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</table>
21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

<table>
<thead>
<tr>
<th>ILOs</th>
<th>Learning Methods</th>
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</tr>
</thead>
<tbody>
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<td>Exam, Quiz and assignment</td>
</tr>
</tbody>
</table>

Learning skills:
1. Critical thinking
2. Digital literacy
3. Problem-solving skills
4. Self-directed learning
5. Scientific reasoning
6. Problem-solving skills

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

1. Exams
2. Quizzes
3. Students reports on assignments
23. Course Policies:

A- Attendance policies:

**Attendance: Mandatory.**
First warning – with 4 absences
Last warning – with 5 absences
Failing in the subject – with 6 absences

B- Absences from exams and handing in assignments on time:
Will result in zero achievement unless health report or other significant excuse is documented.

C- Health and safety procedures:
NA

D- Honesty policy regarding cheating, plagiarism, misbehavior:
The participation, the commitment of cheating will lead to applying all following penalties together
1) Failing the subject he/she cheated at
2) Failing the other subjects taken in the same course
3) Not allowed to register for the next semester. The summer semester is not considered as a semester

E- Grading policy:
Exams and Quizzes.
Mid Exam: 40 points
Quizzes % Assignments 10 points
Final Exam: 50 points
Total 100 points

F- Available university services that support achievement in the course:
Classrooms, internet classes

24. Required equipment:

Datashow and internet connection

25. References:

<table>
<thead>
<tr>
<th>ISBN</th>
<th>Title</th>
<th>Authors</th>
<th>Ed</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>978-1284038798</td>
<td>Principles of Research Design And Drug Literature Evaluation</td>
<td>Rajender R. Aparasu and John P. Bentley</td>
<td>1st</td>
<td>2014</td>
</tr>
<tr>
<td>2</td>
<td>978-0071790710</td>
<td>Users’ Guides to the Medical Literature: A Manual for Evidence-Based Clinical Practice</td>
<td>Gordon Guyatt; Drummond Rennie; Maureen O. Meade; Deborah J. Cook</td>
<td>3rd</td>
</tr>
<tr>
<td>3</td>
<td>978-0071794152</td>
<td>Users’ Guides to the Medical Literature: Essentials of Evidence-Based Clinical Practice</td>
<td>Gordon Guyatt; Drummond Rennie; Maureen O. Meade; Deborah J. Cook</td>
<td>3rd</td>
</tr>
<tr>
<td>4</td>
<td>978-1118800966</td>
<td>How to Read a Paper: The Basics of Evidence-Based Medicine</td>
<td>Trisha Greenhalgh</td>
<td>5th</td>
</tr>
<tr>
<td>5</td>
<td>978-1452203874</td>
<td>How to Conduct Surveys: A Step-by-Step Guide</td>
<td>Arlene Fink</td>
<td>5th</td>
</tr>
<tr>
<td>6</td>
<td>978-1451144475</td>
<td>Clinical Epidemiology: The Essentials</td>
<td>Robert Fletcher and Suzanne W. Fletcher</td>
<td>5th</td>
</tr>
<tr>
<td>7</td>
<td>978-0071781503</td>
<td>Primer of Biostatistics</td>
<td>Stanton A. Glantz</td>
<td>7th</td>
</tr>
<tr>
<td>8</td>
<td>978-0071624947</td>
<td>The Patient History: Evidence-Based Approach to Differential Diagnosis</td>
<td>Mark Henderson; Lawrence Tierney; Gerald Smetana</td>
<td>2nd</td>
</tr>
<tr>
<td>10</td>
<td>978-0415486699</td>
<td>Practice-based Evidence for Healthcare: Clinical Mindlines</td>
<td>John Gabbay, Andrée le May</td>
<td>1st</td>
</tr>
<tr>
<td>11</td>
<td>978-0071590303</td>
<td>Rational Clinical Examination: Evidence-based Clinical Diagnosis</td>
<td>David L. Simel and Drummond Rennie</td>
<td>2009</td>
</tr>
<tr>
<td>12</td>
<td>978-0521712415</td>
<td>Essential Evidence-based Medicine</td>
<td>Dan Mayer</td>
<td>2nd</td>
</tr>
<tr>
<td>15</td>
<td>978-0071437899</td>
<td>Interpreting the Medical Literature</td>
<td>Stephen H. Gehlbach</td>
<td>5th</td>
</tr>
<tr>
<td>16</td>
<td>978-0727918413</td>
<td>Evidence-based Medicine Toolkit</td>
<td>Carl Heneghan and Douglas Badenoch</td>
<td>2nd</td>
</tr>
<tr>
<td>17</td>
<td>978-3540222392</td>
<td>Evidence-based Practice in Medicine and Health Care: A Discussion of the Ethical Issues</td>
<td>Ruud ter Meulen, Nikola Biller-Andorno, Christian Lenk and Reidar K. Lie</td>
<td>2005</td>
</tr>
</tbody>
</table>
26. Additional information:

Name of Course Coordinator: Nailya Bulatova - Signature: ------------------------- Date: Jan, 31, 2016

Head of curriculum committee/Department: ------------------------- Signature: -------------------------

Head of Department: Nailya Bulatova Signature: -------------------------

Head of curriculum committee/Faculty: ------------------------- Signature: -------------------------

Dean: ------------------------- -Signature: -------------------------

Copy to:
Head of Department
Assistant Dean for Quality Assurance
Course File