

# Principles of Scientific Literature Evaluation

## PHRM 3520 Winter 2019

**Credit hours:** 4  
**Class contact hours:** 52

### SCHEDULE

#### January:

Tuesday 2:30 - 4:00 1<sup>st</sup> Floor LT  
Wednesday 12:30 - 2:00 Basement Floor LT  
Friday 1:00 – 2:30 1<sup>st</sup> Floor LT

#### February / March:

Monday 1:00 - 2:30 1<sup>st</sup> Floor LT  
Wednesday 12:30 - 2:00 Basement Floor LT  
Friday 1:00 - 2:30 1<sup>st</sup> Floor LT

### Course Coordinators:

Dr. Rob Renaud  
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### Instructors:

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Health Sciences Librarian  
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Dr. Jamie Falk  
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Office Hours: by appointment

## Purpose of the Course:

Upon completion of this course, the student will be able to effectively understand, evaluate and utilize literature and evidence-based medicine to substantiate decisions related to the provision of pharmaceutical care.

## Course Objectives

<b>Course Objectives</b> At the completion of this course, the student should be able to:	<b>AFPC Outcome Achieved</b>	<b>NAPRA Competency Achieved</b>	<b>Learning Level</b> (ICE – Ideas, Connections, Extensions)	<b>Performance Level</b> (Novice, Functional, Competent)
<b>1. Describe data formats and patterns in biomedical data.</b>	CP 2.2	6.1	Ideas	Competent
<b>2. Describe, calculate and interpret basic statistical inferential statistics (t-test, ANOVA, etc.).</b>	SC2.3	6.1 & 6.2	Connections	Functional
<b>3. Assess the assumptions and concepts behind the choice of a statistical test.</b>	SC2.3	6.1 & 6.2	Extensions	Novice
<b>4. Define Evidence-based medicine (EBM).</b>	SC1.1	6.1	Ideas	Competent
<b>5. Describe and recognize the value of using EBM skills in daily practice.</b>	CM1.3	6.3	Connections	Competent
<b>6. Employ bibliographic databases in answering clinical questions.</b>	SC2.1, SC2.2	6.3	Connections	Functional
<b>7. Distinguish between various study designs (observational, RCT, qualitative, etc.) and interpret their relative value and application to practice.</b>	SC2.3	6.1 to 6.3	Extensions	Functional
<b>8. Describe, compute and interpret basic medical statistics (ARR, RRR, OR, NNT, NNH, etc.).</b>	SC2.3	6.2	Extensions	Competent
<b>9. Critique and appraise medical and pharmaceutical literature (emphasis on Randomized Controlled Trials, Clinical Practice Guidelines, and Systematic Reviews) in order to formulate and recommend relevant clinical guidance.</b>	SC2.3	2.5, 6.2 & 6.3	Extensions	Functional
<b>10. Assemble and present the findings of literature evaluation to medical and lay people in a concise and appropriate manner.</b>	CM1.3, CM1.6, CL1., SC4.1	2.5, 6.2 & 6.3	Extensions	Competent

## Assumed Background:

- Successful completion of the Drug Information component of Pharmacy Skills Labs 1 and 2 (PHRM 1110 & 2100)

## Teaching and Learning Methods:

Students are expected to act as independent learners and are responsible for:

- Mastery of the basic subject matter by recalling facts and principles (knowledge) and through interpreting and extrapolating this knowledge (comprehension)
- Development of higher cognitive abilities by utilizing knowledge and principles in order to solve a problem (application) and
- Application of knowledge to make clinical recommendations

## Assessment criteria and grading:

Allocation of Total Marks:

### Assessment:

Quizzes	30%	Jan 30 <sup>th</sup> and March 1 <sup>st</sup>
Journal Club Assignment & Reading Assessment	20%	March 4 <sup>th</sup> – 15 <sup>th</sup>
Final Examination	<u>50%</u>	March 29 <sup>th</sup> to April 5 <sup>th</sup> , 2019
	100%	

The total of all the above evaluations will be translated into the following letter grades:

≥90%	A+	65-69%	C+
80-89%	A	60-64%	C
75-79%	B+	50-59%	D
70-74%	B	<50%	F

## Late Submissions

Assignments which are not submitted on the specified due date will receive a zero grade unless specific arrangements have been approved by the coordinator in exceptional circumstances.

## Course Technology:

It is the general University of Manitoba policy that all technology resources are to be used in a responsible, efficient, ethical and legal manner. Students can use all technology in classroom settings only for educational purposes approved by the instructor and/or the University of Manitoba Student Accessibility Services. Students should not participate in personal direct electronic messaging / posting activities (e-mail, texting, video or voice chat, wikis, blogs, social networking (e.g. Facebook) online and offline “gaming”) during scheduled class time. Course materials are provided on UM Learn and can be accessed electronically at <https://universityofmanitoba.desire2learn.com/d2l/login>

## **Voluntary Withdrawal (VW):**

Course feedback and assessment will be provided before the voluntary withdrawal (VW) date. For the 2018-2019 academic year, the VW date for this course is March 3, 2019. PLEASE NOTE HOWEVER, STUDENTS CONTEMPLATING VOLUNTARILY WITHDRAWING FROM A COURSE SHOULD SPEAK TO THE DEAN'S OFFICE BEFORE DOING SO. THERE ARE SIGNIFICANT CONSEQUENCES OF WITHDRAWING FROM A COURSE DURING THE PROFESSIONAL PROGRAM.

## **Academic Integrity (Plagiarism, Cheating and Personation):**

Please review the official College of Pharmacy Policies on Plagiarism and Cheating, clearly outlined in your Pharmacy Student Handbook for 2018-2019 and the University of Manitoba Academic Calendar at:

<http://crscalprod.ad.umanitoba.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=341&chapterid=4295&topicgroupid=23114&loaduserredits=False>

These policies directly apply to this course.

The coordinator and instructors of this course and the University of Manitoba hold copyright over the course materials, presentations and lectures which form part of this course. No audio or video recording of lectures or presentations is allowed in any format, openly or surreptitiously, in whole or in part without permission of the course coordinator. Course materials (both paper and digital) are for the participant's private study and research.

## **Student Accessibility Services (SAS):**

If you are a student with a disability, please contact SAS for academic accommodation supports and services. Students who have, or think they may have, a disability (e.g. mental illness, learning, medical, hearing, injury-related, visual) are invited to contact SAS to arrange a confidential consultation. The coordinator of this course is willing to meet with students to discuss accommodations recommended by SAS.

*Student Accessibility Services* <http://umanitoba.ca/student/accessibility/index.html>

520 University Centre

204-474-7423

[Student\\_accessibility@umanitoba.ca](mailto:Student_accessibility@umanitoba.ca)

## **Recommended texts, electronics and references:**

No required text, reading as assigned.

All students should have available a portable device (laptop, smart phone) that can access the internet for some class exercises.

## **Student Support:**

Please refer to the attached Schedule "A" for a list of student supports provided by the University of Manitoba.

## Lecture Timetable:

Date	Time	Lecture Topic	
Friday, Jan. 4, 2019	1:00 - 2:30	Introduction to EBM - Setting the Stage	Falk
Tuesday, Jan. 8, 2019	2:30 - 4:00	Introduction to Statistics - Describing Data	Renaud
Wednesday, Jan. 9, 2019	12:30 - 2:00 2:15 - 3:00	Statistical Inference - Hypothesis testing (Comparing 2 groups) Statistical Inference - Hypothesis testing (Comparing 2 groups)	Renaud
Friday, Jan. 11, 2019	No class		Renaud
Tuesday, Jan. 15, 2019	2:30 - 4:00	Life Tables	Renaud
Wednesday, Jan. 16, 2019	12:30 - 2:00	Analysis of Qualitative Data	Renaud
Friday, Jan. 18, 2019	1:00 - 2:30	Tests of Association / Correlation	Renaud
Tuesday, Jan. 22, 2019	2:30 - 4:00	Statistical Inference - Analysis of Variance (Comparing multiple Groups)	Renaud
Wednesday, Jan. 23, 2019	12:30 - 2:00	Statistical Inference - Analysis of Variance (Comparing multiple Groups)	Renaud
Friday, Jan. 25, 2019	1:00 - 2:30	Medical Statistics and Outcome Measures	Renaud
Wednesday, Jan. 30, 2019	12:30 - 1:30	Summary and review	Renaud
Wednesday, Jan. 30, 2019	2:00-3:00	Quiz #1 15%	Renaud
Friday, Feb.1 , 2019	1:00 - 2:30	RCT Design and Critical Appraisal	Eltonsy
Monday, Feb. 4, 2019	1:00 - 2:30	RCT Design and Critical Appraisal	Eltonsy
Wednesday, Feb. 6, 2019	12:30 - 2:00	RCT Design and Critical Appraisal	Eltonsy
Friday, Feb. 8, 2019	1:00 - 2:30	Introduction to Journal Club	Eltonsy
Monday, Feb. 11, 2019	1:00 - 2:30	EBM Resources	McNair
Wednesday, Feb. 13, 2019	12:30 - 2:00	Library Workshop	Le
Friday, Feb. 15, 2019	1:00 - 2:30	Clinical Practice Guidelines	Eltonsy
Monday, Feb. 18, 2019	1:00 - 2:30	Spring Break	No class
Wednesday, Feb. 20, 2019	12:30 - 2:00	Spring Break	No class
Friday, Feb. 22, 2019	1:00 - 2:30	Spring Break	No class
Monday, Feb. 25, 2019	1:00 - 2:30	Systematic Review and Meta-analysis	Eltonsy
Wednesday, Feb. 27, 2019	12:30 - 2:00	Non-Inferiority Trials	Eltonsy
Friday, March 1, 2019	1:00 - 2:30	Quiz #2 15%	Eltonsy
Monday, March 4, 2019	1:00 - 2:30	JC Presentations and Reading Assessment	Eltonsy
Wednesday, March 6, 2019	12:30 - 2:00	JC Presentations and Reading Assessment	Eltonsy
Friday, March 8, 2019	1:00 - 2:30	JC Presentations and Reading Assessment	Eltonsy
Monday, March 11, 2019	1:00 - 2:30	JC Presentations and Reading Assessment	Eltonsy
Wednesday, March 13, 2019	12:30 - 2:00	JC Presentations and Reading Assessment	Eltonsy
Friday, March 15, 2019	1:00 - 2:30	JC Presentations and Reading Assessment	Eltonsy
Monday, March 18, 2019	1:00 - 2:30	Observational Research	Kowalec
Wednesday, March 20, 2019	12:30 - 2:00	Observational Research	Kowalec
Friday, March 22, 2019	1:00 - 2:30	Observational Research	Kowalec
Monday, March 25, 2019	1:00 - 2:30	Qualitative Research	Kowalec
Wednesday, March 27, 2019	12:30 - 2:00	Qualitative Research	Kowalec
March 29th to April 5th		Final Exam Period 50%	Eltonsy