

Dalhousie University
College of Pharmacy, Faculty of Health
Term Y: 2020

Pharmacy 2012: Critical Appraisal Series IB

- Lectures:** Tuesdays, 9:35 am to 11:25 am
See PharmX for location
- Course Coordinator:** Dr. Jennifer Isenor
Phone: (902) 494-8916
E-Mail: Jennifer.Isenor@dal.ca (preferred method of contact)
Office: Room 206A, Burbidge Building
Office Hours: Tuesdays 12:30 pm to 1:30 pm* or by appointment
*with exceptions, see Brightspace
- Biostatistics Professor:** Dr. Huaichun Wang
Phone: (902) 494- 8850
E-Mail: Huaichun.Wang@dal.ca (preferred method of contact)
Office: Room 115, Chase Building
Office Hours: Fridays 4:30pm to 5:20pm* (Chase Room 115) or by appointment
Course Website: <https://mathstat.dal.ca/~hcwang/Phar2012.html>
*with exceptions, see Brightspace

Course Description from University Calendar

The course focuses on the fundamentals of clinical research methodology, evaluating research papers, and biostatistics. Students will gain experience applying the content through various activities, including assignments.

Course Rationale

The knowledge and skills learned in this course will be used throughout the curriculum, including the PBL units, Skills Lab, Practice Experience Program, future CAS courses, and throughout your career as a pharmacist.

Classroom Management System

Dalhousie's designated online platform, Brightspace, will be used extensively to facilitate this course. The course syllabus, course schedule (changes to the schedule will also be posted on PharmX), pre-readings, lecture handouts, and assignments will be posted on the course space. The pre- and post-class exercises will be completed on the course space.

Course Aim:

The **aim** is to provide students with an introduction to the fundamentals of clinical research methodology, biostatistics, and critical appraisal as it relates to clinical trials.

Course Outcomes:

Upon completion, students will be able to:

1. Define and discuss various aspects of clinical research methodology, including strengths and limitations of various aspects of study design; and
2. Discuss and interpret the methods and results of studies with a focus on randomized controlled trials.

The following **AFPC Educational Outcome** (<http://www.afpc.info/node/39>) is the focus of the **overall course**:

SCHOLAR

As **Scholars**, pharmacy graduates take responsibility for excellence by applying medication therapy expertise, learning continuously, creating new knowledge and disseminating knowledge when teaching others.

Key Competencies	Enabling Competencies
Pharmacy Graduates are able to:	Pharmacy Graduates are able to:
SC1: Apply medication therapy expertise to optimize pharmacy care, pharmacy services and health care delivery.	SC1.1 Use knowledge and problem-solving to arrive at recommendations and decisions that are appropriate, accurate and practical.
	SC1.2 Use professional experience to solve routine, previously encountered problems.
	SC1.3 Use established decision-making frameworks and apply learning required to manage new situations and problems.
SC2: Integrate best available evidence into pharmacy practice.	SC2.1 Generate focused questions related to needs for information, recommendations and decisions in practice.
	SC2.2 Use systematic approaches in the search for best available evidence.
	SC2.3 Critically appraise health-related research and literature.
	SC2.4 Incorporate best available evidence in the decision-making process.
SC3: Contribute to the creation of knowledge or practices in the field of pharmacy	SC3.1 Apply scientific principles of research and scholarly inquiry.
	SC3.2 Apply ethical principles that underlie research and scholarly inquiry.

In addition, the **lectures, Brightspace exercises, pre-readings, assignments, and examinations** will also address the **CARE PROVIDER, COMMUNICATOR, COLLABORATOR, and PROFESSIONAL AFPC Educational Outcomes**.

CARE PROVIDER

As **Care Providers**, pharmacy graduates provide patient-centred pharmacy care by using their knowledge, skills and professional judgement to facilitate management of a patient's medication and overall health needs across the care continuum. Care Provider is the core of the discipline of pharmacy.

Key Competencies	Enabling Competencies
Pharmacy Graduates are able to:	Pharmacy Graduates are able to:
CP2: Provide patient-centred care.	CP2.1 Collect, interpret and assess relevant, necessary information about a patient's health care needs.

As a Care Provider in this course, you will be evaluating relevant history included in Brightspace exercises, assignments, and examinations to answer information requests.

COMMUNICATOR

As **Communicators**, pharmacy graduates communicate effectively in lay and professional language, using a variety of strategies that take into account the situation, intended outcomes of the communication and diverse audiences.

Key Competencies	Enabling Competencies
Pharmacy Graduates are able to:	Pharmacy Graduates are able to:
CM1: Communicate in a responsible and responsive manner that encourages trust and confidence.	CM1.2 Provide timely, clear responses that are tailored to the context and audience.
	CM1.3 Express facts, evidence, opinions and positions accurately and effectively, with clarity and confidence.

As a Communicator in this course, you will be communicating in writing your responses to a variety of drug and health information and critical appraisal questions in Brightspace exercises, assignments, and examinations.

COLLABORATOR

As **Collaborators**, pharmacy graduates work collaboratively with patient and intra- and inter-professional teams to provide safe, effective, efficient health care, thus fulfilling the needs of the community and society at large.

Key Competencies	Enabling Competencies
Pharmacy Graduates are able to:	Pharmacy Graduates are able to:
CL1: Work effectively with members of the health team including patients, pharmacy colleagues and individuals from other professions.	CL1.1 Establish and maintain positive relationships.
	CL1.2 Recognize, respect and negotiate the roles and shared/overlapping responsibilities of team members.
	CL1.3 Join with others in respectful, effective shared decision-making.

As a Collaborator in this course, you will be working with classmates to complete various activities and assignments.

PROFESSIONAL

As **Professionals** pharmacy graduates take *responsibility* and *accountability* for *delivering* pharmacy care to patients, communities and society through ethical practice and the high standards of behaviour that are expected of self-regulated professionals. The Professional role is the overarching ethos of the discipline of pharmacy.

Key Competencies	Enabling Competencies
Pharmacy Graduates are:	Pharmacy Graduates are able to:
PR1: Committed to apply best practices and adhere to high ethical standards in the delivery of pharmacy care.	PR1.1 Exhibit professional behaviour whether face-to-face, in writing or via technology-enabled communication. Professional behaviour includes, but is not limited to: <ul style="list-style-type: none">a) Demonstrating honesty, integrity, humility, commitment, altruism, compassion, respect, and respect for diversity and patient autonomy;b) Being accessible, diligent, timely and reliable in service to others;c) Abiding by the principle of non-abandonment;d) Maintaining appropriate interpersonal boundaries;e) Maintaining professional composure, demeanour and language, even in difficult situations; andf) Maintaining privacy and confidentiality.
	PR1.3 Recognize and respond to situations presenting ethical dilemmas, including conflicts of interest.
	PR2.1 Take responsibility and accountability for actions and inactions.
PR2: Able to recognize and respond to societal expectations of regulated health care professionals.	
PR3: Committed to self-awareness in the management of personal and professional well being.	PR3.2 Examine, reflect upon, and manage personal attributes (knowledge, skills, beliefs, biases, motivations, emotions) that could influence self-development and professional performance.

As a Professional in this course, you will be accepting responsibility for all aspects of your role in the course, including your interactions with course coordinators, guest lecturers, student assistants, and classmates, as well as the course work submitted (or not submitted), and consider it a representation of your professional image.

Required Text:

1. Guyatt G, Rennie D, Meade MO, Cook DJ, editors. Users' guides to the medical literature: A manual for evidence-based clinical practice. 3rd ed. The McGraw-Hill Companies; 2015. Available (along with other resources) through Dalhousie Libraries at: <https://dal.ca.libguides.com/jamaevidence>
2. DeVeaux RD, Velleman PF, Bock DE. Stats: data and models. 3rd ed. North York: Pearson; 2018. Older versions are acceptable.

Other Useful References:

1. Ajetunmobi O. Making sense of critical appraisal. New York: Oxford University Press; 2002.
2. Greenhalgh T. How to read a paper: the basics of evidence-based medicine and healthcare. 6th ed. Chichester, West Sussex, UK: Wiley Blackwell; 2019.
3. Straus SE, Richardson WS, Glasziou P, Haynes RB, editors. Evidence-based medicine: how to practice and teach it. 4th ed. Edinburgh: Elsevier Churchill Livingstone; 2011.

How to Reference:

It is important to reference your responses to drug and health information questions. Individual statements should be referenced, and enough information must be included in a citation so that the source used can be identified. If you have used a tertiary resource, or a database, such as Micromedex, and have not gone back to review the primary literature cited by the tertiary resource, then cite the tertiary resource that you used.

The National Library of Medicine (NLM) style of referencing, often referred to as "Vancouver style", will be used in this course. The following resource provides instruction and examples on appropriate referencing. This is the resource that will be used for marking exercises, assignments and exams.

Patrias K. Citing medicine: the NLM style guide for authors, editors, and publishers [Internet]. 2nd ed. Wendling DL, technical editor. Bethesda (MD): National Library of Medicine (US); 2007 [updated 2015 Oct 2; cited 2019 Dec 9]. Available from: <http://www.nlm.nih.gov/citingmedicine>

Additional information can be found at the following resource:

Dalhousie University Libraries. Citation style guide: Vancouver Style [Internet]. Halifax (NS): Dalhousie University; 2019 [updated 2019 Sep 16; cited 2019 Dec 9]. Available from: <http://dal.ca.libguides.com/CitationStyleGuide/Vancouver>

Learn more about paraphrasing versus plagiarism at: https://www.dal.ca/dept/university_secretariat/academic-integrity/student-resources/paraphrasing.html.

Description of Course Format

The course consists of a combination of lectures, pre-readings, Brightspace exercises, assignments, and examinations (a written midterm and written final examination). Lectures will be interactive. It is expected that you will come prepared and participate in class. Student response systems, such as Top Hat, may be used throughout the term to increase participation.

The content focuses on clinical research methodology, biostatistics, and critical appraisal. Most classes will consist of one hour of biostatistics followed by one hour of critical appraisal. When appropriate, the two hours will be linked in terms of content.

*****Video recording of lectures in the College of Pharmacy is NOT permitted. Audio recording of lectures is at the sole discretion of the lecturer involved and is for personal use only. If you would like to audio record lectures, please speak with the lecturer (including guest lecturers) in advance.*****

Lecture Outline*

Date	Time	Title/Topics	Lecturer
January 7	0935 - 1025h	Intro to Biostatistics	H. Wang
	1035 - 1125h	Intro to Second Term Research Methodology & Trial Design	J. Isenor
January 14	0935 - 1025h	Confidence Interval and Hypothesis Test	H. Wang
	1035 - 1125h	Research Methodology & Trial Design	J. Isenor
January 21	0935 - 1025h	Comparison of Two Means	H. Wang
	1035 - 1125h	Research Methodology & Trial Design	J. Isenor
January 28	0935 - 1025h	Comparison of Two Proportions	H. Wang
	1035 - 1125h	Sampling and Enrollment	J. Isenor
February 4	0935 - 1025h	Probability	H. Wang
	1035 - 1125h	Subject Allocation	J. Isenor
February 11	1:45pm to 3:45pm Dentistry 3156	MIDTERM ***Please note time and location	J. Isenor/ H. Wang
February 18	STUDY BREAK – NO CLASSES		
February 25	0935 - 1025h	Odds Ratio and Relative Risks	H. Wang
	1035 - 1125h	Inferences for Counts in Contingency Tables	
March 3	0935 - 1025h	Correlation and Simple Linear Regression I	H. Wang
	1035 - 1125h	Correlation and Simple Linear Regression II	
March 10	0935 - 1025h	Power and Sample Size	H. Wang
	1035 - 1125h	Confounders and Bias	J. Isenor
March 17	0935 - 1025h	Understanding Study Results I	J. Isenor
	1035 - 1125h	Understanding Study Results II	
March 24	0935 - 1025h	Qualitative Research	A. Bishop
	1035 - 1125h	Understanding Study Results III	J. Isenor
March 31	0935 - 1025h	One-Way Analysis of Variance	H. Wang
	1035 - 1125h	Industry Insights	D. Gardner
April 7	0935 - 1025h	Review	H. Wang
	1035 - 1125h	Review	J. Isenor
TBA	TBA	FINAL EXAMINATION Date, Time and Location TBA	J. Isenor/ H. Wang

* Subject to change, check Brightspace and PharmX for updates

ASSESSMENT COMPONENTS

Pharmacy 2012 is a pass/fail course. The pass mark is 65%. GPA is assigned per the College of Pharmacy Academic Regulations found in your student orientation manual.

Assignments	22.5%
Pre-/Post-Class Brightspace Exercises	7.5%
Midterm	20%
Final Examination	50%

Requirements to Pass Course

The **following minimums** must be met by each student to achieve a passing grade in this course:

- Final Examination: 65% on each section of the exam (Critical Appraisal: 65%; Biostatistics: 65%)
- Overall Course Grade: 65%

Students failing to meet these minimum requirements will receive a grade of Incomplete (INC) and be given the opportunity to complete remedial work (e.g. a make-up exam). If remedial work is successfully passed, regardless of the mark obtained, the pass mark of 65% will be assigned to the rewritten work for calculation of the overall course grade or in the case of failure to obtain an overall course grade of 65%, passing of remedial work will result in a final grade of 65%. Failure to meet any one of these minimums after completing the remedial work will result in course failure (F/FM). Eligibility for supplemental course work will be assessed at the end of the academic year as described in the College of Pharmacy Regulations.

Assessment Methods

Assignments: Assignments will be posted on the online course space(s) at least one week prior to the due date. They must be submitted at the start of class on the due date. A 25% reduction in grade will be applied to all late assignments up to 24 hours from the due date, after which the assignment will not be marked and a grade of zero will be applied.

Pre-/Post-Class Brightspace Exercises: Pre-readings will be periodically assessed by brief Brightspace pre-class exercises. Pre-class exercises will generally be open for at least 2 days prior to the applicable class and close by the start of the class. The pre-class exercise must be completed prior to the start of class to receive points. After some classes, there will be a brief post-class Brightspace exercise. The deadline will be posted with each post-class exercise. They must be completed by the posted deadline to receive points. There is no opportunity to make up a missed Brightspace exercise. If you miss completing a Brightspace exercise for any reason, a grade of zero will be applied to that exercise.

Midterm*: Two hour written test during second term. A prescribed number of notes/information sheets will be permitted; details will be posted on Brightspace.

Final Examination*: Three hour written examination at the end of the course. A prescribed number of notes/information sheets will be permitted; details will be posted on Brightspace. To achieve a passing grade in this course, students must achieve at least 65% on each component (critical appraisal and biostatistics) of the examination.

*College of Pharmacy Exam Policies will be followed for the midterm and final examination in this course. The policy is found in your student orientation manual.

Unless otherwise stated, work in PHAR 2012 is to be individual. Any student work that may violate the university policy on Academic Integrity MUST be referred to the Faculty of Health Academic Integrity Officer for consideration.

Access to Examinations

Upon request in writing or via email students may request an appointment with the Course Coordinator to review their examination. The purpose of such a review will be to identify areas of weakness. No mark adjustments will be made unless there has been a coding error in the multiple choice answer key or a mark calculation error. If you would like to appeal a final grade, please see: https://www.dal.ca/campus_life/academic-support/grades-and-student-records/appealing-a-grade.html

UNIVERSITY POLICIES, STATEMENTS, GUIDELINES

This course is governed by the academic rules and regulations set forth in the University Calendar and the Senate (<https://academiccalendar.dal.ca>)

Academic Integrity http://www.dal.ca/dept/university_secretariat/academic-integrity.html

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity. For more information, visit:

[https://www.dal.ca/content/dam/dalhousie/pdf/dept/university_secretariat/Syllabus_Statement_\(Aug%202015\).pdf](https://www.dal.ca/content/dam/dalhousie/pdf/dept/university_secretariat/Syllabus_Statement_(Aug%202015).pdf)

Accessibility

The Student Accessibility Centre (Halifax Campus) is Dalhousie's centre of expertise for student access, inclusion, and accommodation support. For more information, visit: https://www.dal.ca/campus_life/academic-support/accessibility.html

Student Code of Conduct

The Dalhousie University Code of Student Conduct sets out the offences for which a Dalhousie University student may be subject to non-academic discipline. For more information, visit:

https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a **culture of diversity and inclusiveness** (Strategic Priority 5.2). For more information, visit:

<http://www.dal.ca/cultureofrespect.html>

Recognition of Mi'kmaq Territory

Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people. The Elders in Residence program is available to students across campus. Visit the office in the Indigenous Student Centre, 1321 Edward Street or contact the program at Elders@dal.ca or 902-494-6803.

University Policies and Programs

- Important Dates in the Academic Year (including add/drop dates): http://www.dal.ca/academics/important_dates.html
- University Grading Practices: Statement of Principles and Procedures: https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html
- Scent-Free Program <https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>
- Certificate of Illness Policy - The policy is found in the student orientation manual.

LEARNING AND SUPPORT RESOURCES

- General Academic Support – Advising: https://www.dal.ca/campus_life/academic-support/advising.html
- Study Skills/Tutoring: http://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html
- Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html
- Fair Dealing Guidelines: <https://libraries.dal.ca/services/copyright-office/fair-dealing/fair-dealing-guidelines.html>
- Copyright Office: <https://libraries.dal.ca/services/copyright-office.html>
- Dalhousie Student Advocacy Services: <http://dsu.ca/dsas>
- Dalhousie University Library: <http://libraries.dal.ca>
- eLearning: <http://www.dal.ca/dept/elearning.html>
- Black Student Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html
- Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html
- International Centre: https://www.dal.ca/campus_life/international-centre.html
- LGBTQ2SIA+ Collaborative: <https://www.dal.ca/dept/hres/education-campaigns/LGBTQ2SIA-collaborative.html>
- Student Health & Wellness: https://www.dal.ca/campus_life/health-and-wellness.html
- Money Matters: https://www.dal.ca/admissions/money_matters.html