MLSCI 320 – Analysis and Communication of Biomedical Information

Overview / General information

This course is designed to foster research and communication skills that are essential for continuous professional growth. You will learn to search the literature, to analyze literature critically, and to use a scientific writing style. The course is delivered using lectures, on-line tutorials, self-study materials, and group discussion. The skills learned in this course are transferable and can be used in both undergraduate and graduate education. As well, by providing instruction and practice in finding, evaluating, and communicating information, the course will help prepare you to be lifelong learners.

Policy about course outlines can be found in Course Requirements, Evaluation Procedures and Grading of the University Calendar. http://calendar.ualberta.ca/content.php?catoid=6&navoid=806#course-requirements,-evaluation-procedures-and-grading-a

The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at www.governance.ualberta.ca) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s).

Course Coordinator / Instructor(s)

Amanda VanSpronsen
5-399 ECHA
(780) 492-0989
amanda.vanspronsen@ualberta.ca

Course Competencies

| A. | Understand the basic path of scientific publication from idea to peer-reviewed article |
|-------------------------------------------------|
| B. | Distinguish between the 4 major types of scientific literature (research, review, editorial, and letter), focusing on: |
|     | a. Purpose |
|     | b. Scope |
|     | c. Source (primary vs. secondary) |
|     | d. Structure |
| C. | Understand the common causes of plagiarism and develop preventative strategies |
| D. | Know the differences between the different types of plagiarism, such as patchwriting, verbatim plagiarism, and omitting the source |
| E. | Learn about the different types of literature databases and how to efficiently search articles using tools such as Boolean operators, limits, and key words |
| F. | Be able to extract relevant information that allows you to critically assess a research article, including: |
|     | a. Research question |
|     | b. Study design |
|     | c. Sample selection and composition |
|     | d. Power |
|     | e. Statistical significance |
|     | f. Major conclusions |
g. Limitations  
  h. Conflict of interest  
  i. Sources of bias  
  j. Other threats to validity

G. Be able to create a summary table for a literature review  
H. Critically assess literature for inclusion into a literature review  
I. Develop a literature review topic and find articles relating to that topic  
J. Summarize information from research articles and determine their suitability for a chosen topic of a literature review  
K. Learn about the process of Peer Review and apply it to mini-literature reviews  
L. Be able to write concisely and use feedback to improve clarity and flow of writing  
M. Use the Vancouver referencing system correctly and effectively  
N. Give presentations on your literature review plan  
O. Create a cohesive literature review on a topic relating to laboratory medicine

**Methods of Instruction**

MLSCI 320 involves independent learning on eClass, aided by four face-to-face seminars scheduled throughout the semester. The face-to-face seminars will involve lectures, discussions, and structured learning activities. The successful completion of a literature review is the major outcome of this course, and all of the tutorials and assignments will help build foundational skills to accomplish this goal.

**Distribution of Marks**

MLSCI 320

- Online Quiz Tutorial #1 4%
- Online Quiz Tutorial #2 5%
- Online Quiz Tutorial #3 3%
- Peer Review 8%
- Mini-Literature Review 15%
- Review Response 8%
- Literature Review
  - Summary Table 5%
  - Final Draft 4.5%
- Classroom Participation 7%

**Attendance**

Seminar attendance is mandatory. An absence is missing more than 10 minutes of any class period. Any unexcused absences decreases the grade earned by one. For example, if you completed the assignments to earn a B but had an unexcused absence, you would receive a grade of B-. Three or more unexcused absences will result in a failing grade. To discuss obtaining an excused absence, contact the course coordinator before the class. Excused absences are granted at the discretion of the course coordinator.