

Course Number: PSYC 3850A

Course Name: Science and Pseudoscience

1.0 Calendar Description

This course aims to provide students with the tools necessary to critically evaluate arguments and claims asserted in both the academic peer reviewed and popular literature. With emphasis on distinguishing science from pseudoscience, students will learn to 1) identify common heuristics, biases and logical fallacies that can lead to errors in thinking, 2) to evaluate the strength of the evidence used to support claims, and 3) assess the reasonableness of conclusions given the evidence.

(3.0 credits) 2 -3 hour lectures per week

2.0 Course Information

Instructor: Carrie A. Leonard
 Office: C885
 Phone: 403-329-2408
 Email: carrie.leonard@uleth.ca
 Office Hours:

Day: Tuesday Time: 13:00 - 15:00 or by appointment

Time and Location of Lectures:

Day: Monday Time: 13:00- 15:50 Room: AH117

Day: Wednesday Time: 13:00 - 15:50 Room: AH117

3.0 Textbook

There is no required textbook for this course however, an APA 6th Edition Manual it is *strongly recommended*. Relevant readings may be posted to Moodle throughout the term.

4.0 Evaluation

There are seven components to the evaluation in the course:

I. Alternative Treatment Evaluation (10% of overall grade)

Individually or in groups (maximum 5 people per group), you will be asked to comprehensively evaluate the statements/claims presented on an alternative therapy website. You will choose your group members, but the alternative treatment website you are to analyze will be provided. Your group (or you if you are working independently) will be required to submit one completed Claim Evaluation Form.

II. Academic Peer Reviewed Article Evaluation (15% of overall grade)

In groups of your choosing (5 people per group), you will present a comprehensive critical evaluation of an academic peer-reviewed article. Groups will have articles

randomly assigned to them. Some class time may be allotted to work on this assignment. (Note: Presentation grading rubric will be provided well in advance of presentation dates).

III. Popular Media versus Peer Reviewed Evidence (25% of overall grade)

In groups of your choosing (5 people per group), you will:

- 1) Present a comprehensive critical evaluation of a claim put forth in the popular media (10% of assignment grade). Presentations will be a maximum of 10 minutes, plus up to 5 minutes for peer/audience questions. (Note: Presentation grading rubric will be provided well in advance of presentation dates).
- 2) Complete a term paper assessing the scientific evidence for and/or against the popular media claim. Papers must adhere to APA 6th Edition guidelines, should not exceed 5 pages (excluding Title page & Reference List), and cite 10-15 relevant peer reviewed publications (more if necessary).

TOPICS: Topics will be proposed by each group, but must be approved by the instructor. Topic examples: Sun gazing, Cinnamon therapy, detoxes, flat earth, earthing, hollow earth, etc.

**Note:* The author's note on the APA title page should specify each group members' contributions to the completion of both part I (media presentation) and part II (paper) of this assignment. All group members are however, responsible for the whole content of the submitted paper. Papers may be submitted to Turnitin.com.

IV. Midterm Exam (15% of overall grade)

This test will be administered in class (see course schedule), and will be 1 hour long.

V. Class Debate (15% of overall grade)

You will be randomly assigned to a pseudoscience or science based position on the class debate topic. Your task will be to review, and complete a Claim Evaluation Form for, either two popular media websites (for the pseudoscience position) or one peer reviewed journal article (science-based position) regarding our debate topic. A hard copy of each completed Claim Evaluation Form is required at the beginning of the lecture period. The proper APA 6th Edition citation of the source(s) you evaluate should be included in your hard copy Claim Evaluation submission. *Note:* Part of your Assignment 4 marks will be for your participation in the defense of the position you were assigned during our class debate.

VI. Final Exam (20% of overall grade)

The final exam will consist of a critical essay. This essay will require you to evaluate the scientific evidence pertaining to a pseudoscientific belief. Essay topics will be chosen by you, but must be approved by the instructor two weeks prior to the due date (final class). Essays must be written individually, APA 6th Edition guidelines must be followed, and essays should not exceed 5 pages (excluding Title page & References). **A hard-copy of this essay is to be submitted at the beginning of the**

final class, and an electronic copy must be submitted via Moodle prior to the start of the final lecture period. Essays submitted without both, electronic and hard copy versions will not be graded. Detailed instructions will be provided in class two weeks prior to due date. (Note: Essays may be submitted to Turnitin.com).

VII. Research Participation (BONUS CREDIT: 2%)

During the first and last week of this course, a research assistant will be in class conducting a survey study. You are not required to participate. If you choose to participate, your data will not be associated with your name – and the data that you provide will not be analyzed until after the grade appeal date has passed. For your participation, a bonus of 1% course credit per session will be added to your grade (i.e., 2% if you participate in both sessions). Bonus percentage(s) earned will be added to your grade at the end of the term.

5.0 Final Grades

Final Grades – Percentage Equivalents:

The grading system for this course is consistent with that established by the Faculty of Arts and Sciences:

Grade Percent		Grade Percent		Grade Percent	
A+	90-100%	B	73-77%	C-	60-63%
A	85-90%	B-	70-73%	D+	55-60%
A-	80-85%	C+	67-70%	D	50-55%
B+	77-80%	C	63-67%	F	0 - 49%

6.0 Schedule

See final page.

7.0 General Policies

Withdrawal Date

June, 19, 2017 is the last date to withdraw from this course with a “W” grade. **Note: it is the responsibility of the student to withdraw.** If you do not meet the requirements of the course and you are not officially withdrawn you will receive an “F”.

Late Course Work

Unexcused late term work varies by assessment type

- Group assignments – all group members receive a grade reduction of 25% per day
- Individual assignments – individuals will receive a grade reduction of 50% per day

- Note: In-class activity/assignment, individual or group, cannot be 'made-up'.

Tests/Exams

Under no circumstances will final exams be "deferred" to a date prior to the scheduled date of the exam.

Some acceptable reasons for missing a scheduled exam (midterm or final) include:

- Personal illness, injury, or bereavement
- Religious observances

Note: A note from the appropriate authority is required for a makeup test to be scheduled.

Academic Regulations

Refer to the University of Lethbridge Academic Calendar

Procedure for Appeals and Grievances can also be found in the University of Lethbridge Academic Calendar.

Academic Integrity Statement

Academic misconduct will not be tolerated. See the University of Lethbridge Academic Calendar *Discipline Policy* for a discussion of violations and possible consequences (especially part 4, 5, and 9). It is the responsibility of the student to be familiar with the Discipline Policy.

The University of Lethbridge Academic Calendar provides the following definition of plagiarism: *"No student shall represent the words, ideas, images, or data of another person as his or her own. This regulation will affect any academic assignment or other component of any course or program of study, whether the plagiarized material constitutes a part of or the entirety of the submitted work."*

All work submitted for credit in this course must be produced individually - this means collaborative efforts are not allowed except where expressly permitted. **A claim that "you didn't know it was wrong" will not be accepted as an excuse.**

Note: The University of Lethbridge subscribes to Turnitin.com, a plagiarism detection service. Please be advised that student work submitted for credit in this course may be submitted to this system to verify its originality.

Recording Lectures

There will be NO audio or photographic or video recording of any lecture, or component thereof, without the prior expressed written permission of the instructor.

8.0 Accommodations for Students with a Disability

Reasonable accommodations will be made for students who have a documented disability. If you have been diagnosed with a disability, please utilize the support available to you through the University. Please contact the Accommodated Learning Centre/Counselling Services to set up an appointment (Phone: 403-329-2766; <http://www.uleth.ca/ross/accommodated-learning-centre>). After registering with the Accommodated Learning Center, your instructor will be notified of any accommodations that you require.

Students are responsible for requesting accommodations from the instructor **at least two weeks** in advance of the evaluation date. The instructor and student are then jointly responsible for arranging the resources needed for the evaluation process.

9.0 Distribution of Course Information

Moodle. Login with your own user name and password to check the course moodle site regularly (moodle.uleth.ca). Information will be made available in Moodle throughout the semester, including the lecture syllabus (which states dates for all readings, assignments, exams), weekly quizzes, and any other announcements. Moodle gradebook will be used so that you may keep track of your grades. All course materials on the Moodle course site should be treated as copyrighted material. Meaning, you may personally use any of the materials posted however, you may not share or distribute any posted materials with individuals not registered in this course in this semester. The instructor will not be held accountable for students who choose to violate copyright law.

Email. Other than posts on Moodle, my primary method of communicating with you will be via in-class announcements or by email to the class listserv. Check your U of L email account on a regular basis.

Email Policy. Because I cannot verify the sender of any email that does not originate from a University of Lethbridge account, I will reply **ONLY** to messages sent from a “uleth.ca” account. Furthermore, I will not reply to an email that does not include the course name and topic of your email in the Subject line. Your full name (as it appears on your registration) must be included at the end of your message. Finally, I will **NOT** reply to email inquiries regarding basic course information that has been made available in class, has been posted on Moodle, is provided in this course outline, or if your email message is belligerent or disrespectful.

Schedule PSYC 3850

Module Content	Class	Date	Topic	Key Dates
Theme 1: Avoid drawing conclusions prematurely	1	May 8	Intro lecture	Course outline overview Survey participation part 1
	2	May 10	What is science?	
Theme 2: Evaluating Claims	3	May 15	Claim form & logic cheat sheet	Critical Article Review Assignment - Choose groups & Articles assigned
	4	May 17		Alternative Tx Assignment – In-class activity, due at the end of class
		May 22		NO CLASS
Theme 3: Evaluating Evidence	5	May 24	Hierarchy of evidence	Pop vs Peer Assignment - Choose group members & topic
Theme 4: Evaluating Conclusions	6	May 29	Goals of research & representativeness	
	7	May 31	APA tutorial	MIDTERM EXAM
	8	June 5		Critical Article Review - Presentations
	9	June 7		Class time to work on Pop vs Peer Assignment
Theme 5: Strategies for change	10	June 12	Six strategies	Final essay instructions posted Class debate sides and topic assigned today
	11	June 14		Final essay topics must be approved by today Pop vs Peer Assignment - Presentations (paper due at beginning of class)
	12	June 19		Final Essay Due at beginning of class Survey participation part 2 Class debate Assignment - Claim Evaluation Forms due at the beginning of class