



The University of Western Ontario
SOCIOLOGY 3353F-650

Pseudoscience

Fall 2024

Online

Instructor: Professor Laura Huey
Office Hours: online by appointment
Email: lhuey@uwo.ca

Teaching Assistants:
Office Hours: online by appointment
TA: Meaghan Furlano
Email: mfurlan4@uwo.ca
TA: Glenda Babe
Email: gbabe@uwo.ca

Course Description: This course explores the principles of scientific reasoning through examining extraordinary claims. We will probe questions of belief and knowledge by sorting through a morass of fads, conspiracies, gimmicks, and peculiar ideas to learn about topics such as: the scientific method, human biases and how bad ideas go viral.

Prerequisite(s): Registration in third or fourth year of any program.

Unless you have either the prerequisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. The decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

Anti-requisite(s): None

Course Objectives and Learning Outcomes:

Students will develop new knowledge and perspectives on the role of science, including being able to

- (1) identify and apply their understanding of the basic features of the scientific method.
- (2) describe the differences between science and pseudoscience.
- (3) understand the different types of claims people make and the ways in which those claims are presented in order to persuade an audience.
- (4) evaluate arguments and claims by applying critical reasoning

Course Material:

Readings have been uploaded for you on OWL. They are listed on the overview below. If, for some reason, you can't access them on OWL, you can go to the UWO library website, and you'll see each book and chapter is available to you for download in pdf form.

I have also taped a series of lectures for this seminar that are available to you in both audio and video formats. The PowerPoints are also available to you through OWL.

For access to the visual and audio version of the lecture, you can simply download the material through OWL and/or access videos via YouTube (see below).

Communication:

Students are responsible for checking the course OWL Brightspace site (<https://westernu.brightspace.com/d2l/login>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class. Otherwise, we will be using email for any questions, discussion, etc.

Method of Evaluation:

The evaluation methods described in the course outline are essential requirements for the course.

Evaluation

0 2 4 - 2 0 2 5

The evaluation methods described in the course outline are essential requirements for the course.

Belief assignment (email to lhuey@uwo.ca)	10 marks
Podcast assignments (2 x 20) (email to mfurlan4@uwo.ca)	40 marks
Term assignment (email to gbabe@uwo.ca)	50 marks

Belief Assignment

(DUE DATE: September 27th)

This is a very simple but important assignment. In two pages (double spaced), I would like you to consider a common belief or practice that has no scientific support for it and provide your theory as to why people believe in it.

For example, why do people believe in astrology? Ear candling? Reiki?

You may choose to discuss one of the above, although I would prefer you to come up with your own example.

Again, this assignment asks you to: a. identify a common unsupported belief/practice; b. provide examples of people believe in X despite the lack of scientific support, and; c. provide your own explanation for why people believe in X.

I will be grading this assignment, so please email your assignments to me at lhuey@uwo.ca

Podcast Assignments

(DUE DATE: November 1 and November 15) Although we will be reasonably flexible with these dates, please note I cannot accept work later than **December 5, 2024**.

I am asking you to turn in **reviews** of **2** of the selected podcasts. These assignments are to be approximately 3-4 pages double-spaced.

For these reviews, you will be expected to provide a succinct brief on the key takeaways or messages you learned from listening to the podcast. A lot of this content will tie into ideas, concepts, research from class, so ***make sure that, when possible, you draw links between the podcast and what you learned from lectures and other course content (such as readings) provided for in this class.*** Of course, we are happy to accept your work by email.

These assignments will be evaluated by Meaghan Furlano; please email your podcast assignments to her at mfurlan4@uwo.ca. If you have questions about this assignment, you should first direct them to Meaghan.

Video Term Assignment

(DUE DATE: November 30th):

I am asking you to turn in a thoughtful, detailed **review** of 1 of the selected YouTube videos.

As with the podcast reviews, you will be expected to provide a succinct brief on the key takeaways or messages you learned from listening to the video. A lot of this content will tie into ideas, concepts, research from class, so ***make sure that, when possible, you draw links between the podcast and what you learned from lectures provided for in this class (including readings).*** Of course, we are happy to accept your work by email.

You will be expected to hand in a 6-8 page comment piece that:

Detailed knowledge of a topic (including references to concepts, ideas, papers and/or discussions from class – **this is your chance to show what you learned**).

This assignment will be run by your Teaching Assistant (under my supervision). S/he will be your point of contact for working out your ideas, asking questions about expectations, providing insight into evaluation, etc. Please feel free to make the best use of their assistance.

This assignment will be evaluated by **Glenda**; please email your assignments to her at gbabe@uwo.ca. If you have questions about this assignment, you should first direct them to your TA first.

Your assignment is officially due November 30th. We can accept the assignment up to December 6th without requiring documentation from Academic Counseling. Beyond this date, your Professor will require a request from Academic Counseling based on a documented reason.

Course Schedule and Readings:

Course Introduction – September 13th Microsoft Teams meeting at 1pm. I will send everyone a Teams meeting invite through your UWO email account. If you can't make it, do NOT worry! I have also taped a greeting for OWL that goes over many of the same things and we can always email or schedule a time for any unanswered questions.

Getting started

Information/False Information

Topics covered: Where do most people get their information from? Evaluating information sources. Why we need to be critical consumers. The TRAAP method. "Fake News".

Reading: Newton Lee's (2014) "Misinformation and Disinformation" from Facebook Nation.

Scientific and other forms of knowledge

Science

What is science? How is science different from other forms of knowledge? Why should we trust Science when scientists don't even agree? Let's look at this through climate change and other issues.

Reading: Paul Offit's (2018) "What Science Is – And Isn't" from *Bad Advice: Or Why Celebrities, Politicians, and Activists Aren't Your Best Source of Health Information*

Evidence

What is evidence? Evidence versus data. Evaluating claims made with different types of evidence, including anecdotes. Assessing claims using the same evidence. The great bacon debate.

No assigned reading for this topic

Why do people believe the things they do?

A Short History of Strange Ideas

Topics covered: A look at the types of beliefs people have held over the centuries. The socio-cultural reasons for why certain ideas appear at a given time. Magical elixirs, diet fads, conspiracy theories and astrology.

Reading: Daniel Loxton and Donald R. Prothero's (2013) "Why do People Believe in Monsters? The Complexity of Cryptozoology" from *Abominable Science: Origins of the Yeti, Nessie and Other Famous Cryptids*.

Emotions and Decision Making

Topics covered: Drawing on the Sociology of emotions, we look at anger, fear,

uncertainty and other emotions in decision making. Magical thinking. Vaccine theories and conspiracies.

Reading: Geoffrey Beattie and Laura McGuire (2018) “Our Rational and Irrational Selves” from The Psychology of Climate Change.

Biases, Group Think and Distortions

Topics covered: Common errors in reason, logic and decision making. The role of peer pressure and group think. In-group/Out-group, identity and beliefs. How gender, race, age, sexual identity and other factors combine to increase or decrease willingness to hear different points of view.

Reading: Geoffrey Beattie and Laura McGuire (2018) “See No Evil” from The Psychology of Climate Change.

Celebrity Trends and Fads

Topics covered: Celebrities as role models. The role of social influencers in shaping consumer and other behaviors. Health and beauty advice and products from celebrities and influencers. Healing vibrations, diamond water and psychic vampire repellent.

Reading: Paul Offit’s (2008) “Next, on Oprah” from Autism's False Prophets: Bad Science, Risky Medicine, and the Search for a Cure.

The World Online

Topics covered: The role of social networks in reinforcing beliefs. How ideas go viral. Social media manipulation (buying ads, followers). Twitter and Facebook vs. Reality. TikTok and Instagram as the newest markets for shaping behaviours and preferences. The Benadryl Challenge. The Coronavirus Challenge.

Reading: Tom Nichols’ (2017) “Let Me Google That for You” from The Death of Expertise: The Campaign Against Established Knowledge and Why It Matters

Politics and Propaganda

Topics covered: What about the role of governments in hyping fears or engaging in denialism? What is propaganda. How is propaganda different from other forms of misinformation? Propaganda techniques. The role of states and influential non-state actors in creating propaganda. Examples of state actors putting out pseudoscientific misinformation. Hydroxychloroquine and Covid-19.

No assigned reading this week

Getting critical

Evaluating Expertise

Topics covered: Understanding and evaluating expertise. How to become a media expert.

Why Wikipedia is not an expert source. Why people distrust experts. When experts do get it wrong. Cold fusion and the death of the Shah of Iran.

Reading: Massimo Pigliucci's (2018) "Who's Your Expert?" from *Nonsense on Stilts: How to Tell Science from Bunk*.

Spotting Bad Numbers

Topics covered: Scared of math & stats? **No problem!** 10 tricks for spotting dodgy claims involving numbers and graphs (for the non-stats person). Fancy packaging to hide false claims. Listening to your intuition when things aren't adding up. Digging deeper with Prof. Google.

No assigned reading this week

Challenging Pseudoscience

Topics covered: Why challenge misinformation? Isn't truth relative? Pseudoscience can hurt your health and wellbeing. Skepticism versus cynicism. Dissent and speaking up. Science communication. Arming yourself against 'fake news'.

Reading: Yasmin Ibrahim's (2020) "History of Fake News" from *Fake News in an Era of Social Media: Tracking Viral Contagion*.

2024-2025

Student Absences:

If you are unable to meet a course requirement due to illness or other serious circumstances, please follow the procedures below.

University policy on academic considerations are described [here](#). This policy requires that all requests for academic considerations must be accompanied by a self-attestation. Further information about academic considerations, and information about submitting this self-attestation with your academic consideration request may be found here. Please note that any academic considerations granted in this course will be determined by the instructor, in consultation with the academic advisors in your Faculty of Registration, in accordance with information presented in this course outline.”

Students must familiarize themselves with the [Policy on Academic Consideration – Undergraduate Students in First Entry Programs](#). Students missing course work for medical, compassionate or extenuating circumstances can request academic consideration by completing a request at the central academic consideration portal. Students are permitted one academic consideration request per course per term without supporting documentation. Note that supporting documentation is **always** required for academic consideration requests for examinations scheduled by the office of the registrar (e.g. December and April exams) and for practical laboratory and performance tests typically schedule during the last week of the term. Students should also note that the instructor may designate one assessment per course per term that requires supporting documentation. This designated assessment is described elsewhere in this document. Please note that any academic considerations granted in this course will be determined by the instructor of this course, in consultation with the academic advisors in your Faculty of Registration, in accordance with information presented in this course outline. Supporting documentation for academic considerations for absences due to illness should use the [Student Medical Certificate](#) or, where that is not possible, equivalent documentation by a health care practitioner.

Students with an approved absence from an in-class test or exam will be required to write a makeup exam. Course professor or teaching assistant(s) may not be available to respond to questions during the makeup exam. Students should be aware that the make-up test will not necessarily be in the same format, be of the same duration, or cover the same material as the original test.

Artificial Intelligence:

All assignments must be completed independently, without the aid of artificial intelligence (AI).

Within this course, students are permitted to use AI tools exclusively for information gathering and preliminary research purposes. These tools are intended to enhance the learning experience by providing access to diverse information sources. However, it is essential that students critically evaluate the obtained information, exercise independent thinking, and engage in original research to synthesize and develop their own ideas, arguments and perspectives. The use of AI tools can serve as a starting point for exploring a topic, with students expected to uphold academic integrity by appropriately attributing all sources of information and avoiding plagiarism. Essays, written assignments and/or lab reports should reflect the student’s own thoughts and independent written work. Students should also generate their own figures (e.g., graphs, diagrams) rather than using AI generated ones. By adhering to these guidelines, students contribute to a responsible and effective learning environment that promotes critical thinking, independent inquiry and all them to produce original written contributions. The same

principles also apply to the use of translation software to support the writing the essays and other written assessments.

Academic Policies:

Please review the Department of Sociology “[Important Academic Policies](#)” document

https://sociology.uwo.ca/undergraduate/courses/Academic_Policies.pdf for additional information regarding:

- Scholastic Offences
- Plagiarism
- Copyright
- Course Selection
- Absence from Course Commitments
- Missed Tests and Exams
- Religious Accommodations
- Accessibility Options
- Mental Health
- Gender-Based and Sexual Violence statement

2024-2025