

INQ 251: Science, Pseudoscience and Nonsense

Fall 2018

Location: Trex 374

Time: TTh 10:10-11:40

Instructor: Dr. Evan M. Aguirre

Email: aguirre@roanoke.edu

Office Hours: TTh 1:30-2:30, MW 2:30-3:30, also by appointment

Office: Trexler 266B

Required Texts:

Schick, Theodore and Lewis Vaughn. *How to Think About Weird Things*, 7th ed., McGraw-Hill, 2013.
ISBN: 978-0073535777

Hines, Terrence. *Pseudoscience and the Paranormal*, 2nd ed., Prometheus, 2003.
ISBN: 978-1573929790

Overview

INQ 251 is an interdisciplinary course in which we study the nature of the scientific enterprise, and how science and the knowledge obtained from science affects our lives and shapes our understanding of the world. This course also seeks to develop your critical thinking skills through the study of past and current controversial topics that involve science or claim to be supported by science. In modern society we are inundated with all kinds of information: the Internet, TV, the radio, the newspaper, magazines and books, and in our daily contact with others. Unfortunately much of this information is incomplete, biased, or just outright false. Since we base many of our actions on what we learn from these sources, it is important to have skills to critically evaluate this information. We will discuss and apply the main kinds of deductive and inductive arguments and be able to recognize them as they are used to influence all of us every day. In addition, you will also understand the role of evidence in rational inquiry and be knowledgeable of the many pitfalls of human “common-sense” intuition, as well as the proper interpretations of probabilities in the evaluation of such evidence. We will utilize and explore many popular mysteries such as ESP, Ghosts, Astrology, the Bermuda Triangle, visitation by extraterrestrial beings (UFOs), and others in our discussions.

Intended Learning Outcomes

By the end of this course, successful students will be able to:

- apply scientific methodologies and concepts appropriate for the course’s discipline and topic.
- write about course topics clearly and effectively.
- communicate effectively about the course topic in an oral format.

- discuss and apply the main kinds of deductive and inductive arguments, and be able to recognize them as they are used to influence historical and popular thinking about science, pseudoscience, and nonsense.
- use evidence in rational inquiry and recognize the many pitfalls within human “common sense” intuition, as well as the proper interpretations of data, in the evaluation of such evidence.
- use facts, ideas, and competing hypotheses to delineate fact from fiction as they pertain to questions of science.

Attendance

You are expected to attend every class. If you do not attend class or are consistently late you will lose many points and will receive a poor grade. If you are going to be absent from class then please notify me ahead of time. You are accountable for all work missed because of an absence. According to the college, I am required to take attendance.

Evaluation

This course expects you to spend at least 12 hours of work each week inside and outside of class.

Grading

Late work will be accepted up to a one class period late but with a 40% deduction in value.

Critiques	10%	Daily Quizzes	10%
Group Presentation	15%	Homework	10%
Term Paper	10%	Exams	20%
Individual Presentation	10%	Final Exam	15%

The grading scale is as follows: **A** 100-90, 90 < **B** < 80, 80 < **C** < 70, 70 < **D** < 60, **F** < 60. I will not be giving pluses and minuses.

Daily Quizzes

Since participation is an essential part of this course, it is critically important that you come to class prepared by reading the required material. As such, most class periods will begin with a brief quiz based on the daily reading assignment. I will throw out your lowest quiz grade. The quizzes will also act as attendance.

Homework

There will be weekly homework assignments. In all cases logical and tightly-reasoned explanations of your answers are more important than the answers themselves.

Exams

There will be two exams during regular class time and a final exam will be given involving multiple-choice and short-answer questions. All material covered in class, including student presentations, is fair game for exam material. Make-up exams will **only** be allowed as a result of a discussion with me beforehand (with *very* compelling reason) or in emergency situations (death, hospitalization, court, etc.). **The final exam is Dec. 13th from 8:30-11:30.**

Group Work/Group Presentation

Very early in the semester you will be asked to indicate a topic (from a list you will receive) in which you are most interested. I will then group you with others according to your indicated interest. As a group you will meet outside of class and prepare a half-hour presentation and discussion that will be held in class on a specified date.

Critiques

Each group presentation will be analyzed by the rest of the class in the form of a written critique. Note, if you are part of the presentation, then you will not have to turn in a critique for that week.

Term Paper and Individual Presentation

You will have to write a single term paper to count for 10% of your total grade. The topic of the paper is to be some pseudoscientific topic of your choice (different from your group report topic). The topic can be any of those listed on the handout to be provided, a topic from any of the textbooks, or a topic found through your own research and interest. The instructor must approve all topics, and each student must choose a *different* topic. In addition, you will be responsible for a short (10 minute) presentation to the class on your topic. This individual presentation will count for 10% of your course grade.

Misc.

Cell phones must be put away for exams. Computers will not be allowed for note taking. Disruptive behavior is not acceptable. This class will revolve around topics that might be controversial so please keep an open mind and do not insult/judge another person's beliefs. You are encouraged to attend one of the MCSP Conversation Series talks throughout the semester. I will award extra credit (1%) if you write up a report of what you learned. The report is due one week after the talk. Although 1% may not seem like much, it can bump you up a letter grade.

Academic Integrity

I subscribe to the college academic integrity (AI) policies linked below. Students are expected to be familiar with these policies. As in real life, failure to learn the rules is not an excuse. Please contact

me if you have any questions. Be aware that I am contractually obligated to report students if I suspect that they have engaged in academic dishonesty.

During in-class activities, I encourage you to discuss topics and learn from each other. However, unless specifically stated otherwise, you are expected to individually complete all steps of the activity and to turn in your own work. Homework and other assignments (unless specifically stated otherwise) are to be completed individually. Misrepresentation of your contribution to a group effort will be considered a violation of the academic integrity policy. Copying and pasting directly from a web site and claiming it as your own work is the same as copying and pasting directly from a book—both are violations of the academic integrity policy and will be treated accordingly. The full AI policy can be found online at: <http://roanoke.edu/A-Z Index/Registrar/Policies and Information/Academic Integrity.htm>.

Writing Center

The Writing Center @ Roanoke College is located in the library. Students meet with trained peer writing tutors in informal, one-on-one sessions. Writers may meet with tutors at any point in the writing process, from brainstorming to drafting to editing. Please make use of this resource, and note that you may consult tutors for assistance when preparing your in-class presentations, as well.

Special Services

Accessible Education Services (AES) is located in the Goode-Pasfield Center for Learning and Teaching in Fintel Library. AES provides reasonable accommodations to students with documented disabilities. To register for services, students must self-identify to AES, complete the registration process, and provide current documentation of a disability along with recommendations from the qualified specialist. Please contact Dr. Sue Brown, Director of Academic Services and Acting Coordinator of Accessible Education Services, at 540-375-2247 or by e-mail at sbrown@roanoke.edu to schedule an appointment. If you have registered with AES in the past and would like to receive academic accommodations for this semester, please contact Dr. Brown at your earliest convenience to schedule an appointment.