

INQ 251-C: Science, Pseudoscience and Nonsense

Spring 2018

Location: Lucas 227

Time: MWF 12:00-13:00

Instructor: Dr. Jarrett L. Lancaster

Email: jlancaster@roanoke.edu

Office Hours: MWF 10:30–11:30, Thu 11:00-12:00, also by appointment

Office: Trexler 264B

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

Lundsford, Andrea. *Easy Writer*, 6th ed., Bedford, 2016.
ISBN: 978-1319050764

Note: If you began your journey at Roanoke before Fall 2017 and have a copy of Hacker's *A Writer's Reference* from a previous INQ course, you do **not** need to purchase *Easy Writer*.

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.

Evaluation

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.

Homework

Assignments will be posted on Inquire. In all cases logical and tightly-reasoned explanations of your answers are more important than the answers themselves.

Exams

A midterm 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 dates are:

Midterm Exam: Wednesday February 21, 2018

Final Exam: Wednesday April 25, 2018, 8:30-11:30 am

Grading

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

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. Each group member must show a familiarity with material on the selected topic as discussed in Hines, and must go beyond the level presented in the book.

Each presentation must present both the “pro” and “con” sides of each case using the available evidence, citing some recent references, and giving some evaluation of the strength of the evidence. This is a cooperative project with each member contributing equally to the presentation; however, each participant will be graded separately according to the information and style of presentation.

Preparation

The group must research their topic in depth. A minimum requirement is that each member must be able to show a detailed understanding of the topic as presented in Hines’ text. This is the starting point. It is expected that each group member will research the topic using the library, Internet and other resources. The group should meet and share the material. Decide how the presentation will proceed and assign responsibilities to each member of the group, but only after each has done adequate research and contributed a fair share to the pool of information.

You will prepare a two-page outline of the presentation and a list of sources (books, magazine or journal articles, URLs, etc.). This outline must be turned in to me the week before your presentation. You are encouraged to be imaginative in your presentation. Please make use of visual aids including pictures, video clips, models, charts, graphs. PowerPoint is strongly recommended. Demonstrations, audience participation, guest speakers and other techniques are welcome with the prior approval by me. Email a draft of your presentation materials to me the Monday before the presentation.

Please go through a rehearsal of your presentation with all group members present. The goal is a structured, smooth, and information rich presentation that focuses on justifying major points with in-depth references. More detailed information about the requirements for this project will be provided during the first week of class.

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.

Critiques must be turned in by 11:59 pm on the Wednesday after the presentation.

Additional information will be provided.

Term Paper and Individual Presentation

You will have to write a single term paper to count for 15% 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. MLA format citations (as described in *EasyWriter*) are required. 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. A separate handout concerning the details of the paper and individual presentation will be provided.

Attendance

You are expected to attend every class. Attendance is checked at each meeting through the daily quizzes. If you are going to be absent from class then I must be notified ahead of time. **Being late to class by more than five minutes will be considered an absence. If 5 classes are missed without prior notification, then I will assume you are not interested in completing the course, and you will be dropped from the class (DF).** You are accountable for all work missed because of an absence.

Common Courtesy

Though I encourage a lively, engaged, interactive classroom atmosphere, certain behaviors will not be tolerated. These include the use of a cell phone or other noisy electronic device, whispering/talking with your neighbor when not relevant to the discussion, and any other behaviors normally considered to be disruptive. Repeat offenses will be considered grounds for dismissal from the class with a grade of DF.

Grading Scale

A	93-100	B	83-86.9	C	73-76.9	D	63-66.9
A-	90-92.9	B-	80-82.9	C-	70-72.9	D-	60-62.9
B+	87-89.9	C+	77-79.9	D+	67-69.9	F	<60

Make-up Quizzes and Homework

Make-up quizzes will not be given and **no late submission of assignments will be allowed.**

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.

Tentative Schedule

The following schedule outlines the timeline for the topics to be covered and highlights the reading for which you are responsible. Also pay close attention to the timing of exams, presentations and the due date for the term paper. **You should expect to spend at least 12 hours inside and outside of class each week on this course.**

Dates		Read Before		Who's Presenting on Wednesday	What's Due by 11:59 p.m. Friday
		Schick and Vaughn	Hines		
January	15, 17, 19	Ch: 1&2	Ch: 1, all	--	
	22, 24, 26	Ch: 3	Ch: 2, pp. 66-73	--	
	29, 31, 2		Ch: 3, pp. 91-101	Group 1: Psychic Predictions	
February	5, 7, 9	Ch: 4	Ch: 3, pp. 101-106	Group 2: Ghosts and Hauntings	
	12, 14, 16	Ch: 5	Ch: 3, all	Group 3: Near Death Experiences	Term-paper proposal
March	19, 21, 23	Test: Chapters 1-4 of Schick and other material discussed in class			
	26, 28, 2	Ch: 5	Ch. 7, Ch. 8	Group 4: Reincarnation	
	5, 7, 9		Spring Break		
	12, 14, 16	Ch: 6	Ch: 9, pp. 303-305	Group 5: UFOs	
	19, 21, 23	Ch: 7	Ch: 11, pp. 358-362	Group 6: Ancient Astronauts	Annotated bibliography
26, 28	Ch: 11, pp. 362-370		Group 7: Homeopathy		
April	2, 4, 6	Ch: 8	Ch: 11, all	Group 8: Therapeutic Touch	
	9, 11, 13	Individual Student Presentations (10 minutes each)			Draft of paper
	16, 18, 20	Individual Student Presentations (10 minutes each)			
	23	Individual Student Presentations (10 minutes each)			Final paper
	25	Final Exam: Comprehensive including content from student presentations.			