

INQ 251-C: Science and Pseudoscience
Syllabus - Spring 2023

Location: Trexler 372

Instructor: Dr. Daniel Hickox-Young (Dr. H-Y)

Office Hours: MWF 11:00am-12:00pm;
TuTh 1:00-2:00pm;

Time: TuTh 10:10-11:40am

E-mail: hickoxyoung@roanoke.edu

Office: Trexler 266A

Phone: (540) 375-4975

Office Hours: Office hours will be held in-person in Trexler 266A. If you are unavailable during office hours, feel free to stop by any time my door is open. I'm also happy to meet by appointment via zoom using the link provided below (also linked on Inquire) if you prefer. <https://roanoke-edu.zoom.us/my/hickoxyoung> Meeting ID: 848 844 3643 No Passcode is required.

To schedule an appointment, either send me an email (especially if you need to meet outside normal working hours) or use calendly (which is linked to my calendar):

<https://calendly.com/hickoxyoung>

Required Course Textbooks:

Schick, Theodore and Vaughn, Lewis, How to Think About Weird Things: Critical Thinking for a New Age, 8th ed., McGraw-Hill, 2019. ISBN: 978-1259922558

Lundsford, Andrea, EasyWriter, 7th ed., Bedford, 2018 ISBN:
978-1319149505

Optional Course Textbook:

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 affect our lives and shape 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 the 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.

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 and pseudo-science.
- 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.

Discussion Forums and Homework: This course is built on participation. The best way to learn about analyzing strange claims is to practice. We will have opportunities to practice during class, but our time together will be most rewarding for everyone involved if we “prime the pump” outside of class. In addition to keeping up with the readings, this means participating in regular discussion forums on Inquire. These forums will encourage you to start thinking about how to apply the reading in different context and help prepare you for class. As such, I would strongly encourage you to post a comment (or reply to someone else's thread) prior to the start of class.

There will be a very small number of homework assignments throughout the semester. These will be graded for completion and contribute to your participation grade.

Attendance Policy: If you have a temperature of 100.4 or higher or other COVID symptoms, don't come to class. Call Health Services IMMEDIATELY. Do not come to class or go to any public area on campus. In order for your absence to be excused, you must give Health Services permission to notify me that you have consulted them about COVID symptoms. If Health Services informs you that you should isolate and not attend class for multiple days, inform me so that we can make a plan to keep you current in the course. All absences caused by consultation with Health Services about coronavirus symptoms or isolation ordered by Health Services will be excused but you will need to do the work and graded assignments even if we extend a deadline for you.

Formal attendance will not be taken in this class. However, I will be assessing your participation in the course based on your engagement with a variety of activities and discussions which will take place during class. You are fully responsible for the material that was covered and for any announcements made during class meetings. To avoid any penalty to your participation grade for a class during which you must be absent, please contact me 24 hours in advance explaining the situation (emergencies excepted of course).

Late Work Policy: If you are unable to complete an assignment by the posted deadline, email me explaining the situation prior to the deadline and we will set a new deadline. Work that is turned in late without prior approval (i.e. a “no-call, no-show”) is still eligible for 75% of the credit that it would have received had it been turned in on time.

Exams: Two midterm exams will be given involving multiple-choice and short-answer questions. All material covered in class, including student presentations, is fair game for exam material. If you need to make up an exam for excused reasons (family or medical emergencies, university-recognized commitments, etc.), I am happy to accommodate. When possible, please communicate that you will miss the exam at least 48 hours in advance (emergencies excepted of course). If you miss the exam for an unexcused reason and do not communicate with me ahead of time (a “no-call no-show”), you may still arrange a time with me to complete the exam for up to 75% of the original points available. Exams will be held in class unless otherwise specified (i.e. for make-up exams).

Group Work/Group Presentations: Very early in the semester you will be asked to indicate a topic (from a handout list) 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 halfhour presentation and discussion that will be held in class on a specified date. Each group member must show a familiarity with any course material on the selected topic, and must go beyond the level presented in class. 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. In addition to demonstrating facility with any course materials related to the topic, it is expected that each group member will research the topic using the library, internet and other resources.

The group should then meet and share the materials they have found. Next, decide how the presentation will proceed and assign responsibilities to each member of the group.

The group will then 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, and graphs.

Slide shows are the typical medium used in these presentations, but demonstrations, audience participation, guest speakers and other techniques are also welcome.

Email a draft of your presentation materials to me the Tuesday 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 with a focus on justifying major points with in-depth references.

Timeline

- Outline of presentation and presenters — **due one week before presentation.**
- Draft of PowerPoint presentation — **due the Tuesday before the presentation.**
- Final Presentation and List of used resources in the format of a bibliography — **due presentation day.**

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 (i.e., you do not critique your own work).

Each student must choose three presentations to critique throughout the semester.

Critiques must be submitted to the corresponding Inquire link by 11:59 pm on the Thursday following the presentation.

Term Paper and Individual Presentation: You will have to write one term paper (8-12 pages, double-spaced), which counts for 15% of your total grade. The topic of the paper is a pseudoscientific issue 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. 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. The 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.

Use of Electronic Devices: You can use personal laptops and/or tablets for class meetings and taking notes. While in a class meeting, your phones must be on silent mode and out of reach to limit distractions and must be turned off during exams.

Grading: Class grades will be calculated according to the following distribution

- Participation 25%
(In-class + Discussion Forums + HW)
- Group Presentation 15%
- Critiques 15%
- Term Paper 15%
- Individual Presentation 10%
- Midterm 1 10%
- Midterm 2 10%

Letter grades will be assigned at the end of the semester according to the following scale

A-	90-92	A	93-100		
B-	80-82	B	83- 86	B+	87-89
C-	70-72	C	73- 76	C+	77-79
D-	60-62	D	63- 66	D+	67-69
F	<60				

You should expect to spend at least 12 hours inside and outside of class each week on this course.

Accessible Education Services (AES): 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 Becky Harman, Assistant Director

of Academic Services for Accessible Education, at 540-375-2247 or by e-mail at aes@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 Becky Harman at your earliest convenience to schedule an appointment and/or obtain your accommodation letter for the current semester.

Academic Integrity: Your learning and integrity are at the core of your RC education. For this reason, you must follow the rules outline in the College's AI policies.

Throughout this class, I expect you to discuss and learn from one another. There will be many opportunities throughout the course to collaborate. However, individual assignments must be composed of your own work, in your own words. Even in group projects, misrepresentation of your contribution to a group effort will be considered a violation of the academic integrity policy.

You will be permitted a single page front-and-back during exams. No other resources will be permitted. Please refrain from discussing the exam until I have informed you that all students have taken the exam.

Copying and pasting directly from a website 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.

If I become aware of a possible violation of these guidelines, I am contractually obligated to report it to the Academic Integrity committee. The AI policy can be found online at: https://www.roanoke.edu/inside/a-z_index/academic_affairs/academic_integrity/resources_for_students

The Writing Center: located on the Lower Level of Fintel Library. It offers tutorials focused on writing projects and oral presentations for students working in any field. Writers and presenters at all levels of competence may consult the Writing Center at any point in their process—including brainstorming, drafting, organizing, editing, or polishing presentation skills—to talk with trained peer tutors in informal, one-on-one sessions. Schedule a virtual or in-person appointment by going to www.roanoke.edu/writingcenter, where staff members and workshops are also posted. If it becomes necessary to temporarily discontinue face-to-face services at any time, online tutorials will still be available. Questions? Email writingcenter@roanoke.edu or call 540-375-4949.

Class Environment: I consider this classroom to be a place where we will treat one another with respect, creating an environment that welcomes individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability – and other visible and nonvisible differences. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records.

INQ 251-C: Science & Pseudoscience, Spring 2022- Daily Schedule

The following schedule outlines the tentative timeline for the covered topics and exam dates:

<i>Week</i>	<i>Day</i>	<i>Reading (Schick and Vaughn)</i>	<i>Group Presentation</i>	<i>Term Paper Deadlines (by 11:59 p.m.)</i>		
1	17 Jan		--			
	19 Jan	Ch: 1&2	--			
2	24 Jan	Ch: 3	--			
	26 Jan		--			
3	31 Jan	Ch: 4	--			
	02 Feb		Group 1: Psychic Predictions			
4	07 Feb	Ch: 5	--			
	19 Feb		Group 2: Ghosts and Hauntings			
5	14 Feb		--	Term Paper Proposal		
	16 Feb	Midterm 1: Chapters 1-4 of Schick and all other material discussed in class				
6	21 Feb	Ch: 5	--			
	23 Feb		Group 3: Near Death Experiences			
7	28 Feb	Ch: 6	--			
	02 Mar		Group 4: UFOs			
SPRING BREAK – NO CLASS						
8	14 Mar	Ch: 7	--			
	16 Mar		Group 5: Ancient Astronauts	Annotated Bibliography		
9	21 Mar		--			
	23 Mar	Midterm 2: Chapters 5-7 of Schick and all other material discussed in class				
10	28 Mar	Ch: 8	--			
	30 Mar		Group 6: Homeopathy			
11	04 Apr	Individual Student Presentations (10 minutes each)				
	06 Apr			Draft of paper		
12	11 Apr					
	13 Apr					
13	18 Apr					
	20 Apr					
	01 May			Term Paper Due (by 11:30am)		