

INQ 110: Intellectual Inquiry Science, Myths, Magic and Chaos

Professor: Dr. Maggie Rahmoeller
Office: Trexler 270J
Email: rahmoeller@roanoke.edu
Class Meetings: MWF 2:20 – 3:20PM in Olin 230

Office Hours: By appointment only through drmaggie.youcanbook.me (or email me if no time slots available). You can book up to 3 days in advance but you have to book at least 15 minutes before the time slot.

Course Description: How do we know what we know? We hear that “seeing is believing” but the sights and sounds that reach our consciousness are heavily processed by our brains. Careful experimentation may establish isolated facts, but to utilize these facts we require stories that comfortably integrate them into our unique and flawed view of the world. Chaos theory shows us that complexity in nature can arise from simple processes. This confounds some of western philosophy and science. In this course, we examine the boundaries between fact and fiction, knowable and unknowable, and simple and complex.

Intended Learning Outcomes: At the end of the course, successful students will be able to

- describe ways in which scientific fields may differ from non-scientific fields, and discuss ways in which both types of fields may enhance our lives;
- describe ways in which our perception of the world is distorted by the brain, and how these distortions adversely affect our decision-making processes;
- describe different types of myths used to simplify life, and the importance of these myths in our view of the world;
- describe the ways in which different magic tricks work, and discuss what this tells us about the inner workings of the brain;
- describe the butterfly effect, both mathematically and non-mathematically, and its implications for knowledge and prediction;
- analyze current science reporting to identify potential biases and oversimplifications, and discuss how we can develop informed opinions.

In addition to the topic-specific outcomes, all sections of INQ 110 have the following learning outcomes.

- Students will be able to read, discuss, and write about college-level academic texts and ideas.
- Students will be able to use a process of drafting to write papers that have clear theses, cogent argumentation, proper use of evidence, effective organization, and a minimum of sentence-level errors.
- Students will be able to use library and other resources to find, evaluate and synthesize information from multiple sources and use this information in support of a research question.

Required Materials:

- *Bully for Brontosaurus* by Stephen Jay Gould.
 - *Sleights of Mind* by Stephen Macknik, Susana Martinez-Conde and Sandra Blakeslee
 - *Easy Writer (6th edition)* by Andrea Lunsford
- Additional readings will be taken from other sources and be provided by me.

Attendance Policy: Regular attendance is expected. You must participate in class discussion! **If you have three unexcused absences, you will be dropped from the course. After the second absence, a warning letter will be sent to you, your advisor and the Registrar reminding you of this policy. If you miss a Peer Review/Workshop day, your grade on that paper will be reduced by one letter grade.**

Late Work: Each day an assignment is late, your grade on that assignment will be reduced by one letter grade. I will not accept assignments that are more than three days late.

I expect you to spend at least 12 hours of work each week inside and outside of class.

Academic Integrity: The college policy is fully supported. Doing your own work and properly acknowledging the work of others is of utmost importance in the academic setting. It is your responsibility to understand and abide by the policies outlined in the booklet “Academic Integrity at Roanoke College” that you received during orientation.

Papers: You will write three significant papers for this course. The assignments will be broken into stages that include initial planning, a first (well-thought-out) draft, a peer review process, consultation with me, substantive revisions, and a final draft. All of these pieces will affect your grade on the paper. More details will be provided later, but the topics are as follows.

1. **Chaos in the World.** A paper covering the human side (a specific story) and the historical side (with some “what if” speculation) of the butterfly effect. (4-6 pages)
2. **Science in the News.** A compare-and-contrast assignment, to carefully analyze the quality and validity of science reporting in various media including magazines and tabloids. (4-6 pages)
3. **Popular Myth.** A research paper using multiple sources, to investigate and analyze the use of myths within a movie, tv show, or book. (6-8 pages)

Writing Notebooks: You will be given a notebook for the semester, in which you will write responses to inclass questions or prompts, ideas for papers (short and long), and careful notes on assigned readings. These notebooks will be collected randomly at least twice throughout the semester.

Short Papers: Short papers may include expansions of reading responses, a reflection on revisions, a *Brain Games* paper, a personal butterfly effect, and a brief reflection essay at the end of the semester. I will read, offer feedback, and return these papers to you. After making appropriate revisions, you may re-submit up to three of these papers within 1 week of when I hand them back in class in order to potentially get a higher grade.

Presentation: You and a partner will present the main ideas from an episode of *Brain Games*. There will be an associated short paper to be turned in.

Co-Curricular: Roanoke College offers an incredible number of student- and faculty-run events on campus (talks, workshops, music/art/theatric performances, sporting events, civil discourse opportunities, club meetings/events, etc). During the semester, you must attend at least four approved (check with me beforehand) co-curricular events offered by the college, with 2 before Fall Break. For each, write a 1-2 page reflection, including a description of the event, specific aspects of the event that were of special interest to you, and how the event relates to this course (if at all). Papers are due within a week of the event.

You may attend up to 2 extra events (from the following list: academic success workshops and/or civil discourse opportunities) for extra credit.

Grading: Your grade will be determined by the following.

- 50% Three major papers (including drafts and peer responses)
- 15% Writing Notebook
- 20% Short papers
- 15% Presentations, co-curricular papers and class participation

A:	93-100	C+:	77-79	D+:	67-69
A-:	90-92	C:	73-76	D:	63-66
B+:	87-89	C-:	70-72	D-:	60-62
B:	83-86	F:	59 and below	B-:	80-82

The Writing Center @ Roanoke College, located on the Lower Level of Fintel Library, offers tutorials focused on writing projects and oral presentations for students working in any field. Writers and presenters at all levels of competence may visit 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. The Writing Center is open Sunday through Thursday from 4 to 9 pm. Simply stop in, or schedule an appointment by going to www.roanoke.edu/writingcenter, where our staff members and workshops are also posted. Questions? Email writingcenter@roanoke.edu or call 375-4949. Like our Facebook page for hours and event updates!

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 Laura Leonard, 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 Laura Leonard at your earliest convenience to schedule an appointment.

The Philosophy of the Course:

“Richard Feynman believed in the primacy of doubt, not as a blemish upon our ability to know but as the essence of knowing. The alternative to uncertainty is authority, against which science has fought for centuries. He believed that it was not certainty but freedom from certainty that empowered people to make judgments about right and wrong: knowing that they could never be more than provisionally right, but able to act nonetheless. Only by understanding uncertainty could people learn how to evaluate the many kinds of false knowledge that bombard them: claims of mind reading and spoon bending, belief in flying saucers bearing alien visitors. Science can never disprove such claims.” **James Gleick, *Genius***

“People say that what we're seeking is the meaning of life, but I don't think that's what we're really seeking. What we're seeking is the experience of *being alive*, so that the life experiences that we have on the purely physical plane will have resonance within those of our innermost being, so that we actually feel the rapture of being alive.” **Joseph Campbell, *The Power of Myth***

“Some stories are literally true; some of them are figuratively true; some of them are wrong. That’s the nature of stories, isn’t it? They show us all the highlights of the world, but they never leave us certain we can trust the things we know. We listen because they delight us, and mind them as much as they illuminate our hearts; but no one with a lick of sense ever trusts a tale he can’t verify himself.”

Alan Rodgers, *Bone Music*

“I try to not let the facts get in the way of the truth.” **Randall Wallace, writer for *Braveheart***

”Why do we read fiction, anyway? ... I think that most of us read these stories that we know are not ‘true’ because we’re hungry for another kind of truth: the mythic truth about human nature in general, the particular truth about those life-communities that define our own identity, and the most specific truth of all, our own

selfstory. Fiction, because it is not about somebody who actually lived in the real world, always has the possibility of being about oneself.” **Orson Scott Card, introduction to *Ender’s Game***