# INQ 110: Science, Myths, Magic, & Chaos

# **Fall 2022**

# Contact Me Meet with Me Class Info Name: Dr. Maggie Pronouns: She/Her/Hers Email: rahmoeller@roanoke.edu Meet with Me Class Info Location: Miller 212 Days: MWF Tues/Thurs 1:15-2:15PM Wed 2:30-3:30PM Or email me to meet at a different time!

### **Peer Mentor:**

### Luka Vacca

### lmvacca@mail.roanoke.edu

Luka is here to help you with transitioning to college – in academics, social aspects, and emotionally. He is a resource for you! A fellow peer to help you adjust to college life. He is currently majoring in Sport Management – feel free to ask him questions about this major!

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.

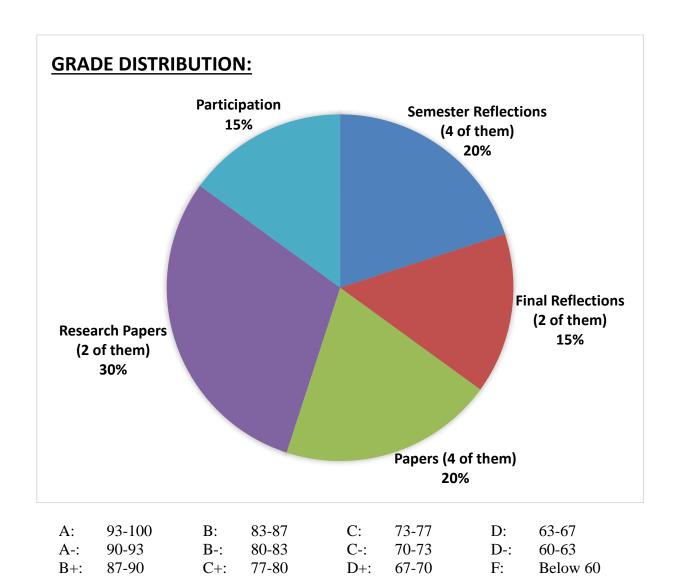
Your success in this class is important to me! We all learn differently and bring a variety of strengths and needs to the class. If there are aspects of the course that prevent you from learning or that make you feel excluded, please let me know as soon as possible. Together we'll develop strategies to meet both your needs and the requirements of the course.

### **Required Materials:**

- *Bully for Brontosaurus* by Stephen Jay Gould.
- Sleights of Mind by Stephen Macknik, Susana Martinez-Conde and Sandra Blakeslee
- Easy Writer (6<sup>th</sup> edition) by Andrea Lunsford

  Additional readings will be taken from other sources and be provided by me.

**Commitment Hours:** This course expects you to spend at least 12 hours of work a week inside and outside of class.



### **COURSE EXPECTATIONS**

**Class Structure:** Most class days will consist of a short informal writing and a reading discussion based on reading done before class. Occasionally we will have in-class assignments, peer review sessions, and library visits. Due to the many discussions and group work we will have in class, there will be a participation component to your grade.

You are expected to treat all students in the class and me with courtesy and respect. Your comments to others should be factual, constructive, and free from harassing statements. You are encouraged to disagree with other students, but such disagreements need to be based upon facts and documentation (rather than prejudices and personalities). My goal is to promote an atmosphere of mutual respect in the classroom. Please let me know if you have suggestions for improving the classroom environment. (Source: Iowa State University)

# **Diversity and Inclusivity**

I consider this classroom to be a place where you will be treated with respect, and I welcome 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.

**Attendance Policy:** Our course's success depends on you attending class! If you miss class, you will miss community building, engaging conversations, and information that I deem worthy of your time! Plus, we will miss you!

However, life happens! You may get sick, desperately need a mental health day, or have a game scheduled. It will not be the end of the world if you miss a class very occasionally. At some point, though, missing class can be detrimental to success. So, do your best to be in class! Strive for perfect attendance!

What should you do if you have to miss class? Let me know ASAP! Communication is key! I don't need details (please, spare me the details!) but do let me know ahead of time, so we can make plans, if needed. If you cannot let me know ahead of time (emergencies do happen!), just let me know as soon as you can. Email is typically the best form of communication for me.

If you are sick (and contagious), please either stay home OR come to class wearing a mask (unless you have COVID symptoms). CDC guidelines currently (as of Aug 2022) say that once your symptoms are gone or have lightened considerably, you may go out and about if you are wearing a mask (for at least 5 days). If you have symptoms or a fever, isolate.

Late Work: Whether or not to accept late work is always a tough decision. Life happens – and occasionally we need more time to complete tasks! But, sometimes turning in an assignment late causes more complications than benefits. If you don't do the reading required by class, you won't be able to fully participate in class, which is a detriment not just to you but also to your classmates. If you

don't complete a draft by the peer review session, you aren't giving another student a chance to work on editing. If you don't complete a part of a paper (topic, bibliography, etc) that doesn't have a peer review component, you have now fallen behind on that paper and it might be harder to catch back up! But, if you don't complete an assignment that doesn't have a follow-up, or doesn't have a peer review part to it, or doesn't determine how you can participate in the following class, then there is more leeway. Then it only affects you and me (because I cannot give feedback to all similar assignments at one time).

In other words, I can grant more leeway on certain types of assignments, those with *soft* deadlines. But *hard* deadlines cannot be changed.

The best thing you can do is *communicate* with me. Let me know if you have concerns about turning in an assignment on time – I will do my best to work with you. Unsure about whether an assignment has a hard or soft deadline? Ask me! But also check out the tentative schedule at the end of this document.

Academic Integrity: Students are expected to adhere to the Academic Integrity policies of Roanoke College (<a href="https://www.roanoke.edu/inside/a-z\_index/academic\_integrity">https://www.roanoke.edu/inside/a-z\_index/academic\_integrity</a>). All work submitted for a grade is to be your own work! Doing your own work and properly acknowledging the work of others is of utmost importance in the academic setting. We will have in-class discussions about plagiarism – ask me any questions you have! Our goal in INQ 110 is to prepare you fully for writing in ways that acknowledge the use of others' ideas and work.

### **COURSE ASSIGNMENTS**

**Research Papers**: You will write two 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, 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 pages)
- **2.** Popular Myth. A research paper using multiple sources, to investigate the truths and history behind a popular story or belief. Here, "myth" means a story that is used over time to pass wisdom or cultural content to the next generation. (4-5 pages)

**Papers**: You will also write four 1-2 page papers, each with the purpose of targeting one aspect of writing. The papers are:

- 1. A mathematics biography paper based on reflecting upon readings from class (2 pages)
- 2. A revision reflection based on your first paper, which acts as an introduction to EasyWriter and the revision process (2 pages)
- 3. A short writing on how science is portrayed in the news, focusing on thesis-based writing, which includes a revision process (1 page)
- 4. A short writing in which you will paraphrase a paragraph from an essay in *Bully for Brontosaurus* (1 page)

**Semester Reflections**: You will write four 1-2 page reflections on different topics throughout the semester. Two of these reflections are due by Fall Break. The other two are due by the last day of classes. The breakdown is as follows:

- 1. Co-Curricular Reflection (due pre-Fall Break)
- 2. Interview Reflection (due pre-Fall Break)
- 3. Co-Curricular Reflection (due post-Fall Break)
- 4. Interview Reflection (due post-Fall Break)

What do I mean by Co-Curricular?

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). Interested in learning about clubs on campus? Check out our Activities Fair – Sept 2, 4:30-6:30PM, Back Quad. We also have several events scheduled at Roanoke College shared here: <a href="https://www.roanoke.edu/inside">https://www.roanoke.edu/inside</a> under the Events sections. Check them out!

More information will be given on these reflections and will be posted on Inquire.

Journals: We will spend about 5 minutes each class period doing informal writing. Sometimes there will be a question posed or a topic to write about, other times it will be completely free writing. Sometimes getting over the fear of starting writing is a monumental task. One goal of this journal is to help overcome that fear. Another goal of this journal is to allow you to express yourself in writing...something we don't do enough of! And yet another goal is to help you improve your writing! I will not collect these journals, but I will want to see that you are using them throughout the semester.

**Final Reflections:** Not only will you have semester reflections, but we will also have two end-of-semester reflections, to help you wrap up your first semester at Roanoke College. More info to come!

**Participation:** In order to be successful in INQ 110, it's not enough to just attend class (yes, please attend class!). We will have a variety of discussions (paired, small group, and class) every class period! Some will be based on the readings (so, please, do the readings!), some will be based on your assignments, and some will be completely random! It depends on whether we get off topic...I love going off on tangents! We will also occasionally have some smaller in-class activities, which will require you being fully present in class and engaged! Let's make the most of our time together!

## **RESOURCES**

The Writing Center @ Roanoke College, located on the Lower Level of Fintel Library (Room 15), offers free 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 at <a href="https://www.roanoke.edu/writingcenter">www.roanoke.edu/writingcenter</a>. Questions? Email <a href="https://writingcenter@roanoke.edu">writingcenter@roanoke.edu</a> or call 540-375-4949.

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 Becky Harman, Assistant Director of Academic Services for Accessible Education, at 540-375-2247 or by e-mail at <a href="mailto:aes@roanoke.edu">aes@roanoke.edu</a> 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.

**Subject Tutoring**, located on the lower level of Fintel Library (Room 5), is open 4-9 PM, Sunday-Thursday. Subject Tutors are highly trained, current students who offer free, one-on-one (and small group) tutorials in over 80 courses taught at Roanoke College, including: Business, Economics, Mathematics, INQ 240, Modern Languages, Lab Sciences, and Social Sciences. Check out all available subjects and schedule 30- or 60-minute appointments at <a href="www.roanoke.edu/tutoring">www.roanoke.edu/tutoring</a>. If you have a question, feel free to stop by, or contact us at <a href="subject\_tutoring@roanoke.edu">subject\_tutoring@roanoke.edu</a> or 540-375-2590. See you soon!

**Student Health & Counseling Services** supports students through in-person health appointments, in-person counseling, 24/7 telehealth (TimelyCare), Therapy Assistance Online, as well as resources related to general wellness, LGBTQ+, sexual assault, substance abuse, and suicide prevention. Unmet

health needs can negatively impact your performance in this course. Student Health & Counseling Services can help. Please see <a href="https://www.roanoke.edu/shcs">https://www.roanoke.edu/shcs</a> for more information and to access services.

# **Tentative Course Schedule**

Date	Readings for Today	In Class Comments	Assignments
Aug 31		Intro to class!	
Sept 2	Math Instinct & Ants, Primates, etc.	Rdg discussion	P1 Assigned – Math Bio 2 Reflections Assigned
Sept 5	Ch 1 – Art of Logic	Small Groups – share reflections	P1 Due
Sept 7	BB – Median isn't the Message	Critical Reading Pt 1	P2 Assigned – Revision Reflection
Sept 9	Nature.com – Math Strikes a Blow	Gerrymandering!	P2 Due
Sept 12	Gerrymandering Articles	Rdg discussion	P3 Assigned – Thesis & Research
Sept 14		LIBRARY DAY!	
Sept 16		Small Groups – share themes	P3 – Themes Due
Sept 19	Thesis Resources	Small Groups – peer revision	P3 – Thesis Due
Sept 21	Introduction Resources	Small Groups – peer revision	P3 – Intro Due
Sept 23	EasyWriter – sections TBD	Critical Reading Pt 2	P3 Due
Sept 26	Paraphrasing Resources	Paraphrasing Pt 1	P4 Assigned – Paraphrasing
Sept 28		Paraphrasing Pt 2	
Sept 30	BB – George Canning	Rdg discussion	P4 Due
Oct 3	Chaos Theory Resources	Intro to Chaos	P5 Assigned – Chaos
Oct 5 Oct 7	BB – Panda's Thumb	Rdg discussion Small Groups – share	P5 – Chain Due
		chains	
Oct 10		LIBRARY DAY!	
Oct 12		Annotated Bibliographies	P5 – Bibliography Due
Oct 14		In-Text Citations	P5 – Annotated Bibliiography Due 2 Reflections Due
	FALL	BREAK	
Oct 24		Pre-Registration discussion	Exploration of RC Majors Due
Oct 26	BB – Streak of Streaks	Rdg discussion	
Oct 28		Draft Peer Review	P5 – Draft Due
Oct 31	BB – Creation Myths	Revisions & Citations	Pre Registration Spring Schedule Due
Nov 2	The Golden Age	Revisions & Citations	
Nov 4		Interview Day	P5 Due

Nov 7	BB – Knight Takes Bishop	Myths Activity	P6 Assigned – Myths
Nov 9		LIBRARY DAY!	2
Nov 11	SM – Intro & Ch 7	Rdg discussion	P6 – Topic Due
Nov 14		Small Groups	Interview Reflection Draft Due
Nov 16		Small Groups	
Nov 18		Small Groups	P6 – Annotated Bibliography Due
Nov 21	BB – Chain of Reason	Science vs Pseudo Science	
	THANF	KSGIVING BREAK	
Nov 28	BB – Justice Scalia	Science vs Pseudo Science	
Nov 30	SM – Ch 2	Neuroscience	
Dec 2		Draft Peer Review	P6 – Draft Due
Dec 5	SM – Ch 5	Rdg discussion & Magic	
Dec 7	SM – Ch 9	Rdg discussion & Magic	Final Reflections Assigned
Dec 9	SM – Ch 12	Rdg discussion & Magic	P6 Due 2 Reflections Due
Dec 14		No Meeting!!	Final Reflections Due