

Shortened Syllabus:
Unsolved Mysteries In the Universe
Astronomy 1270
MWF 12:00 – 12:50PM

How can you reach me?

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TA:
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What's this class all about?

We will explore big unsolved mysteries like where extraterrestrial life could be, why does time flow, what is the fate of the universe, what is free will, and how could you create a universe. We will think big together, make your brain hurt, and definitely stretch your comfort zone about your place in this giant universe. We will examine current knowledge about planets, stars, galaxies, and the laws of physics so we can dig into the unknown mysteries of the universe. My wish is that this class will be different than any class you've taken about astronomy and perhaps any science class, and you will be able to evaluate future progress in astronomy towards answering these questions for years to come.

What I want you to get out of this course.

- Identify what questions about the universe we have answered and what evidence we have to support modern scientific understanding.
- Connect foundational knowledge in astronomy to give context to the unsolved mysteries.
- Construct questions about the universe that we want to answer, we can not yet answer, and maybe we will never answer.
- Examine how astronomers and scientists are addressing persistent, unanswered questions in astronomy.
- Examine and reflect on how you understand big concepts, like free will, along side modern astrophysical knowledge.
- Learn some cool astronomy that you can impress your friends with!

How you'll know you are learning.

Weekly Blogs and Comments.

Each week, you will write a blog reflecting on a writing prompt that integrates foundational astronomy knowledge from class and from the reading. The writing prompt will be available on **Collab** → **Assignments**, and the accompanying rubric will be available with the assignment. In addition to a weekly blog, you will read your group member's blogs and leave a comment. We will use the blogs as starting points for in-class discussions.

Active participation during in-class discussions.

We will have regular in-class discussions primarily in small groups and with the whole class. Having everyone actively engage in these discussions will enrich the content, as you all bring unique inquiries and views to this class. In class, we will analyze current progress, missions, and results in astronomy through articles and primary sources like published papers. Through these discussions, we will connect the foundational knowledge of astronomy that you acquire in the reading to these articles and discuss the larger picture about what these results mean in astronomy. We likely work in small groups or pairs, so it is okay if you cannot always bring a laptop/smart phone or another internet accessible device. If you **can** bring a laptop to class, please do so as it will help us out. That being said, please be respectful of when we're **not** using the laptops in class and not have it open.

Essays.

While the weekly blogs are meant to keep you thinking about the readings and course material, the essays are your chance to prove your understanding of the material and to explore deeper concepts, like the inquiries I posed in the course description! I will provide a rubric for each essays well in advance on Collab.

Quizzes.

Every week, you will complete a quiz. The quizzes are on Collab and will be between 5 — 15 questions. The content of the quizzes will come from the week's reading and lecture material. These quizzes are useful for you and me to gauge your comprehension of core concepts we cover in class so we can move on to more complex topics. **These quizzes are unsupervised and open book, but I expect you to complete the quizzes by yourself (i.e., don't do them with a friend) and without googling answers. If I begin to suspect otherwise, they will become in class quizzes, closed book, and harder :)** . Finally, there is **not** a final exam, but see Science Article Analysis Project.

Self Reflections.

I will ask you to periodically reflect on how you are doing in this class, how you are meeting your expectations, how are meeting my expectations, and how might I improve the class *during the current semester*. I care about how I'm teaching, and if what I'm doing isn't working for you, I want to know. I will try to be flexible within the semester to also adjust my pedagogy. These short reflections will be available on Collab, and you will have a number of days to complete each reflection at your own pace.

Science Article Analysis Project (Potentially Optional).

Sometimes newspapers and magazines report science well. Sometimes they editorialize the scientific study or result. I think it is important to develop a sense of when the article is too “click bait-y”. This project guides you through that experience, and you will prepare a set of **essays** and deliver a **presentation** comparing a current headline that relates to a class topic against the source study and the knowledge you have gained in class. At each step, the TA and myself will advise you and offer support through this project. See the rubric and project prompt on **Collab — > Assignments —> Science Article Analysis Project**. More information about the “potentially optional” portion will be given in class.

There may be some presentations during the final exam's time slot. I expect all to show up to the final exam to be a respectful audience to your peers.

—— End. Full syllabus will be provided the first week of class ——