

# Science and Human Nature

COR-400 Fall 2022

## MEETINGS

Section 001 MWF 9:15AM-10:15AM

Section 006 MWF 11:45AM-12:45PM

## INSTRUCTOR

Marisel Meier  
Associate Professor of Physics

## BEST WAYS TO REACH ME

Email: [mmeier@oglethorpe.edu](mailto:mmeier@oglethorpe.edu)

Office Hours: M/T/F 2:00-4:00PM Cousins 106



## COURSE DESCRIPTION

In this course you will develop an understanding of the nature of science – what does it mean to practice science? How are scientific ideas validated? What is required for someone to become part of the scientific community? We will explore these questions through the lens of observational astronomy and discuss both the development of this field and the impact that it has had on our overall understanding of the natural world and our place in this universe.

## LEARNING OBJECTIVES

After completing this course, you should be able to

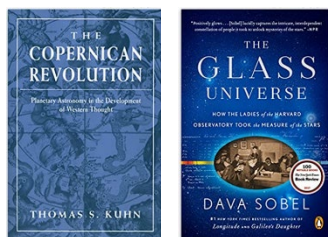
- 01 Explain how science is progressive and how it is differentiated from other ways of knowing.
- 02 Use examples from the field of observational astronomy to support your personal definition and understanding of the nature of science.
- 03 Relate observational evidence to scientific claims and discuss the limitations of those relationships.
- 04 Communicate scientific ideas to others in a comprehensible and accurate way.

## COURSE RESOURCES

There are two required texts for this class:

*The Copernican Revolution* by Kuhn (ISBN: 0674171039)

*The Glass Universe* by Sobel (ISBN: 0143111345)



All other **required** materials will be posted to Canvas.

## COURSE ATTENDANCE

This course will be face-to-face, and attendance is expected. You may take **6 absences** from class for any reason – you do not need to explain yourself. Each additional absence will result in a 3-point deduction in your final course grade. Arriving to class more than 15 minutes late will be considered an absence.

*In the case of documented illness, we can arrange for you to join class via Teams, but arrangements must be made at least 12 hours in advance.*

**DETAILED COURSE INFORMATION IN CANVAS**

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## COURSE POLICIES

### LIFE TOKENS

Life happens. Use up to **3 life tokens** for a no-questions-asked deadline extension for up to 3 days on any assignment except the final presentation.

**Let me know when you are using a life token.** Just an email saying “Hey Dr. Meier, I’m using a life token on x assignment” will suffice. If you need an extension on any component of the final project, every member of the group will need to sacrifice a token.

### DUE DATES

Assignment due dates are designed to help you progress through the course while engaging in deep learning. All due dates are non-negotiable. Assignments turned in after the due date will receive a 10-point deduction per 24 hours unless you have indicated you are using a life token.

### ACADEMIC HONESTY

The honor code, as outlined in Section 11 of the current Oglethorpe University Bulletin, applies to all aspects of this course. Any student suspected of violating the honor code will be reported to the Honor Council. Specific assignments may have additional constraints or expectations related to academic honesty and integrity; this will be indicated in the assignment instructions.

### ACCESSIBILITY

If you need any accessibility-based accommodations, please go through the Office of Accessibility Services to obtain documentation. Once I receive information from them I will reach out to arrange a one-on-one meeting with you to discuss how I can best support your learning in this course.

### TECHNOLOGY IN THE CLASSROOM

Cellphones may be kept on the table/desk in silent mode. Any student observed texting during class will be asked to stow their cellphone. Computers may be used for notetaking; misuse of devices will result in you being asked to leave the class. During some classes we may work on computers; I will let you know at least 12 hours before class if you will need to bring a device.

### FEEDBACK

Typical response time for non-urgent emails:

24 - 48 hours

Typical grading return: 1 week after submission

## QUESTIONS AND CONCERNS

### HERE TO HELP

If at any time you feel that you are falling behind the material, **please contact me**. There are many ways we can work together to help you better understand the concepts or improve your written or oral communication skills. It is my goal to make the material as accessible as possible, while still addressing the learning goals of the course.

### RESPECT FOR DIVERSITY

It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students’ learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you.

### COUNSELING SERVICES

Free and confidential counseling services are available on campus. Licensed counselors are here to provide a space where you can get support and guidance privately about whatever is on your mind. For more information see their website, e-mail [counselingcenter@oglethorpe.edu](mailto:counselingcenter@oglethorpe.edu), or text inquiries to 1 (470) 231-5836.

### ACADEMIC SUCCESS

Although this course does not have a dedicated tutor, students can seek out support from the writing center tutors. Please see the Academic Success page or ask me for more information about those resources.

### SUPPORT IN THE CORE

If you ever feel that there are issues with this course that you are not comfortable discussing directly with me, you may contact the chair of the core program, Dr. Stephen Herschler Mattern ([smattern@oglethorpe.edu](mailto:smattern@oglethorpe.edu)) directly.

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## ASSIGNMENTS & GRADING

### READING RESPONSES ON PERUSALL WEEKLY

15%

Each week I will post 1-3 readings on Perusall that explore the nature of scientific inquiry and the scientific community. "Readings" might include web pages and videos. Perusall is a tool that allows you to comment on readings and respond to other students' comments. Engagement is expected **throughout the week**, and you will not receive full credit if you wait until the last day to engage with the reading. Check out the *Introduction to Perusall* document on Canvas for more information.

### WRITING REFLECTIONS WEEKLY

15%

Most weeks you will reflect on the nature of science in the context of the scientific field we are discussing. You will be expected to draw from the Perusall readings, course texts, and in-class discussions in your responses. These writings will be brief (2 to 4 paragraphs) and will be evaluated based on a standard rubric.

### LAB ASSIGNMENTS BIWEEKLY

30%

Roughly every other week you will be completing a lab activity that may involve in-class inquiry, virtual labs, and/or writing and reflection. These assignments are an opportunity for you to exercise your skills of observation and analysis and will relate to the science topics we are discussing in the class.

### SCIENCE QUIZZES

TWICE DURING SEMESTER

20%

There will be two in-class quizzes on the science content of this course. The quizzes will be closed book and closed note. The quizzes may include short answer, matching, or multiple-choice questions. A study guide will be provided before the quiz.

### GROUP FINAL PRESENTATIONS

INFREQUENT; SEE CALENDAR

20%

A primary goal of COR 400 is to improve your oral presentation skills. In order to facilitate this, you will be divided into groups of 3-4 students. Each group will prepare and deliver a 30-minute presentation over the course of the semester. Details about the group presentation and the working groups are provided in the *Oral Presentation Assignment* and *Working Group Information* documents on Canvas.

## STRATEGIES FOR SUCCESS

Set aside specific time for class related work. Treat that time like you are actually in class. For a class like this you should plan to spend ~7-8 hours outside of class time on the course work each week.

Find something to enjoy about this class! There will be multiple opportunities for you to explore topics of interest to you – remember that you are here to learn and grow.

Seek help with concepts during class meetings or office hours.

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Take care of your emotional, physical, and mental health.

## Course Schedule and Details

Mondays		Wednesdays		Fridays	
8/29		8/31	Perusall: Syllabus	9/2	<b>NO CLASS MEETING</b> Read: CR pp 1-44 Due: WR #1
9/5	<b>NO CLASS MEETING – Labor Day</b>	9/7	Perusall: Nilsson Beliefs Due: Working Group Request	9/9	Read: CR 45-77 Due: WR #2
9/12	Due: LA #1	9/14	Perusall: Process of Science - Modelling	9/16	Read: CR 78-133 Due: WR #3
9/19		9/21	Perusall: Islamic Astronomers Video	9/23	<b>NO CLASS MEETING</b> Read: CR 134-184 Due: WR #4
9/26	Due: LA #2	9/28	Perusall: Philosophical Bias	9/30	Read: CR 185-228 Due: WR #5
10/3	<b>NO CLASS MEETING</b>	10/5	Perusall: Nilsson Scientific Method, Process of Science - Experiment	10/7	Read: CR 229-265 Due: WR #6
10/10	Due: LA #3	10/12	Science Quiz #1	10/14	<b>NO CLASS MEETING</b>
10/17	<b>NO CLASS MEETING – Fall Break</b>	10/19	Perusall: Process of Science - Description	10/21	Read: GU 1-55 Due: WR #7
10/24		10/26	Perusall: Wilson, Huxley	10/28	Read: GU 56 – 104 Due: WR #8
10/31	Due: LA #4	11/2	Perusall: Jogalekar	11/4	<b>NO CLASS MEETING</b> Read: GU 105-158 Due: Presentation Topic Proposal
11/7		11/9	Perusall: Palus, Mervis	11/11	Read: GU 159 – 214 Due: WR #9
11/14	Due: LA #5	11/16	Due: Annotated Bibliography and Outline	11/18	Read: GU 215-265 Due: WR #10
11/21	<b>NO CLASS MEETING</b> Due: Draft of Presentation (by EoD Tuesday)	11/23	<b>NO CLASS MEETING</b> 🚫	11/25	<b>NO CLASS MEETING</b> 🚫
11/28		11/30	Due: Rough draft self-assessment	12/2	Science Quiz #2 Due: Self and Peer Review, Peer Eval of Presentations
12/5	<b>NO CLASS MEETING</b> PRISM Poster Session 1-2:30 (tentative) Due: LA #6	12/7		12/9	

**Key: CR = The Copernican Revolution, GU = The Glass Universe, LA = Lab Assignment, WR = Writing Reflection**