

Astron 0087: Basics of Spaceflight

Spring 2022

Lecture: Tues/Thurs 2:30PM-3:45PM

Thaw 104

Office Hours: Directly after class or by appointment

Contact Information:

Instructor: Dr. Melanie L. Good

Office: 113D Old Engineering Hall

Email: mlgood@pitt.edu

PLEASE USE "Astron0087" in the subject of all email correspondence!

Textbook (Required): *Basics of Spaceflight* Regina Schulte-Ladbeck <http://reslscience.weebly.com/space-books.html>

Course Description: Intended for non-science majors, this course focuses on identifying and understanding the general concepts associated with space flight.

Topics to be covered include:

- Chapter 1: Introducing Spaceflight
- Chapter 2: Outer Space
- Chapter 3: The Solar System
- Chapter 4: Space Navigation
- Chapter 5: Rocket Physics
- Chapter 6: Lift Off!
- Chapter 7: Spacecraft Trajectories
- Chapter 8: Space Exploration
- Chapter 9: Space Commercialization
- Chapter 10: Space Colonization

Grading Scheme:

40% Exams (Best 2 of 3)
 20% Homework
 30% Presentation Video
 10% Participation

Important Dates:

Jan. 21 Add/Drop Ends
 Feb. 17 Exam 1
 Mar. 22 Exam 2
 Mar. 18 Student Withdrawal Ends
 April 21 Exam 3

Tentative Schedule:

Week	Tues	Thurs
1	Jan. 11 (Intro to class)	13 (Ch1)
2	18 (Ch1)	20 (Ch1)
3	25 (Ch2)	27 (Ch2)
4	Feb. 1 (Ch2 Presentations)	3 (Ch3)
5	8 (Ch3 Presentations)	10 (Ch4)
6	15 (Ch4 Presentations)	17 (Exam 1)
7	22 (Ch5)	24 (Ch5)
8	Mar. 1 (Ch 5 Presentations)	3 (Ch6)
9	8 X	10 X
10	15 (Ch 6)	17 (Ch6 Presentations)
11	22 (Exam 2)	24 (Ch7)
12	29 (Ch7 Presentations)	31 (Ch8)
13	Apr. 5 (Ch8 Presentations)	7 (Ch9)
14	12 (Ch9 Presentations)	14 (Ch10)
15	19 (Ch10 Presentations)	21 (Exam3)

X = No Class

Ch1, Ch2, etc. = Chapter 1, Chapter 2, etc.

Homework:

Your homework will consist of viewing your classmates presentation videos, “liking” your favorite, and submitting a response about why you chose that video as your favorite.

Exams:

Exams will be mainly multiple choice, with some true/false, and potentially short-answer questions. The exams should be viewed as a learning experience, which is why you will be given 3 midterm exams, the lowest of which is dropped. This will allow you to learn from each exam experience and have an opportunity to improve.

Presentation and Participation:

Utilizing the information covered during the semester, the presentation is meant as a project-like activity, in which you will do one of the following: 1. explain, in detail, a news article related to that week’s topic, 2. perform a simple experiment or demonstration illustrating a concept from that week’s topics, 3. create a model or other creative media (i.e. painting, film, photo, etc.) that is based off of something from that week’s class, and explain your creative work in detail. You are expected to reference the relevant chapter during your presentation and explain how your project relates to the topics in the chapter and discussed in class. Some example ideas can be found here: <https://www.jpl.nasa.gov/edu/learn/> (note not all ideas on this page are relevant or at the right level, but it is a place to start helping you brainstorm). You will record your presentation (which should not exceed 5 minutes in length) and upload it to a YouTube Playlist where your classmates will view it and “like” their favorites for that week. If it is your week to create your presentation, you do not need to view your classmates’ videos; only students not presenting that week are required to vote for their favorites. If your video is in the top 3, you will automatically receive full points for class participation and your video will be featured in the next class. If your video is not in the top 3, you can still earn full participation points if you contribute to the class discussion about the featured video in the next class.

Attendance:

Your regular attendance is absolutely crucial for obtaining a good grade. If you must miss class for health-related reasons, you should notify me in advance of your absence. If you must miss class for an emergency, please notify me as soon as you possibly can. Generally-speaking, students who have been absent more than three times tend to see negative impacts on their grades.

Code of Conduct:

Communication is key to a productive learning environment, and we can maintain productive communication by exhibiting respect for one another. The success of the course for yourself and others depends on all of our commitment to behavior that demonstrates respect for differences, understanding towards others and a willingness to listen and learn. For these reasons, it is unacceptable to harass, discriminate against, or abuse anyone because of race, ethnicity, gender, disability, religious affiliation, sexual orientation, or age. If you witness or are subject to such harassment, please report it to the instructor or to the Office of Diversity and Inclusion.

Honor Code:

Students are expected to uphold the University's standard of conduct relating to academic honesty. Students assume full responsibility for the content and integrity of the academic work they submit. Students shall be guilty of violating the honor code if they:

1. represent the work of others as their own
2. use or obtain unauthorized assistance in any academic work
3. give unauthorized assistance to other students
4. modify, without instructor approval, an examination, paper, record, or report for the purpose of obtaining additional credit
5. misrepresent the content of submitted work

Any student violating the honor code is subject to receive a failing grade for the course and will be reported to the Vice President of Academic Affairs.

Disability Services:

If you have a disability that requires special testing accommodations or other classroom modifications, you need to notify both the instructor and Disability Resources and Services no later than the second week of the term. You may be asked to provide documentation of your disability to determine the appropriateness of accommodations. To notify Disability Resources and Services, call (412) 648-7890 to schedule an appointment. The Disability Resources and Services office is located at 140 William Pitt Union, and is open Monday-Friday from 8:30AM to 5:00PM.

Title IX:

Legal text: "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance." As a professor I am a mandatory reporter, and I am required to report violations of Title IX that I observe or am made aware of to the Title IX office. Title IX violations include, but are not limited to, sexual harassment, sexual violence and verbal or sexual abuse. Within the classroom, behavior in violation might appear as: suggestive jokes or innuendos, inappropriate touching, and unwanted sexual behavior or advances, but my capacity and obligation to report does not end at the classroom.