

ASTR 007 – Introduction to Astronomy  
Fall 2018

TTh 10:45–12:00, LL 316

TTh 1:10–2:25, LL 270

**Instructor:**

Prof. Ginny McSwain

pronouns: she, her

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Free Help Sessions: TTh 2:30–4:00 pm or by appt.

**Course Objectives:**

1. To explain how celestial bodies appear to move across the sky;
2. To apply the laws of planetary motion and gravity;
3. To understand how the properties of light can be measured with telescopes;
4. To describe the formation and contents of our Solar System (including our Sun, planets, moons, and other small bodies);
5. To understand how fundamental properties of stars can be measured;
6. To describe the properties of the Milky Way and other galaxies; and
7. To understand the expansion history of the Universe.

**Materials:**

- *Astronomy* by Fraknoi, Morrison, & Wolff (free e-book available from OpenStax; <https://openstax.org/details/books/astronomy>)
- Scientific calculator
- *Socratic* app for smartphone or tablet

Announcements will be distributed via your email address listed in Banner, and course notes and other supplementary material will be distributed electronically using Lehigh's Course Site. You are expected to check your email and Course Site frequently for updates.

## Grading:

Participation – 10%

Homework – 25%

Hour Exam 1 – 20%

Hour Exam 2 – 20%

Final Exam – 25%

Participation points will be awarded based on electronic participation in class using the smartphone/tablet app *Socrative*. Please bring your phone to every class - you will not earn participation points without it. (If you don't have a smartphone, please consult Prof. McSwain for an alternative method.) Every student will be given up to 3 “free” participation credits to make up for absences or forgetting your device. Sending your phone to class with another person is considered cheating, and cases will be reported to the Office of Student Conduct.

Reading assignments, homeworks, and interactive classroom activities will be posted on the Course Site page in advance of each lecture. You should come to class prepared to discuss the readings. Bringing printouts of the interactive activities is recommended.

Late homeworks and makeup exams are not allowed without a valid written excuse. If you have a valid excuse, the professor will work with you to set a fair deadline to complete the work.

Exam grades will not be curved. After the final exam is complete and all student work is accounted for, a curve may be applied to the final averages if necessary.

Your professor will use the following base scale for assigning letter grades. This scale gives the *minimum* grade you could receive for a given score. *Depending on the performance of the entire class, your professor may curve the scale so that you will receive a higher grade.*

92–100: A	88–89: B+	78–79: C+	68–69: D+	0–59: F
90–91: A-	82–87: B	72–77: C	62–67: D	
	80–81: B-	70–71: C-	60–61: D-	

## Tips for Success in this Course

- Like most college courses, this course is much faster-paced than your high school courses. In this semester, we will cover the same amount of material that might be covered in one year of high school. You may have to work harder than you are accustomed to keep up.
- For each hour of class time, you should probably spend 2-3 hours outside of class on reading assignments and homework.

- Treat each homework assignment as you would treat studying for an exam. If you keep up with the reading as we go along, the exams will not be so intimidating.
- When you study, put away your cell phone and other distractions. Effective studying requires focus.
- Writing out notes *by hand* instead of typing on a computer is proven to lead to better retention.
- All of the information you need to answer homework and exam questions will be found in our class notes, textbook, or supplemental info provided by Prof. McSwain. If you want to read additional sources outside of class, that's great! But this course is not meant to be a scavenger hunt across the internet, and you will not need to Google any additional information to complete our assignments.

## **Electronics Policy:**

Limited use of electronics (laptops, tablets, smartphones, etc.) is allowed in class for note-taking and minimizing paper waste. However, please note that electronic use should remain focused on course material to minimize distractions. Studies have shown that laptop users and the students around them are distracted by the devices, lowering their average grades by 11–17 percentage points on average<sup>1</sup>.

## **Academic Integrity:**

Academic dishonesty will not be tolerated on any assignment. Copying work from other students or outside sources is considered plagiarism. Outside references (other than the class notes or textbook) must be properly cited if used on any assignment. If I have evidence of copying, cheating, plagiarism, or any other dishonest behavior, I will not hesitate to report my suspicions to the Office of Student Conduct. Their penalties may range from assigning a zero for that assignment, assigning an F for the final course grade, and even expulsion from the university. Please consider this your final warning.

For every assignment, please ensure that the work that you turn in is your own work. When you collaborate on homework assignments with your classmates, you may discuss the problem solving strategy together. Working together is encouraged when it is used as a learning tool. But, at no time should you share your paper or your answers with anyone else. Allowing someone to copy your answers makes you just as guilty as the copier. If someone asks you something like, “What did you get for Problem 2?” you should not provide the final answer. You may, however, tell them what equation you used or refer to the textbook or notes together and discuss the general topic. When you write your solutions, all mathematical calculations and written explanations must reflect your own work. Showing all of the steps of your calculations and explaining your reasoning throughout a problem is an excellent way to guard your independent work and remove suspicions of academic dishonesty.

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<sup>1</sup>[http://www.huffingtonpost.ca/2013/08/14/laptops-in-classrooms\\_n\\_3756831.html](http://www.huffingtonpost.ca/2013/08/14/laptops-in-classrooms_n_3756831.html)

## Accommodations for Students With Disabilities:

If you have a disability for which you are or may be requesting accommodations, please contact both the professor and the Office of Academic Support Services, Williams Hall, Suite 301 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accommodations can be granted.

## The Principles of Our Equitable Community:

Lehigh University endorses The Principles of Our Equitable Community<sup>2</sup>. We expect each member of this class to acknowledge and practice these Principles. Respect for each other and for differing viewpoints is a vital component of the learning environment inside and outside the classroom.

## Tentative Schedule:

Week of Aug. 27:	Overview of Modern Astronomy (Ch. 1–2);
Week of Sept. 3:	Orbital Motion of Planets and the Moon (Ch. 3–4)
Week of Sept. 10:	Orbital Motion (cont.)
Week of Sept. 17:	Orbital Motion (cont.); Tools of the Astronomer (Ch. 5–6)
Week of Sept. 24:	Tools of the Astronomer (cont.)
Week of Oct. 1:	Tools of the Astronomer (cont.); <b>Exam 1 Oct. 5, 4:00 pm</b>
Week of Oct. 8:	Introduction to the Solar System (Ch. 7); Terrestrial Planets (Ch. 8–10)
Week of Oct. 15:	<b>Pacing Break Oct. 15–16</b> ; Terrestrial Planets (cont.)
Week of Oct. 22:	Giant Planets, Their Moons & Rings, Pluto (Ch. 11–12)
Week of Oct. 29:	Comets, Asteroids, and Meteorites (Ch. 13–14); <b>Exam 2 Nov. 2, 4:00 pm</b>
Week of Nov. 5:	The Sun (Ch. 15–16)
Week of Nov. 12:	Stars (Ch. 17–19)
Week of Nov. 19:	Star Formation & Evolution (Ch. 20–23); <b>Thanksgiving Break Nov. 21–23</b>
Week of Nov. 26:	Star Formation & Evolution (cont.); The Milky Way (Ch. 25)
Week of Dec. 3:	Galaxies and the Expanding Universe (Ch. 26–29)
Date TBD	<b>Final Exam</b> (sometime between Dec. 11–19)

This syllabus is only a tentative outline of the course. The grading policy, dates of exams, or the topics covered in class may change as needed.

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<sup>2</sup><https://www.lehigh.edu/~inprv/initiatives/PrinciplesEquitableCommunity-Individuals.pdf>