# Ay 1 - The Evolving Universe - Spring 2026

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Office hours: Tuesdays, 2-3 pm, 388 Cahill

## The actual class website is https://sites.astro.caltech.edu/ay1/

The lectures, slides, announcements, links, etc., are on that page. The assignments, homework, exams, etc., will be posted on this Canvas site.

**Lectures:** Mon+Wed 2-3 pm, Hameetman auditorium, Cahill. The lectures are recorded and then posted online.

**Recitation Sections:** Fridays 2-3 pm, at the locations below:

Section 1: TA: Delaney White, dwhite2@caltech.edu, Hameetman Auditorium
Office hours: Thu 3-4, 255 Cahill
Section 2: TA: Cece Abramson, cecilia@caltech.edu, 219 Cahill
Office hours: Tue 3-4, 204 Cahill
Section 3: TA: Charis Hall, cmhall@caltech.edu, 269 Lauritsen
Office hours: Fri 11-12, 273 Cahill
Section 4: TA: Giulia Murgia, gmurgia@caltech.edu, 103 Downs
Office hours: Wed 3-4, 204 Cahill
Section 5: TA: Diya Kumar, diya@caltech.edu, 107 Downs
Office hours: Wed 1-2, 273 Cahill

**About this class:**

**The scope and the goals:**

This is a very introductory, survey class about modern astronomy, intended for the non-astro/physics majors (who should take Ay 20 and Ay 21 instead). Our goals are both to teach you about our current (and still evolving) picture of the physical universe and the remarkable objects and phenomena in it, and also about how we know that - how our observations, interpreted in a framework of physics, lead us to that understanding.

The topics to be covered are ***listed here.***

**The approach:**

The class is divided into 20 thematic lectures, 2 per week. All of the lectures (videos + slides) are available to you online, to watch (and re-watch as needed) on your own schedule and at your own convenience. The attendance is not mandatory, but it is *highly recommended*.

There will be also 1 weekly recitation section with your TA (Fridays 2-3 pm), where questions will be answered, concepts clarified, and simple quantitative problems worked out (these will be an excellent practice for the homeworks and exams). The attendance of those is ***mandatory***, and a failure to attend will affect your grade. Really good excuses may be granted by the instructor, ahead of the time.

**The lectures** (links to the videos, slides, etc.) are ***here.***

**Teaching materials:**

There is no assigned textbook, and our Library has many of them, including the following free electronic textbooks that you may find useful (*requires Caltech Access login*):

- Lang, K., "Essential Astrophysics", Springer (2018): ***Caltech Library link*** **.** This probably closest to the level and coverage for this class.
- Karttunen, H., et al., "Fundamental Astronomy", Springer (2018): ***Caltech Library link*** **.** This may be a too high level for this class.
- Fraknoi, A., Morrison, D., & Wolff, S., "Astronomy", Open Textbook Library (2016): ***OpenStax link*** **.** May be too elementary for this class.

Generally, the videos of the lectures, the posted slides, and links and additional readings posted on the class website can be considered as an effective textbook for this class. Make an extensive use of the on-line resources, and Wikipedia in particular. Suggestions for additional links are more than welcome.

**Grading scheme:**

40% In-person, proctored final. Details to be announced.
30% Hybrid take-home and in-person, proctored midterm. Details to be announced.
20% Weekly homework. Short and easy, you can collaborate.
10% Recitation section attendance, -1% for each section missed.

The in-person, proctored midterm and final exams will be closed books/notes/internet/AI. Only your brains. We will provide tables of physical and astronomical constants.

The homework will be posted on Fridays, and be due on the next Friday. There will be no homework assigned during the midterms and finals weeks. ***Late homework penalty*** (up to one week late): 50% of that homework's score. No homework will be accepted beyond 1 week past the due date. ***Excuses:*** Missed section and late homework penalties will be waived for documented health-related reasons. Other valid excuses may be accepted at the instructor's discretion.

**Collaboration policy:** You can discuss homework with other students in the broad terms, but everyone has to do their own solutions. No collaboration is allowed for the midterm or final exams.

**Special accommodations:** Students who need special accommodations (e.g., extra time for the exams, etc.) should let the Dean's Office know, and they will notify all of the relevant instructors. We are here to help you learn.