ASTRONOMY C10 / L&S C70U: FALL 2018

Syllabus

The schedule below gives the textbook page numbers (Pasachoff & Filippenko 2014 – The Cosmos, 4th edition) and the slide page numbers (this Reader) for each lecture. The exact timing of the lectures may drift a little ahead or behind this schedule.

Discussion sections will normally concentrate on the material of the three previous class meetings. Discussion sections before the midterm exams will be for general review.

Lecture	Date	Title	Pages in: Textbook / Slides
PART I: INTRODUCTION			
1.	Wed., 22 Aug	A Grand Tour of the Cosmos	vii-xxiii / 1-2
2.	Fri., 24 Aug	Journey Through Space and Time	1-19 / 3-18
3.	Mon., 27 Aug, 3-4	Light – The Supreme Informant	20-23 / 19-27
4.	Mon., 27 Aug, 4-5	The Fingerprints of Atoms	25-32 / 28-37
5.	Wed., 29 Aug	Doppler Effect; Thermal Radiation	22-35, 290-293 / 38-46
	Fri., 31 Aug	NO LECTURE! (Enjoy a long weekend!)	
	Mon., 3 Sep	LABOR DAY HOLIDAY!	
6.	Wed., 5 Sep	Telescopes: Tools of the Trade	36-65 / 47-54
7.	Fri., 7 Sep	Twinkling; Lunar Phases	66-70, 76-78 / 55-59
8.	Mon., 10 Sep	Glorious Total Solar Eclipses	71-72, 74-76, 270-273 / 60-64
9.	Wed., 12 Sep	Lunar Eclipses; Celestial Phenomena	73-74, 79-93 / 65-73
PART II: THE SOLAR SYSTEM			
10.	Fri., 14 Sep	The Copernican Revolution	94-108 / 74-84
11.	Mon., 17 Sep, 3-4	Newton: On the Shoulders of Giants	108-117 / 85-91
12.	Mon., 17 Sep, 4-5	Origin of the Solar System; Earth	234-236, 118-127 / 92-98
13.	Wed., 19 Sep	The Moon, Mercury, Venus, Mars	127-165, 231 / 99-108
14.	Fri., 21 Sep	Jupiter, Saturn, Uranus, Neptune	166-195 / 109-117
15.	Mon., 24 Sep	Pluto, Comets, Asteroids	196-214, 219-223 / 118-125
16.	Wed., 26 Sep	Meteors, Collisions	215-218, 220, 223-230 / 126-133
17.	Fri., 28 Sep	Exoplanets: Other Worlds	232-253 / 134-142
PART III: THE STARS AND THEIR LIVES			
18.	Mon., 1 Oct	Our Sun and Distant Stars	254-285 / 143-154
19.	Wed., 3 Oct	"Social Stars": Binaries and Clusters	285-309 / 155-164
20.	Fri., 5 Oct	How Stars Shine: Cosmic Furnaces	310-329 / 165-171
	Mon., 8 Oct	MIDTERM 1! Through "Exoplanets" (Slide 142)	
21.	Wed., 10 Oct	The Fate of Our Sun: Stellar Evolution	330-336 / 172-180
22.	Fri., 12 Oct	Exploding Stars: Celestial Fireworks!	336-343 / 181-186
23.	Mon., 15 Oct	SN 1987A; the Corpses of Massive Stars	343-359 / 187-195
24.	Wed., 17 Oct	Black Holes: Hearts of Darkness	360-367 / 196-203
PART IV: A UNIVERSE OF GALAXIES			
25.	Fri., 19 Oct	The Milky Way Galaxy; Other Galaxies	74, 382-427 / 208-221

Lecture	Date	Title	Pages in: Textbook / Slides
26.	Mon., 22 Oct, 3-4	The Dark Side of Matter	428-434 / 222-230
27.	Mon., 22 Oct, 4-5	The Expansion of the Universe	434-449 / 231-241
28.	Wed., 24 Oct	Quasars – Cosmic Powerhouses	450-460 / 242-249
29.	Fri., 26 Oct	Quasar Engines: Supermassive Black Holes	460-475 / 250-255
30.	Mon., 29 Oct	Cosmology and the Dark Night Sky	476-482 / 256-265
31.	Wed., 31 Oct	The Quest for Black Holes	367-381 / 204-207
PART V: THE BIRTH AND LIFE OF THE UNIVERSE			
32.	Fri., 2 Nov	The Age of the Universe	483-490 / 266-273
	Mon., 5 Nov	MIDTERM 2! Through "Quasars" (Slide 255), including Oct 31 lec.	
33.	Wed., 7 Nov	The Geometry of the Universe	490-496 / 274-281
34	Fri., 9 Nov	Einstein's Biggest Blunder?	496-507 / 282-289
	Mon., 12 Nov	VETERANS DAY HOLIDAY!	
, 35.	Wed., 14 Nov	The Original Big Bang Theory; CMBR	508-513, 522-526 / 290-299
36.	Fri., 16 Nov	The Contents of the Universe	513-522 / 300-310
37.	Mon., 19 Nov, 3-4	Refinements to the Original Big Bang Theory	526-529 / 311-318
38.	Mon., 19 Nov, 4-5	The Inflationary Universe	528-532 / 319-326
	Wed., 21 Nov	NON-INSTRUCTIONAL DAY!	
	Fri., 23 Nov	THANKSGIVING HOLIDAY!	
39.	Mon., 26 Nov	The Ultimate Free Lunch, and a "Multiverse"?	532-539 / 327-334
40.	Wed., 28 Nov	The Search for Extraterrestrial Life	540-550 / 335-338
41.	Fri., 30 Nov	Interstellar Travel; Conclusion	546, 550-559 / 339-345

Final exam (cumulative): Tuesday, 11 December 2018, 7:00–10:00 pm (Exam Group 8).
If you have a DIRECT conflict, the exam will be during Exam Group 7 (3:00–6:00 pm, 11 December).

The dates when the double lectures will be given are tentative; they depend on whether the campus scheduler changes them. There are some backup dates if some of the provisionally scheduled ones don't occur.

All students are automatically signed up with bCourses when they enroll (or waitlist) the course on SIS.
To access the course website on bCourses, simply follow these steps:

1. Open your web browser to http://bcourses.berkeley.edu .
2. Enter your CalNet ID and Passphrase to authenticate.
3. Click on the "courses" tab and then "Introduction to General Astronomy" to access the course website.

From inside the site, you can use the links on the left side of the screen to access various features. Some of the most important ones are as follows.

– Announcements: Important notifications from Alex and from the GSIs during the semester.
– Grades: Allows you to check your scores. You should examine this regularly to be sure that your homework assignments, exam scores, and quizzes have been correctly entered. [Note, however, that in many cases the point values for assignments posted there do not follow the grading system outlined in the Reader. For example, each 50-point homework assignment is actually worth only about 3 course points.]
– Files: Where homework solutions, practice exams, and other supplementary documents will be posted over the semester. (The assignments themselves are in the Course Reader.)

The website also includes many other tools, including discussion forums, live chat, and general information.

Weekly Schedule of Discussion Sections, Exams, Homework and Lab Assignments

Week 1: 22 – 24 Aug.	Overview of the course. Math review. No classes Aug. 20 and 21.
Week 2: 25 – 29 Aug	Math review. Discussions. Homework #1 due on Friday, Aug. 31.
Week 3: 3 – 7 Sep.	Discussions, review. Homework #2 due on Friday, Sep. 7. Labor day holiday: Monday, Sep. 3 (no classes). Students in Monday sections are encouraged (but not required) to attend any other discussion section this week.
Week 4: 10 – 14 Sep.	Discussions, review. Finalize section enrollment. Homework #3 due Friday, Sep. 14.
Week 5: 17 – 21 Sep.	Quiz #1. Discussions. Homework #4 due on Friday, Sep. 21.
Week 6: 24 – 28 Sep.	Discussions, review. Homework #5 due on Friday, Sep. 28.
Week 7: 1 – 5 Oct.	Review for midterm exam. Homework #6 due on Friday, Oct. 5.
Week 8: 8 – 12 Oct.	Discussions, review. Homework #7 due on Friday, Oct. 12. MIDTERM #1 ON MONDAY, OCTOBER 8!
Week 9: 15 – 19 Oct.	Discussions, review. First set of labs due on Friday, Oct. 19.
Week 10: 22 – 26 Oct.	Quiz #2. Discussions. Homework #8 due on Friday, Oct. 26.
Week 11: 29 Oct. – 2 Nov.	Review for midterm exam. Homework #9 due on Friday, Nov. 2.
Week 12: 5 – 9 Nov.	Discussions; review. Second set of labs due on Friday, Nov. 9. MIDTERM #2 ON MONDAY, NOVEMBER 5!
Week 13: 12 – 16 Nov.	Discussions, review. Homework #10 due on Friday, Nov. 16. Veteran's day holiday: Monday, Nov. 12 (no classes). Students in Monday sections are encouraged (but not required) to attend any other discussion section this week.
Week 14: 19 – 23 Nov.	Discussions, review. Thanksgiving holiday: No classes on Wed., Nov. 21, through Fri., Nov. 23. Students in Wed. through Fri. sections are encouraged (but not required) to attend any Mon. or Tues. discussion section this week.
Week 15: 26 – 30 Nov.	Review for final exam. Homework #11 due on Friday, Nov. 30.

NOTE 1: Please don't turn in the homework (or labs) for a particular week until at least Monday of that week; otherwise, it could get mixed with the previous week's homework and may be lost.

NOTE 2: It is to your advantage to attend discussion sections. You will learn the material better, and the GSIs will get to know you. (A small part of your overall grade will be based on your participation in section.)