ASTRONOMY C10 / L&S C70U: FALL 2017

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., 23 Aug	A Grand Tour of the Cosmos	vii-xxiii / 1-2
2.	Fri., 25 Aug	Journey Through Space and Time	1-19 / 3-18
3.	Mon., 28 Aug, 3-4	Light – The Supreme Informant	20-23 / 19-27
4.	Mon., 28 Aug, 4-5	The Fingerprints of Atoms	25-32 / 28-37
5.	Wed., 30 Aug	Doppler Effect; Thermal Radiation	22-35, 290-293 / 38-46
6.	Fri., 1 Sep	Telescopes: Tools of the Trade	36-65 / 47-54
	Mon., 4 Sep	LABOR DAY HOLIDAY!	
7.	Wed., 6 Sep	Twinkling; Lunar Phases	66-70, 76-78 / 55-59
8.	Fri., 8 Sep	Glorious Total Solar Eclipses	71-72, 76, 270-273 / 60-64
9.	Mon., 11 Sep	Lunar Eclipses; Celestial Phenomena	73-93 / 65-73
PART II: THE SOLAR SYSTEM			
10.	Wed., 13 Sep	The Copernican Revolution	94-108 / 74-84
11.	Fri., 15 Sep	Newton: On the Shoulders of Giants	108-117 / 85-91
12.	Mon., 18 Sep, 3-4	Origin of Solar System; Earth	234-236, 118-127 / 92-98
13.	Mon., 18 Sep, 4-5	The Moon, Mercury, Venus	127-149 / 99-105
14.	Wed., 20 Sep	Mars, Jovian Planets, Jupiter	149-177, 231 / 106-111
15.	Fri., 22 Sep	Saturn, Uranus, Neptune	177-195 / 112-118
16.	Mon., 25 Sep, 3-4	Pluto, Comets	196-214 / 119-125
17.	Mon., 25 Sep, 4-5	Asteroids, Meteors, Collisions	215-230 / 126-134
18.	Wed., 27 Sep	Exoplanets: Other Worlds	232-253 / 135-142
PART III: THE STARS AND THEIR LIVES			
19.	Fri., 29 Sep	Our Sun: The Nearest Star	254-277 / 143-149
20.	Mon., 2 Oct	Stars: Distant Suns	278-292 / 150-157
21.	Wed., 4 Oct	"Social Stars": Binaries and Clusters	292-309 / 158-164
	Fri., 6 Oct	MIDTERM 1! Through "Exoplanets" (Slide 142)	
22.	Mon., 9 Oct	How Stars Shine: Cosmic Furnaces	310-329 / 165-171
23.	Wed., 11 Oct	The Fate of Our Sun: Stellar Evolution	330-336 / 172-179
24.	Fri., 13 Oct	Exploding Stars: Celestial Fireworks!	336-343 / 180-185
25.	Mon., 16 Oct, 3-4	The Corpses of Massive Stars	343-359 / 186-192
26.	Mon., 16 Oct, 4-5	Black Holes: Hearts of Darkness	360-365 / 193-201
PART IV: A UNIVERSE OF GALAXIES			
27.	Wed., 18 Oct	The Milky Way Galaxy	74, 382-411 / 208-212
28.	Fri., 20 Oct	Other Galaxies	412-427 / 213-221

Lecture	Date	Title	Pages in: Textbook / Slides
29.	Mon., 23 Oct, 3-4	The Dark Side of Matter	428-434 / 222-230
30.	Mon., 23 Oct, 4-5	The Expansion of the Universe	434-449 / 231-239
31.	Wed., 25 Oct	Quasars – Cosmic Powerhouses	450-460 / 240-247
32.	Fri., 27 Oct	Quasar Engines: Supermassive Black Holes	460-475 / 248-255
33.	Mon., 30 Oct	The Quest for Black Holes	365-381 / 202-207
34.	Wed., 1 Nov	Cosmology and the Dark Night Sky	476-482 / 256-265
PART V: THE BIRTH AND LIFE OF THE UNIVERSE			
	Fri., 3 Nov	MIDTERM 2! Through "Quasars" (Slide 255, including 30 Oct. lecture)	
35.	Mon., 6 Nov	The Age of the Universe	483-490 / 266-273
36.	Wed., 8 Nov	The Geometry of the Universe	490-496 / 274-281
	Fri., 10 Nov	VETERAN'S DAY HOLIDAY!	
37.	Mon., 13 Nov, 3-4	Einstein's Biggest Blunder?	496-507 / 282-288
38.	Mon., 13 Nov, 4-5	The Standard Big Bang Theory	508-510, 522-526 / 289-297
39.	Wed., 15 Nov	The Cosmic Microwave Background Radiation	511-522 / 298-307
40.	Fri., 17 Nov	Refinements to the Standard Big Bang	526-529 / 308-318
41.	Mon., 20 Nov	The Inflationary Universe	528-532 / 319-326
	Wed., 22 Nov	NON-INSTRUCTIONAL DAY!	
	Fri., 24 Nov	THANKSGIVING HOLIDAY!	
42.	Mon., 27 Nov	The Ultimate Free Lunch, and a "Multiverse"?	532-539 / 327-334
43.	Wed., 29 Nov	The Search for Extraterrestrial Life	540-550 / 335-341
44.	Fri., 1 Dec	Interstellar Travel; Conclusion	546, 550-559 / 342-345

Final exam (cumulative): Wednesday, 13 December 2017, 7:00–10:00 pm (Exam Group 12).
If you have a DIRECT conflict, the exam will be during Exam Group 11 (3:00–6:00 pm, 13 Dec.).

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: 23 – 25 Aug.	Overview of the course. Math review. No classes Aug. 21 and 22.
Week 2: 28 Aug – 1 Sep.	Math review. Discussions. Homework #1 due on Friday, Sep. 1.
Week 3: 4 – 8 Sep.	Discussions, review. Homework #2 due on Friday, Sep. 8. Labor day holiday: Monday, Sep. 4 (no classes). Students in Monday sections are encouraged (but not required) to attend any other discussion section this week.
Week 4: 11 – 15 Sep.	Discussions, review. Finalize section enrollment. Homework #3 due Friday, Sep. 15.
Week 5: 18 – 22 Sep.	Quiz #1. Discussions. Homework #4 due on Friday, Sep. 22.
Week 6: 25 – 29 Sep.	Discussions, review. Homework #5 due on Friday, Sep. 29.
Week 7: 2 – 6 Oct.	Review for midterm exam. Homework #6 due on Friday, Oct. 6. MIDTERM #1 ON FRIDAY, OCTOBER 6.
Week 8: 9 – 13 Oct.	Discussions, review. Homework #7 due on Friday, Oct. 13.
Week 9: 16 – 20 Oct.	Discussions, review. First set of labs due on Friday, Oct. 20.
Week 10: 23 – 27 Oct.	Quiz #2. Discussions. Homework #8 due on Friday, Oct. 27.
Week 11: 30 Oct. – 3 Nov.	Review for midterm exam. Homework #9 due on Friday, Nov. 3. MIDTERM #2 ON FRIDAY, NOVEMBER 3.
Week 12: 6 – 10 Nov.	Discussions; review. Second set of labs due on **Thursday**, Nov. 9. Veteran's day holiday: Friday, Nov. 10 (no classes). Students in Friday sections are encouraged (but not required) to attend any other discussion section this week.
Week 13: 13 – 17 Nov.	Discussions, review. Homework #10 due on Friday, Nov. 17.
Week 14: 20 – 24 Nov.	Discussions, review. Thanksgiving holiday: No classes on Wed., Nov. 22, through Fri., Nov. 24. Students in Wed. through Fri. sections are encouraged (but not required) to attend any Mon. or Tues. discussion section this week.
Week 15: 27 Nov. – 1 Dec.	Review for final exam. Homework #11 due on Friday, Dec. 1.

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.)