



## ASTR 1000 - 100, The Solar System

Summer A Session 2017

M-F, 11:00 AM - 12:35 PM, Duane G131

Instructor: Becky Nevin



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Office: Duane 345, Office Hours: 1-2 M-F

“Science is a way of thinking much more than it is a body of knowledge.” - Carl Sagan

**Course Description:** We will explore concepts of modern astronomy, examining key processes that shape the Earth, the moon, the planets, and other objects in the solar system. We will develop a scientific mindset and learn how to apply scientific tools to understand the Solar System.

**Prerequisite(s):** None. However, I do require that you drop your fear of math at the door. The math required will include basic algebra, geometry, and scientific notation. For a review, go here: <http://lasp.colorado.edu/bagenal/MATH/main.html>

**Note(s):** Note that while this course meets the arts and sciences core requirements for natural science, it is a NON LAB course.

**Credit Hours:** 3. The university dictates that 6-9 hours of work are to be expected per week for a 3 credit hour class outside of class. This translates to 6-9 hours per day for a 5 week course.

**Text:** *The Cosmic Perspective*, 8<sup>th</sup> Edition, Bennett et al. This book is really excellent, so you will have assigned readings from this book to supplement the work we do in class. I will quiz you at the beginning of each class on the readings and this will be included in your clicker score (10% of your grade).

The 6<sup>th</sup> and 7<sup>th</sup> editions should work but it's up to you to make sure you are covering the correct material in the readings (some chapters may be rearranged).

The cost of the textbook is insane (\$190) so if you'd like you can use the e-text. The online version is available at [www.masteringastronomy.com](http://www.masteringastronomy.com) for ~\$100. If this is still outrageous for you, please come talk to me for additional options.

### Grade Distribution:

Weekly Written Homeworks and Observing	20%
Mastering Astronomy	10%
Clicker Scores	10%
Science in the News	10%
End of Week 'Midterms' (4 total)	30%
Final Exam	20%

**Weekly Written Homework and Observing (20%):** Weekly homework is **due Thursdays at the beginning of class**. These assignments will prepare you for the weekly midterms.

You can replace your lowest homework grade by attending a Friday night open observing session at the Sommers-Bausch observatory on campus and completing an observing report (forms are on D2L). I will post homework solutions Thursday afternoons, so you can prepare for the exams on Fridays. Late homework will not be accepted.

**Mastering Astronomy (10%):** [www.masteringastronomy.com](http://www.masteringastronomy.com). This is the website we will be using for review materials throughout the course. I will assign homework from this site, due on Wednesdays at 11am. Your textbook comes with an access code for the homework site. Register for our class on the site, using the class ID RENEVIN94523 and your D2L login name for your Student ID. Wrong answers are accepted for partial credit.

**Clickers (10%):** You are required to purchase a clicker from the student store and register it here: <https://www.iclicker.com/students>. Your clicker score is partially a participation score, and partially an opportunity for free points if you've done the reading. I will be quizzing you at the beginning of each class on the reading assignment due that day and I will also insert clicker questions throughout the lecture to boost active learning. **Scientific studies have shown that active learning increases retention throughout and even after a course.** Therefore, clickers are for your benefit, as well as mine. I will use clicker questions to adjust the curriculum. Clickers are scored on a three point scale (**0=No answer, 1=Answer, 2=Correct Answer**). I will do my best to let you know if I'm 'grading' a clicker question, or just looking for feedback. I will also drop your three lowest days of clicker scores to cover any absences.

**Science in the News (10%):** You will complete one large individual project throughout the course of this class. This will involve finding one news article about a scientific study and writing a report about the findings of the class, why it is science or pseudoscience, its strengths and weaknesses, and future research. I will provide more details.

**'Midterms' (30%):** There will be a 30-45 minute midterm at the beginning of class every Friday. These midterms will explore concepts from the previous week. You can drop your lowest midterm score. This should cover any absences. **There will be no make up midterms!** I allow you to use one side of a 8.5 x 11 inch piece of paper as 'notes' for each midterm.

**Final Exam (20%):** The final will happen Friday July 7th during the class period. We will have a review session the day before during class.

### Letter Grade Distribution:

$\geq 88\%$	A	68%	C
85%	A-	65%	C-
82%	B+	62%	D+
78%	B	58%	D
75%	B-	55%	D-
72%	C+	$\leq 50$	F

**My Expectations of Myself:** I'd like to institute some active learning policies to make the information retention easier for everyone. This includes using clickers, lecture tutorials, written homework assignment, and in class activities. Not everything will be perfect, and I will be asking for feedback. I expect myself to grade tests and homework in a timely matter, and test everyone on content that we have prepared for. I will supply the class with learning goals for each class period.

**My Expectations of You:** This is a whirlwind course and I expect you to come along for

the ride. This means staying on top of your reading and homeworks and **being proactive about coming to me for outside help**. I expect you to trust that my evaluation system is fair and focus on the material as opposed to your letter grade. Lastly, and this probably goes without saying, but I expect everyone to uphold the honor code and respect all other learners and instructors. No cell phones or laptops in class.

**Course Material:** During this five week course, we will be exploring the story of our Solar System while also developing scientific tools and thinking strategies.

Week 1: Perspective and a Scientific Mindset	Chapters 1-3
Week 2: Forces and Planetary Interiors	Chapters 4 and 9
Week 3: Solar System Beginnings: Formation and Debris	Chapters 8 and 12
Week 4: Light and Atmospheres	Chapters 5, 10, and 11
Week 5: Going Beyond: Extrasolar Planets and Aliens	Chapter 13

Below is the reading schedule, where you are expected to complete the reading by the beginning of class of the day listed. There will be clicker questions!!

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	The Syllabus	1.1, 1.2, 3.4, 3.5	2.2 ( <i>Fiske</i> )	2.3	2.4, 3.3
Week 2	4.1, 4.2	4.3, 4.4	9.1, 9.2	9.3, 9.4 ( <i>Fiske</i> )	9.6
Week 3	8.1	8.2, 8.3 ( <i>Fiske</i> )	12.1, 12.2	12.3, 12.4	12.5
Week 4	5.1, 5.2 ( <i>Fiske</i> )	5.4, 10.1	10.2, 10.6	11.1	11.2
Week 5	13.1	NO CLASS	13.2, 13.3 ( <i>Fiske</i> )	Review Day	Final Exam

**Fiske Planetarium:** We will be making weekly journeys to Fiske Planetarium throughout this course. The planetarium is a fun and useful tool for conceptualizing astronomical concepts. While we're there, I expect you to be engaged, and I will be asking clicker questions just like in a normal classroom setting. We will meet at Fiske Planetarium for the normal class time on **June 7th, June 15th, June 20th, June 26th, and July 5th**. Do not be late, it is really difficult to walk in, not to mention disrespectful to your classmates if you arrive late and have to enter in the dark.

**Sommers-Bausch Observatory (SBO):** Like I said above, you can replace one of your weekly homework assignments with an observing report from the Sommers-Bausch Observatory (observing logs can be found on D2L). Observing nights happen every Friday night from 9-11.

**CU Honor Code:** All students must adhere to the academic integrity policy of the University of Colorado. Violations of this policy include: plagiarism, cheating, using another student's clicker, and bribery. I will report academic misconduct to the Honor Code Council. You can find more information about this policy at <http://honorcode.colorado.edu>.

Everyone understands that you shouldn't cheat on tests, but there is often confusion about what this means for homework. While I encourage you to work in groups on homework assignments, everyone's web submissions and written homework must be done independently. So please split off from the group when writing up and submitting your answers. Identical assignments will split credit. Please come talk to me if you are confused about this policy. **Students with Disabilities:** If

you qualify for accommodations because of a disability, please submit to me a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior

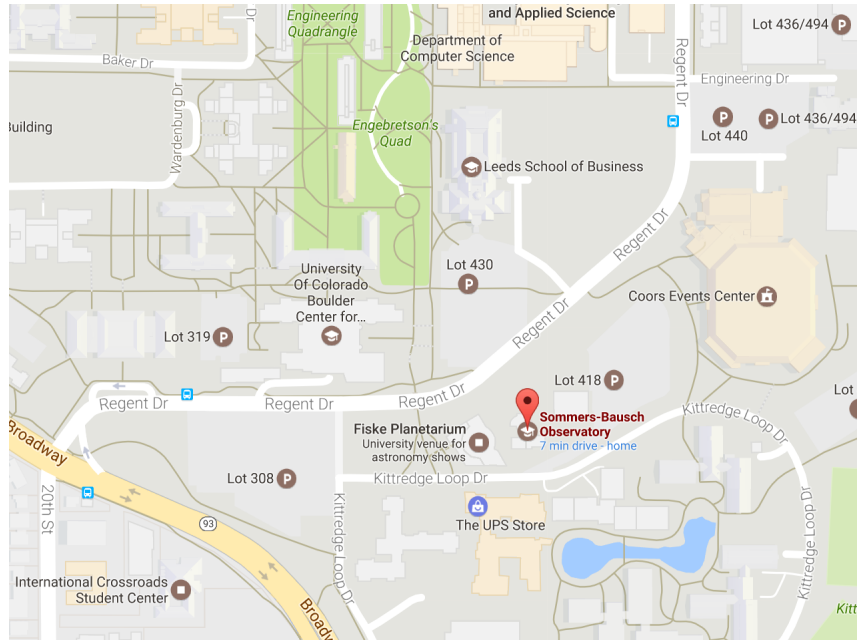


Figure 1: Map for Fiske Planetarium and Sommers-Bausch Observatory, which are both on the south side of campus, south of the C4C and north of the Kittridge complex.

to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at [dsinfo@colorado.edu](mailto:dsinfo@colorado.edu). If you have a temporary medical condition or injury, see Temporary Injuries guidelines under the Quick Links at the Disability Services website and discuss your needs with me.

**Religions Observances:** Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, please contact me in advance of the religious observation to make possible arrangements. See campus policy regarding religious observances for full details.

**Discrimination and Harassment:** The University of Colorado Boulder (CU-Boulder) is committed to maintaining a positive learning, working, and living environment. CU-Boulder will not tolerate acts of sexual misconduct, discrimination, harassment or related retaliation against or by any employee or student. CU's Sexual Misconduct Policy prohibits sexual assault, sexual exploitation, sexual harassment, intimate partner abuse (dating or domestic violence), stalking or related retaliation. CU-Boulder's Discrimination and Harassment Policy prohibits discrimination, harassment or related retaliation based on race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Individuals who believe that they have been subject to misconduct under either policy should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127. Information about the OIEC, the above referenced policies, and the campus resources available to assist individuals regarding sexual misconduct, discrimination, harassment or related retaliation can be found at the OIEC website.