ASTRONOMY 20

Stars and Galaxies

Spring 2013

Where and When:

Room: 1826

Mon and Wed 1:00 – 2:15 pm

Instructor:

Dr. Kevin Ankoviak

Office: 1823

Phone: (925) 424-1396

Email: kankoviak@laspositascollege.edu

Office hours:

Mon. 12:00 – 12:50 pm

Tue. 3:30 – 4:35 pm

Wed. 4:00 – 4:25 pm

Thu. 3:30 – 4:35 pm

Required Texts:

"Cosmic Perspective, The Stars, Galaxies and Cosmology", Bennett et al., 6th Edition with Mastering Astronomy access

Course Description:

Astronomy is the science of studying the universe. This includes the study of stars, galaxies and the history of the universe. It encompasses the sciences of mathematics, physics, chemistry, biology, and geology. It is not astrology, or the study of UFO's. Mathematics and memorization of facts will not be emphasized. The understanding of concepts and the development of critical thinking skills will be stressed. Plan to spend at least **six** hours of study outside of class each week.

Prerequisites:

None.

Note: It is **your responsibility** to officially drop the course if you want to withdraw.

Grading:	
Chapter Worksheets	25%
Chapter Quizzes	25%
Sky Journal	25%
Final Exam	25%

The following grade distribution will be used.	A = 88-100%
	B = 76-88%
	C = 64-76%
	D = 52-64%
	F = 0-52%

Cheating in any form will not be tolerated.

If caught, at best, you will fail the course, and at worst, you will be "expelled for academic dishonesty" which will be placed on your permanent transcripts. If you are uncertain of what constitutes academic dishonesty, refer to the Academic Policies section of your Las Positas College Catalog.

Collaboration:

To succeed you must attempt all the problems yourself. I suggest that you work in small groups (2-3). Once a solution is reached, write the answer in your own words. To simply copy the group answer or study the solutions will not help you when you have to swim on your own during exams. Copying from your partners is cheating.

Chapter Homework…..25%

Homework questions and problems will be assigned in class every week. Homework assignments will be collected online. Late homework will not be accepted.

Chapter Quizzes…..25%

Quizzes are closed book. You may use a calculator. Quizzes will be given 1 week after we complete a chapter in class.

Sky Journal….25%

3000 years ago, everyone knew the various objects in the night sky. Today, many people are unaware that the Moon even moves in the night sky. To remedy this, you will be required to keep a journal of the night sky. Please make at least two entries a week. These entries can be of Moon observation, Sun observations, constellation observations, or planetary observations. Include about half a page of narrative and any drawings which you deem appropriate. Also include the date, time and direction of your observations.

Final Exam…..25%

One comprehensive final exam will be given at the end of this term. This exam will be 100 questions in length, and will cover material covered in the entire class.

You are responsible for all policies and rules in this document.

Astronomy 20 The Solar System SYLLABUS-Spring 2013

Wk	Ch	Topics
1	1	Our Place in the Universe
2	2	Discovering the Universe Yourself
3	3	The Science of Astronomy
4	4	Making Sense of the Universe: Understanding Motion, Energy, and Gravity
5	5	Light and Matter: Reading Messages from the Cosmos
6	6	Telescopes: Portals of Discovery
7	14	Our Sun
8	15	Surveying the Stars
9	16	Star Birth
10	17	Star Stuff
11		SPRING BREAK
12	18	The Bizzare Stellar Graveyard
13	19	Our Galaxy
14	21	Galaxy Evolution
15	22	Dark Matter, Dark Energy, and the Fate of the Universe
16	23	The Beginning of Time
17	24	Life in the Universe
18		Review

Final Exam…will be Friday, May 24th, 11:30 am in Room 1826

To succeed in an astronomy course

* **Read the book**.

* **Ask me questions** at office hours and ask your classmates.

* **Attempt all homework** problems yourself. If you get stuck, don't give up and assume you

 can skip this topic. Astronomy builds on previous material, so ask for help.

* **Collaborate** with classmates on homework and exam preparation.

* **Explain** difficult concepts to others.

"If you can't explain it to your grandmother, then you really don't understand it."-R.P.Feynman.

* Make use of the Math lab, computer lab, and the Tutoring Center.

* If you have special needs, I'll do my best to accommodate you.

Useful numbers(see Appendix for more):

1 mile = 1.6 km, 1 km = 1000 m, 1 m = 100 cm, I inch = 2.54 cm.
1 ly=9.46×10^{12} k=5.88×10^{12} mi.
1 pc=3.26 ly.
speed of light c=3×10^8 m/s.

You should memorize the following numbers:

1 AU = 150 million kilometers = 93 million miles.
Sun = 100 times bigger than Earth
Sun-Pluto average distance = 40 AU
Average distance between stars in the Milky Way (near Sun)= a few light years ~ 1pc
Diameter of Milky Way = 80,000 ly
Sun is 30,000 ly from Milky Way's center.
Average distance between galaxies = a few million light years = 1 Mpc
Age of Earth = 4.5 billion years
Age of Universe = about 15 billion years