

# Syllabus for Astronomy 101

## Basic Astronomy

### Fall 2020

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Office hours: Monday and Wednesday, 10:30 to 11:30 AM, and by appointment

**Text:** *The Essential Cosmic Perspective*, 8th edition, by Jeff Bennett and coauthors (ISBN 978-0-13-451633-2)

Supplementary reading: *A Guide to Wider Horizons*, by Kevin Krisciunas, 2nd edition (2016), ISBN 978-1-5249-0115-8. There are 3 copies on reserve at the Evans Library Annex, ground floor, and three copies of the first edition in the regular stacks at Evans. Some chapters are posted online.

You are responsible for reading and studying chapters 1-5 and 11-18 of *The Essential Cosmic Perspective* in their entirety, plus section 7.5. Some topics, but not all, of chapters 6 through 10 will be discussed in class.

In *A Guide to Wider Horizons*, we'll discuss chapters 1, 3, 5, 7 to 10, and 12. Everything discussed in class is fair game for quizzes and tests. *The final exam will be cumulative.*

**Course Objectives:** This is a survey course on astronomy. The students will learn about different kinds of objects that make up the universe (e.g. planets, stars, star clusters, and galaxies). We study the formation, stages of evolution, and end states of the stars. We discuss what powers the Sun and discuss the evidence that stellar evolution takes place on time scales of millions or billions of years. We emphasize that astronomy is an evidence-based science. We discuss telescopes that gather many different kinds of light (e.g. optical, infrared, ultraviolet, and radio waves). The ultimate purpose of the course is to know our place in the universe and to widen our horizons as far as possible.

**Topics by week** (subject to change):

Week 1, Introduction, scientific notation, the sky (chapter 1)  
Week 2, Phases of the Moon, eclipses (chapter 2)  
Week 3, History of astronomy (chapter 3)  
Week 4, History of astronomy, continued; Newtonian physics (chapter 4)  
Week 5, Newtonian physics, continued; relativity  
Weeks 6-7, Nature of light, telescopes (chapter 5)  
Week 8/9, Solar system topics (terrestrial planets, Jovian planets, dwarf planets, asteroids, meteors, comets, the Earth's carbon dioxide cycle, what would cause climate change, three ways to find extra-solar planets, the search for extraterrestrial life). These topics are covered in chapters 6 to 10, but you don't have to read them in their entirety. Which sections do you have to read? You have to figure that out by coming to class.  
Week 11, The Sun (chapter 11), basic properties of stars (chapter 12)  
Week 12, Star formation, the interstellar medium  
Week 13, Stellar evolution (chapter 13)  
Weeks 14/15, End states of stars (chapter 14)  
Whatever we have time to cover concerning The Milky Way (chapter 15), Galaxies, the expansion of the universe (chapter 16) and Cosmology (chapters 17, 18)

**Contributions to your grade:**

Quiz, 1%  
Online homework, 19%  
Hour exams: 20% each  $\times 2 = 40\%$   
Final exam: 40%

**Nominal grading scale:**

A: 80+ to 100, B: 70+ to 80, C: 60+ to 70, D: 50+ to 60, F: less than 50 percent.

**Notable dates:**

Wednesday, August 19, first day of class  
Wednesday, September 30, 1st exam (online via eCampus)  
Monday, November 9, 2nd exam (online via eCampus)  
Tuesday, November 10, 5 PM, Q-drop deadline  
Tuesday, November 24, last day of classes  
Final for 09:20 class (section 501) is Wednesday, Dec 2, from 8 to 10:30 AM  
Final for noon class (section 502) is Monday, Dec 7, from 11 AM to 1:30 PM

The class website at Texas A&M is:

[http://people.tamu.edu/~kevinkrisciunas/astr101\\_fall20.html](http://people.tamu.edu/~kevinkrisciunas/astr101_fall20.html)

The URL for Zoom for the 09:20 class is:

<https://tamu.zoom.us/j/95483246788>

The URL for Zoom for the 12:00 noon class is:

<https://tamu.zoom.us/j/93553305449>

The URL for Zoom office hours (Monday and Wednesday from 10:30 to 12:30) is:

<https://tamu.zoom.us/j/91597666689>

Online homework is done via: [pearsonmylabandmastering.com](http://pearsonmylabandmastering.com)

For online homework the Pearson course ID = krisciunas66672 (section 501, 09:20 class).

For online homework the Pearson course ID = krisciunas72984 (section 502, 12:00 class).

We will not be using clickers this semester. But if you come to class, bring a set of four 3 by 5 inch cards with you. Their colors should be red, blue, yellow, and green, and on the back they should be labeled A, B, C, and D, respectively, for the red, blue, yellow, and green cards.

When you have an access code from the packaging of your textbook, you will use that to obtain a username and password for Mastering Astronomy. Do not forget to write down your username and password!

**ADA statement:** *The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Student Services at White Creek complex on west campus or call 845-1637.*

**Aggie Honor Code:** *“An Aggie does not lie, cheat, or steal or tolerate those who do.”*  
Academic and personal integrity are very important. For more information go to:  
<http://aggiehonor.tamu.edu/>