

Astronomy 10

Section 1 (M through F, 7:30 - 8:20 am)

For full information on this course, see the class website at:
<http://nebula2.deanza.edu:16080/~marek/astro10night/index.html>

Welcome to Astronomy 10!

Do you need to fulfill a General-Ed Science requirement?

De Anza's Astronomy 10 class fulfills the **physical science** requirement from the [CSUGE](#) and [IGETC](#) lists.

Most students who take Astronomy 10 are non-science majors working through their science requirements before transferring or getting a De Anza Associate degree. I'm excited about sharing the adventure of astronomy with you!

For Current Students:

Make sure to familiarize yourself with the links in the navigation bar (at the top of the page). There you'll find all the information you'll need to 'navigate' your way through the quarter. It's a good idea to check the [Calendar](#) every day, and don't forget to use the Calendar's 'week' and 'month' buttons to see what's coming up. You'll also want to look at the [What2Know](#) page frequently, to guide your studying for the tests and the final exam.

Textbook: [Stars and Galaxies, 8th edition](#) by Seeds and Backman. The bookstore probably has used copies, and it may be available as part of their [textbook rental program](#). The publisher also has it available as an [ebook rental](#) and as a [physical rental](#).

Class Schedule:

Mon thru Fri, 7:30 - 8:20 am, [De Anza Planetarium](#).

Instructor:

Marek Cichanski

Office: S15a

Office Hours: M through F 9:30 - 10:20 am, plus other times by appointment.

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Dr. C's other internet content: [Twitter](#), [YouTube](#), [Vimeo](#), [Flickr](#), [Blogspot](#), [Delicious](#)

Student Learning Outcomes:

Appraise the benefits to society of astronomical research concerning stars and stellar systems.

Evaluate the impact on Earth's characteristics of the evolution of stars and stellar systems.

Evaluate astronomical news items or theories about stellar astronomy based upon the scientific method.



Astronomy 10 Lecture schedule, Winter 2015 7:30am Class

Important: Dates of TESTS are fixed, but the *lecture topics* (shown in *italics*) are tentative. For example, we may or may not cover “*Star Clusters*” on February 24th, depending on how quickly we cover the preceding material.

Each test covers the material since the last test.

Final Exam is comprehensive - it covers the whole quarter.

| | | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
|--------|-----|---|---|---|--|---|----------------------------------|
| Wk. 1 | Jan | Class Enrollment ⁵ <i>Looking at the Sky: What do we see?</i> | ⁶ <i>Diurnal apparent motions in the sky</i> | ⁷ <i>Annual apparent motions in the sky</i> | ⁸ <i>Constellations and apparent star magnitudes</i> | ⁹ <i>Moon phases and eclipses</i> | ¹⁰ |
| Wk. 2 | Jan | ¹² <i>Models of the universe: Geocentric vs. Heliocentric</i> | ¹³ <i>Galileo's Discoveries</i> | ¹⁴ <i>Tycho's data and Kepler's laws</i> | ¹⁵ <i>Newton's Laws: What causes a change in motion?</i> | ¹⁶ <i>Newton: Gravity, orbits, and tides</i> | ¹⁷ Last day to add |
| Wk. 3 | Jan | ¹⁹ HOLIDAY | ²⁰ <i>Einstein: Special Relativity</i> | ²¹ <i>Einstein's General Relativity: Gravity and curved spacetime</i> | ²² <i>How telescopes work</i> | ²³ <i>Observatories on Earth and in space</i> | ²⁴ |
| Wk. 4 | Jan | ²⁶ <i>Atoms and light</i> | ²⁷ TEST 1 | ²⁸ Review Test 1 | ²⁹ <i>Heat and light: How hot objects glow</i> | ³⁰ <i>Spectroscopy</i> <small>Last day to apply for Pass/No Pass grading</small> | ³¹ |
| Wk. 5 | Feb | ² <i>Ways of measuring distances</i> | ³ <i>The Sun: Structure, fusion, magnetic field</i> | ⁴ <i>Stars: What we can observe</i> | ⁵ <i>Stars: Figuring out temps, lum's, sizes</i> | ⁶ <i>Stars: Classification and the H-R diagram</i> | ⁷ |
| Wk. 6 | Feb | ⁹ <i>Stars: Figuring out their masses</i> | ¹⁰ <i>Between the stars: Nebulae</i> | ¹¹ <i>Between the stars: The interstellar medium</i> | ¹² <i>Star formation: Protostars and nebulae</i> | ¹³ HOLIDAY | ¹⁴ HOLIDAY |
| Wk. 7 | Feb | ¹⁶ HOLIDAY | ¹⁷ TEST 2 | ¹⁸ Review Test 2 | ¹⁹ <i>Star formation: Structure and balance in stars</i> | ²⁰ <i>Stellar evolution: Low-mass stars like the Sun</i> | ²¹ |
| Wk. 8 | Feb | ²³ <i>Stellar evolution: Dramatic fates of high-mass stars</i> | ²⁴ <i>Star clusters</i> | ²⁵ <i>Variable stars</i> | ²⁶ <i>White dwarfs and 'planetary' nebulae</i> | ²⁷ <i>Neutron stars</i> <small>Last day to drop with "W" grade</small> | ²⁸ |
| Wk. 9 | Mar | ² <i>Black holes</i> | ³ <i>The discovery of the Milky Way's structure</i> | ⁴ <i>Our home galaxy: The Milky Way</i> | ⁵ <i>Galaxies beyond the Milky Way</i> | ⁶ <i>Evidence for dark matter in galaxies</i> | ⁷ |
| Wk. 10 | Mar | ⁹ <i>Colliding galaxies and our future in 'Milkomeda'</i> | ¹⁰ TEST 3 | ¹¹ Review Test 3 | ¹² <i>Active galactic nuclei and super-massive black holes</i> | ¹³ <i>Hubble's Law and the expanding universe</i> | ¹⁴ |
| Wk. 11 | Mar | ¹⁶ <i>The fireball and its relics: Probing the early universe</i> | ¹⁷ <i>Cosmological evidence for dark matter</i> | ¹⁸ <i>Dark energy and the accelerating universe</i> | ¹⁹ <i>Cosmic inflation and large-scale structure</i> | ²⁰ <i>The fate of the universe</i> | ²¹ |
| Wk. 12 | Mar | ²³ Review Session + any leftover lecture material | ²⁴ FINAL EXAM 7:00 - 9:00 | ²⁵ | ²⁶ | ²⁷ | ²⁸ |

FOR READING ASSIGNMENTS, SEE THE ONLINE VERSION OF THIS SCHEDULE AT:

<http://nebula2.deanza.edu:16080/~marek/astro10night/calendar.html>

GRADES

step 1:

You take various tests and the final

Test 1

Test 2

200 points each

Test 3

FINAL EXAM

300 points

step 2:

I drop the lowest midterm score

-200pts = **400 points of midterms**

*There's no way I'm gonna drop **this** one...*

step 3:

I calculate the final grade.

Your final percentage =

The points you earned, after dropping lowest scores as described at left

700 possible points

I then round your final percentage to the nearest whole percent, and use the following grading scale:

Notes:

1) A %-age like 88.7 rounds to an 89, so it's an A.

| | |
|--------|---|
| 89-100 | A |
| 79-88 | B |
| 68-78 | C |
| 57-67 | D |
| <57 | F |

If something causes you to miss a test, that will be the one that you drop. This means that there are **NO MAKEUPS**.

You have to take all of your midterms and your final exam with **YOUR SECTION** of the class.

I'm afraid that my schedule won't allow me to give you a final at a different time in order to fit your vacation.

You'll need to plan around the final.

Astronomy 10 Rules and Procedures

During the first few weeks of class, I will collect state-mandated attendance data using a sign-in sheet and/or attendance chart.

ADDING THE CLASS:

If you add the class, *make sure that your add code has worked, and that you have been properly added to the class.* If not, it is your responsibility to check with the Admissions/Records office to find out how this can be corrected. After the end of Week 6, the College cannot process a late add, and you could find yourself not enrolled and not receiving a grade for the course, if you're not registered!

DROPPING THE CLASS:

I would like to see everyone complete the course, earn a good grade, and become excited about science. However, the realities of life sometimes get in the way. You should assess your situation realistically throughout the quarter. If you decide to drop the class, you must do so by the final date to drop with a "w", or you will receive an "F".

Let me re-emphasize that: If you decide to drop the course, it is *your* responsibility to go to the registrar and drop yourself. The deadline is the end of the eighth week.

VERY IMPORTANT INFORMATION ABOUT DROPPING AND THE END OF THE QUARTER:

For many years, De Anza students have been given the impression that "your instructor can drop you" after the end of the 8th week. THIS IS CHANGING! We are no longer allowed to give a "W" on the final grade form. Additionally, I will NOT be able to drop you using a blue 'Addendum to Class List' form after the end of the 8th week. If you have a personal hardship after the end of the 8th week, you will have to request a "Late Drop" using a white form called "Petition for Exception to Registration Policies", which will be evaluated by the Registrar and/or the Academic Council.

CLASS ENVIRONMENT:

Remember that we have all chosen to be in this class. We should thus have an environment that fits this choice.

Talking to your neighbor(s) while I'm lecturing, reading non-course material in class, doing outside homework, and using wireless devices of any kind are not allowed in class, and may result in dismissal for the remainder of the class period. Such dismissal will count as an absence.

TESTS:

After you start working on a test or quiz, you must hand it in before leaving the room.

If you arrive late for a test or quiz, you won't be given extra time to finish it.

On tests and quizzes, once the first person has turned it in and left the room, no further latecomers will be given tests.

If you find yourself wanting to use a calculator on a test (such as to solve an extra-credit question that involves a numerical calculation), you'll need to use a regular calculator; you can't use a cell-phone calculator.

NOTICE:

Cheating on any exam or project is grounds for a failing grade in the class and a permanent note in a student's file. "Cheating" is defined (in this course) to be an effort by a student to obtain a grade by any means other than demonstration of that student's individual achievement in mastering the class material and/or fulfilling terms of a project.

Further grounds for expulsion from the class include any activity which interferes with others' ability to benefit from the class (such as chronic distracting behavior) or which degrades the Planetarium's function or environment.