

Astronomy 4: Astronomy of the Solar System

Section 6273 – Course Syllabus

Instructor

Dr. Anne Metevier

Email: ametevier@santarosa.edu (or message me on Canvas)

Office Hours: Mondays and Tuesdays 12-1pm in my office PC 631, or by appointment

Course Description

A descriptive introduction to the Solar System including the Sun, Moon, planets, asteroids, and comets. Topics will include lunar phases, eclipses, historical geocentric and heliocentric models of the cosmos, planetary geology, planetary atmospheres and climates, the formation of the Solar System, and extra-solar planetary systems.

Student Learning Outcomes

Upon completion of this course, students will be able to:

1. Critically analyze astronomical observations and the scientific theories used to explain them.
2. Recognize, differentiate, and describe the various astronomical bodies within the universe, concentrating on the celestial bodies in the Solar System.
3. Explain why some astronomical bodies exhibit phases.
4. Recognize the factors affecting planetary seasons and atmospheres, and relate these to Earth.

Recommended Preparation

Completion or concurrent enrollment in Math 150A and English 100 or ESL 100

Textbook

OpenStax Astronomy by Franknoi, Morrison, and Wolff

The course textbook is free and can be downloaded at <https://openstax.org/details/astronomy>

If you prefer a paper copy of the book, you may be able to buy one at the SRJC bookstore or at Amazon, or you can check out the book at the library for a few hours at a time:

- call number QB2.A1 F73 2017 (Petaluma campus library)
- call number QB2.A1 F73 PersCopy Sparks (Doyle library)

Course Web Site and Announcements

This course will rely on the Canvas course web site for assignment instructions, submitting assignments, sharing resources, and viewing grades.

Any important messages about the course (such as changes to the course schedule) will be made via email and/or Canvas announcements. Please be sure to check both regularly.

Special Needs

Students with disabilities who may need accommodations in this class are strongly encouraged to contact Disability Resources (778-2491) as soon as possible to better ensure such accommodations are made in a timely fashion. It is important to me that every student has a fair opportunity to learn in this class.

Students with disabilities should also see me if they might need accommodation in case of an emergency. Your safety is important to me.

Important Dates

Date Class Begins: 1/28/2020

Date Class Ends: 5/7/2020

Last Day to Add without add code: 1/30/2020

Last Day to Add with add code: 2/18/2020

Last Day to Drop and be eligible for refund: 2/4/2020

Last Day to opt for Pass/No Pass option: 2/27/2020

Last Day to Drop without a 'W' symbol: 2/18/2020

Last Day to Drop with a 'W' symbol: 4/15/2020

Date and time of Final Exam: 5/7/2020 from 10am – 12pm

Dropping the Class

If you decide to discontinue this course, it is your responsibility to officially drop it to avoid getting no refund, a 'W' symbol, or a grade.

Pass–No Pass (P/NP)

You may take this class P/NP. If you choose to do this, you must file for the P/NP option by 2/27/2020. You can add the option online with TLC or file the P/NP form with Admissions and Records. With a grade of C or better, you will get a P.

Once you decide to go for P/NP, you cannot change back to a letter grade. If you are taking this course as part of a certificate program, check with a counselor to be sure that you can take the class P/NP and still get the credit you need toward your certificate.

Classroom Etiquette and Standards of Conduct

Students who register in SRJC classes are required to abide by the SRJC Student Conduct Standards. Violation of the Standards is basis for referral to the Vice President of Student Services or dismissal from class or from the College. For more information, see the Student Code of Conduct page here: <https://student-conduct.santarosa.edu/code-conduct-0>

Examples of disruptive behaviors that are not permitted in the class are:

- Inappropriate use of phones, tablets, laptops, or headphones
- Excessive tardiness, leaving class early, or leaving and returning to the classroom
- Talking, whispering, or note-passing that is distracting to other students or to the instructor

Academic Honesty

Collaborating on or copying of tests or homework in whole or in part will be considered an act of academic dishonesty and result in a grade of 0 for that test or assignment. I encourage students to share information and ideas, but not their work. Please refer to the SRJC Student Conduct Standards (see link above) for more information on how to avoid plagiarism.

Some examples of cheating or plagiarism that will not be tolerated are:

- Copying work from another student, or giving work to another student to copy
- Copying and pasting text from internet sources into homework assignments or projects
- Viewing, comparing, or copying the work of another student during an exam
- Intentionally allowing another student to view your work during an exam
- Using a phone or “cheat sheet” during an exam or quiz

Grading Policy

Visit “Grades” in Canvas to keep track of your grades, but please note that Canvas does not quite provide a perfect calculation of your grade. For instance, I do not post your participation grade until the end of the semester, so this isn’t included till December. If you have questions about grades, please check with me in person (I do not provide grade information over email).

Overall grade policy:

| | | |
|---|---------|--------------------|
| A | 90-100% | 900 points or more |
| B | 80-89% | 800 to 899 points |
| C | 70-79% | 700 to 799 points |
| D | 60-69% | 600 to 699 points |

Course components: 1000 points total

| | |
|---------------------|----------------------------|
| Class participation | 150 points (15%) |
| Weekly homework | 240 points (24%) |
| Midterm Exams 1, 2 | 180 points each (18% each) |
| Final Exam | 250 points (25%) |

If you are taking this course Pass/No Pass, you will need at least 70% of the total class points (700 points) to pass the class.

Class Participation

Participation is an important component of your final grade. I regularly take attendance, and I encourage and make note of participation during in-class discussions. There will be several in-class individual and small-group activities that will be turned in for credit. Office visits also count toward your participation grade, and I encourage at least one office visit during the semester.

Weekly Homework

I will give 9 homework assignments this semester through the course Canvas site. Some assignments will require a bit of writing, others will be multiple choice or short answer, and some will include a bit of each. These assignments are meant to help you keep up with course readings and develop a stronger understanding of the course material. Homework assignments will be made available over the weekend and will be due the following Friday at 11:59pm. Your lowest homework score will be dropped, so that only 8 homework assignments will count toward your grade. It is your responsibility to keep up with the coursework and turn your homework in on time. No late homework assignments will be accepted.

Exams

There are two midterm exams and one final exam, as listed in the course schedule. The exams will cover material from lectures, homework, reading, and in-class activities. Exams will be in multiple-choice format. Make-up exams are rarely given, only in cases of serious illness or other very serious circumstances, at the instructor’s discretion.

It is very important that students are on time for exams, so that everyone has the maximum amount of time to take the test. If you arrive after someone else has already finished the exam and left the room, I will not be able to give you the exam and your grade will be a zero.

The final exam will cover the entire course and will take place on Thursday, May 7, from 10am–12pm. No make-up final exams will be given for any reason once grading is completed.

Extra Credit

Extra credit is available for attending an astronomy-related presentation, exhibit, or other event, and submitting a one-page write-up of your experience. Specific ideas for events you can attend and instructions for what to include in your write-up will be given on the course Canvas site. You may submit up to 2 extra credit assignments worth up to 25 points each, for a total of 50 points. This has the potential to boost your grade by up to 5%. Extra credit may be submitted any time up to the last Friday before the final exam, May 1 at 11:59pm.

Approximate Course Schedule

If any major changes are made to the class schedule during the semester, I will update this schedule and post an announcement on Canvas.

| # | Day | Date | Chapters | Topic | Assignment/Test |
|----|-------|--------|---------------|---------------------------------|--|
| 1 | Tues | Jan 28 | 1 | Course introduction | |
| 2 | Thurs | Jan 30 | 2.2, 2.4 | Our place in the universe | |
| 3 | Tues | Feb 4 | 3 | Planetary motion and gravity | |
| 4 | Thurs | Feb 6 | 3,4 | Orbits, Earth's sky | HW #1 due Friday |
| 5 | Tues | Feb 11 | 4 | Earth, Moon, and Sun | |
| | Thurs | Feb 13 | | Staff Professional Development | no class |
| 6 | Tues | Feb 18 | 5.2, 6.1, 6.2 | Light and telescopes | |
| 7 | Thurs | Feb 20 | 7 | Solar System origins | HW #2 due Friday |
| 8 | Tues | Feb 25 | 7,8 | Earth origins and systems | |
| 9 | Thurs | Feb 27 | 8 | A changing Earth | HW #3 due Friday |
| 10 | Tues | Mar 3 | | | Midterm Exam 1 |
| 11 | Thurs | Mar 5 | 9 | Cratered worlds | |
| 12 | Tues | Mar 10 | 9 | Moon and Mercury | |
| 13 | Thurs | Mar 12 | 10 | Terrestrial worlds | HW #4 due Friday |
| | Tues | Mar 17 | | Spring break | no class |
| | Thurs | Mar 19 | | Spring break | no class |
| 14 | Tues | Mar 24 | 10 | Venus and Mars | |
| 15 | Thurs | Mar 26 | 11 | Gas and ice giants | HW #5 due Friday |
| 16 | Tues | Mar 31 | 11,12 | Outer planets, rings, and moons | |
| 17 | Thurs | Apr 2 | 12 | Outer moons, dwarf planets | HW #6 due Friday |
| 18 | Tues | Apr 7 | | | Midterm Exam 2 |
| 19 | Thurs | Apr 9 | 13 | Asteroids and comets | |
| 20 | Tues | Apr 14 | 13,14 | Meteors and meteorites | |
| 21 | Thurs | Apr 16 | 14 | Solar System history and future | HW #7 due Friday |
| 22 | Tues | Apr 21 | 15 | The Sun's structure | |
| 23 | Thurs | Apr 23 | 15,16 | Solar activity | HW #8 due Friday |
| 24 | Tues | Apr 28 | 16 | The Sun's energy | |
| 25 | Thurs | Apr 30 | 21 | Planetary systems in formation | HW #9 due Friday Extra credit due Fri |
| 26 | Tues | May 5 | 21 | Exoplanets | |
| | Thurs | May 7 | | | Final Exam 10am – 12pm |

Campus Resources for Students

Many terrific resources are available to SRJC students on the Petaluma Campus. These include:

- **Our House Intercultural Center**, Jacobs Hall PC 116, (707) 778-2470
- **Counseling Services**, Doyle Hall PC 216, (707) 778-3914
- **Disability Resources Department**, Jacobs Hall PC 101, (707) 778-2491
- **Transfer Center**, Doyle Hall PC 216, (707) 778-3914
- **Tutorial Center**, Doyle Hall PC 247, (707) 778-2409
- **Food Resources**, see <https://resources.santarosa.edu/food-resources> for info on free food distribution on the Petaluma Campus and how to find out if you can apply for CalFresh assistance