

Astronomy 1115 Syllabus

Section: 501

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Microsoft Teams Link:	Click Here
Office Hours:	Monday and Thursday 7:30 pm – 8:30 pm
Website:	Click Here

Introduction

Hello and welcome to Astronomy 1115. This course is taught online. It will be your responsibility to watch the weekly lectures, complete the discussion posts, complete the homework assignments, quizzes, and exams that will be posted in UNM Learn. The class will cover a wide range of topics in astronomy including, but not limited to, the Earth, Moon, stars, our solar system, telescopes, the physics of astronomy, the Sun, space, galaxies, black holes, the life cycle of stars, the origin of the universe, and the search for life in the cosmos. I reserve the right to change/update this syllabus as needed and I will do my best to inform you of any changes that occur. I look forward to a productive semester and I will do my best to present the material in a clear, concise, and hopefully interesting manner. If you have any questions about anything please feel free to email me at any time and definitely come to office hours as often as you can.

Textbook & Planetarium Software

The textbook is **free** online from *OpenStax.org* and you can download it [here](#).

From time to time we may be using a **free** planetarium software package as well. It is from *Stellarium* and you can download it to your computer or use it directly from the web by clicking [here](#).

Course Policies

- This class will be solely taught online. It will be up to you, the student, to complete all assignments before the due dates.
- No late homework will be accepted. You will have one week to complete the homework assignments and discussion posts/replies. Only under dire circumstances will I consider homework to be turned in late and it must be supported with official documentation.
- Exams and quizzes will be posted regularly. 30 minutes will be given to complete a quiz, 1.5 hours for exams, and 2 hours for the final.
- Please be respectful of myself (Mr. Sanchez) and other students. No bullying of any kind will be tolerated.
- I am respectful to all races, genders, sexual orientations, gender identities, and religious beliefs. Please inform me if you self identify as anything other than the standard gender pronouns.

- Plagiarism will not be tolerated in this class. Failure to comply with UNM/UNM Valencia policy on plagiarism will result in a zero for the assignment, discussion post, quiz, exam, and/or final exam. Depending on the severity of the plagiarism, a formal complaint may be filed to the Dean of Students to determine if further action is needed. Please view and understand UNM's plagiarism guidelines by clicking [here](#).
- I will respond to emails within two days of receiving them. Most of the time I will respond sooner, but expect to see a response from me within two days.
- Students should let me know ahead of time if they will be out of town or otherwise unable to complete any assignments. Give me time so I can accommodate your situation to the best of my ability. That does not mean I will be accommodating (for example, if you are leaving early for spring break or just taking a "week off"), it just means communicate with me your plans so we can come to the best possible resolution.
- Covid-19: Please follow any local social distancing, mask wearing, hand-washing, and quarantine rules that are in place. We follow these rules not only to protect ourselves, but also everyone, especially those individuals that are at a higher risk of severe symptoms from this global pandemic.
- If at any point that I have failed to reasonably accommodate you or your situation, please reach out to me via email (jsanchez@1819@unm.edu) and we can work together to solve the situation.
- Learning should be enjoyable. I will do my best to educate you on all things astronomy and make the course an interesting and enjoyable experience.

Course Objectives

By the end of this course you will be able to discuss and understand the following topics:

- The night sky as observed from Earth
 - Coordinate systems
 - Apparent daily and yearly motions of astronomical objects
- The scientific method
- The scale of the solar system, galaxies, and the universe
- Telescopes and telescope designs
- Continuous, absorption, and emission line spectra and how they apply to astronomical objects
- Solar system objects
- Models describing the formation of our solar system
- Gravity, electromagnetism, and other physics related topics that can be used to describe the universe
- The discovery of exoplanets and how they are discovered
- The Sun
 - structure and the source of its power
 - solar activity and its effects on the solar system
- The life and death of stars
 - solar life cycles
 - Hertzsprung-Russell diagrams
 - white dwarfs
 - neutron stars
 - black holes

- The structure and formation of galaxies and galaxy clusters
- The origin of the universe
 - the Big Bang
 - expansion
 - evolution up to present day
- The search for life beyond the Earth

Grading

HOMEWORK 30%: There will be one weekly homework assignment that will cover the week’s course material. It will consist of questions directly related to the lecture and book readings. These homework assignments will be designed to help you understand the material and prepare you for the quizzes and exams.

DISCUSSION ASSIGNMENT 10%: Each week I will propose a topic in astronomy that will require you to discuss the question in a 50 word minimum discussion post. You will create a discussion thread in UNM Learn, briefly discussing the question. You will then need to respond to two other students’ assignments. A proper response will earn you maximum points. A proper response will be to address what your colleague stated in their discussion assignment and give a thoughtful discussion about what was posted. Responses like, “I agree”, or “good job” are not proper responses. You can agree or disagree with a post, but please follow all netiquette rules. Review UNM’s netiquette guidelines [here](#).

QUIZZES 15%: There will be a quiz roughly every other week as shown on the course schedule below. The quiz material will be based on the previous two homework assignments as well as the previous two weeks of lecture instruction. I reserve the right to add any material that I chose from material covered up to the quiz date as I see fit. To be prepared for the quiz make sure you understand and can apply the homework assignments as well as have understood the previous lectures.

EXAMS 25%: There will be three exams that will assess your understanding of the material. Understand the homework, quizzes, and lectures leading up to an exam and you will be well prepared. Please see the course schedule below for exam dates.

FINAL EXAM 20%: There will be a cumulative final exam.

Grade Distinctions:

98-100 A+	93-97.99 A	90-92.99 A-
87-89.99 B+	83-86.99 B	80-82.99 B-
77-79.99 C+	73-76.99 C	70-72.99 C-
67-69.99 D+	63-66.99 D	60-62.99 D-
Below 60 F		

Office Hours

Attending office hours will be the key to your success in this course. Office hours will be held on Microsoft Teams and the link is given at the beginning of this syllabus. I will gladly answer any questions you may have related to the assigned material. Please attend my office hours early and often.

Learning Outcomes

The following are the learning outcomes for this course. These are taken directly from the New Mexico higher education department (NMHED). You can click [here](#) to find them on the NMHED's website as well.

1. Students will discuss the night sky as seen from Earth, including coordinate systems, the apparent daily and yearly motions of the sun, Moon, and stars, and their resulting astronomical phenomena.
2. Students will list and apply the steps of the scientific method.
3. Students will describe the scale of the Solar System, Galaxy, and the Universe.
4. Students will explain telescope design and how telescopes and spectra are used to extract information about Astronomical objects.
5. Students will describe the formation scenarios and properties of solar system objects.
6. Students will describe gravity, electromagnetism, and other physical processes that determine the appearance of the universe and its constituents.
7. Students will describe methods by which planets are discovered around other stars and current results.
8. Students will describe the structure, energy generation, and activity of the sun.
9. Students will compare our sun to other stars and outline the evolution of stars of different masses and its end products, including black holes.
10. Students will describe the structure of the Milky Way and other galaxies and galaxy clusters.
11. Students will describe the origin, evolution, and expansion of the universe based on the Big Bang Theory and recent Astronomical observations.
12. Students will describe conditions for life, its origins, and possible locations in the universe.

Students with Disabilities

Qualifying students with disabilities should contact me immediately so proper accommodations can be arranged. My faculty responsibilities include:

- Being open to accommodating students.
- Providing program access.
- Meeting with students to discuss their needs.
- Implementing reasonable accommodations.
- Maintaining confidentiality.

Title IX Statement

Title IX prohibitions on sex discrimination include various forms of sexual misconduct, such as sexual assault, rape, sexual harassment, domestic and dating violence, and stalking. Current UNM policy designates instructors as required reporters, which means that if I am notified (outside of classroom activities) about any Title IX violations, I must report this information to the Title IX coordinator. If you or someone you know has been harassed or assaulted and would like to receive support and academic advocacy, there are numerous confidential routes available to you. For example, you can contact the Women's Resource Center, the LGBTQ Resource Center, Student Health and Counseling (SHAC), or LoboRESPECT. LoboRESPECT can be contacted on their 24-hour crisis line, (505) 277-2911 and online at loborespect@unm.edu. You can receive non-confidential support and learn more about Title IX through the Title IX Coordinator at (505) 277-5251 and <http://oeo.unm.edu/title-ix/>. Reports to law enforcement can be made to UNM Police Department at (505) 277-2241.

Plagiarism

Please adhere to the following UNM Valencia Policy on Academic Dishonesty:

Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or otherwise fails to meet the standards. Any student judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course. Academic dishonesty includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.

Learning Center

Please take advantage of tutoring available from the Learning Center. Click [here](#) for more information. If you would like to request a tutoring appointment click [here](#) for the form that you have to fill out.

Course Schedule

Please see the course schedule (calendar) on the following pages.

JANUARY
2021
ASTRONOMY 1115

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	<i>MLK Jr. Day</i>	18	<i>First Day of Class</i>	19	20	21
		Lecture 1 and 2 Posted				
24	25	26	27	28	29	30
	Homework 1 Due Lecture 3 and 4 Posted		Discussion Post 1 Due			
31						
Discussion Post 1 Response Due						

FEBRUARY
2021
ASTRONOMY 1115

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1 Homework 2 Due Lecture 5 and 6 Posted	2	3 Discussion Post 2 Due	4 Quiz 1 Posted	5	6 Quiz 1 Due
7 Discussion Post 2 Response Due	8 Homework 3 Due Lecture 7 and 8 Posted	9	10 Discussion Post 3 Due	11	12	13
14 Discussion Post 3 Response Due	15 Homework 4 Due Lecture 9 and 10 Posted	16	17 Discussion Post 4 Due	18 Exam 1 Posted	19	20 Exam 1 Due
21 Discussion Post 4 Response Due	22 Homework 5 Due Lecture 11 and 12 Posted	23	24 Discussion Post 5 Due	25	26	27
28 Discussion Post 5 Response						

MARCH
2021
ASTRONOMY 1115

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1 Homework 6 Due Lecture 13 and 14 Posted	2	3 Discussion Post 6 Due	4 Quiz 2 Posted	5	6 Quiz 2 Due
7 Discussion Post 6 Response Due	8 Homework 7 Due Lecture 15 and 16 Posted	9	10 Discussion Post 7 Due	11	12	13 Discussion Post 7 Response Due
<i>SPRING BREAK</i>	<i>SPRING BREAK</i>	<i>SPRING BREAK</i>	<i>SPRING BREAK</i>	<i>SPRING BREAK</i>	<i>SPRING BREAK</i>	<i>SPRING BREAK</i>
14	15	16	17	18	19	20
21 Homework 8 Due Lecture 17 and 18 Posted	22	23	24 Discussion Post 8 Due	25 Exam 2 Posted	26	27 Exam 2 Due
28 Discussion Post 8 Response Due	29 Homework 9 Due Lecture 19 and 20 Posted	30	31 Discussion Post 9 Due			

APRIL
2021
ASTRONOMY 1115

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2	3
4 Discussion Post 9 Response Due	5 Homework 10 Due Lecture 21 and 22 Posted	6	7 Discussion Post 10 Due	8 Quiz 3 Posted	9	10 Quiz 3 Due
11 Discussion Post 10 Response Due	12 Homework 11 Due Lecture 23 and 24 Posted	13	14 Discussion Post 11 Due	15	16	17
18 Discussion Post 11 Response Due	19 Homework 12 Due Lecture 25 and 26 Posted	20	21 Discussion Post 12 Due	22 Exam 3 Posted	23	24 Exam 3 Due
25 Discussion Post 12 Response Due	26 Homework 13 Due Lecture 27 and 28 Posted	27	28 Discussion 13 Post Due	29	30	

MAY
2021
ASTRONOMY 1115

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2 Discussion Post 13 Response Due	3 Homework 14 Due Lecture 29 and 30 Posted	4	5	6	7	8 <i>Last Day of Class</i>
9	10 Final Exam Posted	11	12	13	14 Final Exam Due	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					