Astronomy 1115L Syllabus

Section: 501

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Introduction

Hello and welcome to Astronomy 1115L. This course is taught online. I will post weekly labs and you will have that week to complete it at a time of your discretion. There will also be 3 Naked-Eye Observation Projects where you will have to go outside and observe objects in the sky to complete the project. These Observation Labs may take a couple of weeks of observation time to complete, so I suggest you start on them as soon as I post them. The due dates for all of these assignments are shown below. 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.

Textbook

There is not a textbook for this course. All of the materials will be provided for you online. You will need access to the night sky (observing projects), but by no means do you have to get out of the city for these. You will be observing objects that will be readily available, even for a well lit city area.

Course Policies

- This class will be solely taught online. A lab will be released weekly on UNM Learn. You will have one week to complete the lab and turn it in. Please start on these labs early as they can take a little longer to work through.
- No late lab work will be accepted. You will have one week to complete the lab assignments. Only under dire circumstances will I consider a lab to be turned in late and it must be supported with official documentation.
- 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.
- 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.

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.

Grading

LABS 70%: There will be 14 Labs that you will need to complete on your own during the week. They are geared to complete your understanding of the course material and to solidify your understanding of the mathematics and mechanics of astronomy.

NAKED-EYE OBSERVATIONS 30%: There will be 3 naked-eye projects this semester. These will require you to go outside and do some observations with your naked-eye. Some of these projects may span over a couple of days/weeks so start them early in case of inclement weather and other personal delays.

Course Schedule

Week	Date(s)	Lab Assignment	Lab Due date	Observation Proj.	Obs. Proj. Due Date
1	Aug 17-21	Lab1 Foundations		Project 1	
2	Aug 24-28	Lab2 Properties of Planets	Lab1, Aug 24		
3	Aug 31-Sept 4	Lab 3 Kepler's Laws	Lab2, Aug 31		
4	Sept 7-11	Lab 4 Parallax	Lab3, Sept 7		
5	Sept 14-18	Lab5 Telescopes	Lab4, Sept 14	Project 2	Obs. Proj. 1, Sept 14
6	Sept 21-25	Lab6 Spectra and Atoms	Lab5, Sept 21		
7	Sept 28-Oct 2	Lab7 Properties of Stars	Lab6, Sept 28		
8	Oct 5-9	Lab8 Stellar Evolution	Lab7, Oct 5		
9	Oct 12-16	Lab9 Binary Stars	Lab8, Oct 12		
10	Oct 19-23	Lab10 Star Clusters & Milky Way	Lab9, Oct 19	Project 3	Obs. Proj. 2, Oct 19
11	Oct 26-30	Lab11 Galaxies & Cepheids	Lab10, Oct 26		
12	Nov 2-6	Lab12 Cosmology	Lab11, Nov 2		
13	Nov 9-13	Lab13 Quasars	Lab12, Nov 9		
14	Nov16-20	Lab14 Alien Life	Lab13, Nov16		
15	Nov 23-27		Lab14, Nov 23		Obs. Proj. 3, Nov 23
16	Nov 30-Dec 4				

Office Hours

Attending office hours will be the key to your success in this course. I will gladly answer any questions you may have related to the assigned material. Please attend my office hours early and often.

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 Womens 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.