











General Astronomy ASTR 2115



Instructor Info —

-  Prof. Diana Dragomir
-  PAIS 3226
-  exoplanets.unm.edu
-  dragomir@unm.edu

Course Info —

-  Math 150 or 162. Physics 151 or higher. ASTR 2110. We will learn some physics concepts and make use of high-school level algebra and trigonometry, but will not use calculus.
-  Tue & Thu
-  11:00am - 12:15pm
-  PAIS 3205

Office Hours —

-  By appointment (or after class).
-  PAIS 3226

Course Overview

Astronomy 2115 is a general astronomy course at a greater level of detail than is covered in Astronomy 101. ASTR 2110 and 2115 are also the first required ASTR classes for BS Astrophysics majors. ASTR 2115 is also required for the BA in Physics and Astrophysics. This course will describe the nature of the Universe starting with stars and working up through star clusters, galaxies, clusters of galaxies and superclusters. Black holes, pulsars, supernovae, dark matter, the expanding Universe and other fascinating astronomical topics will also be explored. We will use math and physics as we explore the Universe.

About Me

I am an observational astronomer whose focus is on exoplanets. I aim to measure the properties of exoplanets, and how these properties correlate to the planets' formation and evolution. It turns out that a fuller understanding of exoplanets requires also an understanding of the history and properties of their host *stars*, and even of the details of their galactic environment. Therefore I have a keen interest in astronomy at all scales, and I look forward to sharing that with you.

Material

Required Text

Universe, Freedman, Geller and Kaufmann, 11th edition. University Science Books. 2019. (ISBN: 9781319039448, eBook ISBN: 9781319227975)

Grading Scheme

The details of the grading scheme and grading components could be subject to minor changes, but if so I will inform the class ahead of time during lectures and via email, and ensure that all students agree with the changes.

30%	Class Participation (10% for in-class questions based on readings and lectures; and 20% for in-class activities)
20%	Homework Assignments
25%	Mid-term Project and Presentations
25%	Final Exam

Note: If you take this class "Credit/No Credit", according to university policy, your final grade must be a "C" or better in order to receive credit.

Class Participation

There are assigned readings for every class (except for the first class). Throughout each class, I will periodically randomly select a student to answer questions about the topics just covered, or from the readings.. I will keep track to make sure everyone gets asked more or less the same number of times through the course.

The second part of class participation will consist of short calculations or problems to solve, thought experiments, or discussions related to the course material, either individually or in groups. Then I will select a student at random to briefly present their answers. Sometimes we may cover together a problem from the homework that proved particularly challenging. Evidently you must be present in class and participate in these sessions in order to get the participation points, but "getting the right answer" is not necessary to earn these participation points. This type of activity will happen at least once a week.

Homework Assignments

There will be six homework assignments spread out over the course of the semester. They will be due every 2 - 3 weeks. They will be posted on the course webpage/UNM Canvas. Homeworks are to be submitted online on UNM Learn using the appropriate link provided there. Credit for late homeworks will drop by 15% for every day late within a week, and no credit thereafter.

Mid-term Project

The mid-term project will consist of a written report (~5 pages) and an oral presentation on a scientific paper (~15 minutes). The presentations will take place on October 11 in class, and can be given in powerpoint, keynote, google slides, or a similar presentation software. The reports will be due one week earlier. A choice of papers and detailed instructions will be provided during the first week of class.

Learning Goals

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

- Use physical principles to describe how stars and galaxies form and evolve over time.
- Recount the scientific story of the universe and our place and time within it.
- Learn and construct physical models of astronomical objects to explain observations.
- Apply the "scientific method" towards obtaining answers to (new) questions in the study of stars, galaxies and the Universe.
- Synthesize material from multiple sources, critically assess it and present it clearly and concisely in written and oral form.

Diversity and Inclusivity Statement

I consider this classroom to be a place where you will be treated with respect, and I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability - and other visible and non-visible differences. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class.

Citizenship and/or Immigration Status: All students are welcome in this class regardless of citizenship, residency, or immigration status. Your professor will respect your privacy if you choose to disclose your status. UNM as an institution has made a core commitment to the success of all our students, including members of our undocumented community. The Administration's welcome is found on our [website](#).

Title IX

A Note About Sexual Violence and Sexual Misconduct: As a UNM faculty member, I am required to inform the Title IX Coordinator at the [Office of Equal Opportunity](#) of any report I receive of gender discrimination which includes sexual harassment, sexual misconduct, and/or sexual violence. You can read the full [campus policy](#) regarding sexual misconduct. If you have experienced sexual violence or sexual misconduct, please ask a faculty or staff member for help or contact [LOBORESPECT](#).

Accommodations for Students with Disabilities

UNM is committed to providing equitable access to learning opportunities for students with documented disabilities. As your instructor, it is my objective to facilitate an inclusive classroom setting, in which students have full access and opportunity to participate. To engage in a confidential conversation about the process for requesting reasonable accommodations for this class and/or program, please contact Accessibility Resource Center at arcsrvs@unm.edu or by phone at 505-277-3506.

If you need an accommodation based on how course requirements interact with the impact of a disability, you should contact me to arrange an appointment as soon as possible. At the appointment we can discuss the course format and requirements, anticipate the need for adjustments and explore potential accommodations. I rely on the [Accessibility Resource Center](#) for assistance in developing strategies and verifying accommodation needs.

Academic Integrity

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.

COVID-19 Health and Awareness

UNM is a mask friendly, but not a mask required, community. To be registered or employed at UNM, Students, faculty, and staff must all meet UNM's Administrative Mandate on Required COVID-19 vaccination.

COVID-19 Symptoms and Positive Test Results

If you are experiencing COVID-19 symptoms, please do not come to class. If you have a positive COVID-19 test, please stay home for five days and isolate yourself from others, per the Centers for Disease Control (CDC) guidelines. If you do need to stay home, please communicate with me at dragomir@unm.edu; I can work with you to provide alternatives for course participation and completion. UNM faculty and staff know that these are challenging times. Please let us know that you need support so that we can connect you to the right resources and please be aware that UNM will publish information on websites and email about any changes to our public health status and community response.