



Course Number Course Name	ASTR 1115L, Introduction to Astronomy Laboratory
Credit Value (Breakdown of theory and lab credits)	1 Lab
Catalog Course Description	Introduction to Astronomy Lab will include hands-on exercises that work to reinforce concepts covered in the lecture, and may include additional components that introduce students to the night sky. Co-requisite: ASTR 1115
Student Learning Outcomes/Objectives /Competencies of the Course	<p>Student Learning Outcomes: Upon successful completion of the course:</p> <ol style="list-style-type: none"> 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.
College-Wide Student Learning Outcomes	<p>ASTR 1115L learning objectives align with the following NNMCC College Wide Goal:</p> <p><i>Critical thought: Students are required to analyze and synthesize information and draw reasoned conclusions.</i></p>