# SLO Presentation

ASTR
Date: 09-15-2022

## ISLO

### Civic Engagement

• Students will develop values and beliefs in their role as a member of local, national and global societies to promote truth, fairness and goodwill to others. They will use the democratic process to further their values and beliefs and recognize and accept differing perspectives based on cultural diversity. They will engage in actions which provide service to others and have a positive impact on their local community.

### Communication and Expression

• Students will demonstrate the ability to effectively and appropriately communicate their thoughts and ideas both in written and oral forms. They will develop verbal and non-verbal delivery skills, in an appropriate manner, to communicate their ideas as well as evaluate the ideas of others in a wide variety of contexts.

### Critical Thinking and Quantitative Reasoning

• Students will demonstrate the ability to recognize assumptions within an argument and actively and skillfully analyze underlying reasoning to develop a conclusion. They will apply qualitative and/or quantitative analysis to solve problems, predict outcomes, test hypotheses, and explore alternatives in an ethical manner.

### Information Literacy

• Students will demonstrate the ability to determine when gathering additional information is necessary. They will use appropriate resources and technologies to locate, evaluate and incorporate the information when developing supporting arguments and drawing conclusions. Students will also develop the ability to understand any legal, ethical or social issues regarding the use of information.

### Personal Knowledge and Responsibility

• Students will develop the necessary skills to define, maintain and complete their personal educational goals. They will learn to work independently to accomplish personal goals toward realizing their full potential academically, physically and emotionally whether for personal enrichment, further education or career advancement.

## Science, Engineering, and Math

ASTR

## PSLO

No PSLOs

## CSLO

### ASTR102 - Introductory Astronomy: Stars and the Universe

• Students demonstrate a non-mathematical understanding of the scientific method.

• Students demonstrate a non-mathematical understanding of ancient Greek and Renaissance astronomy.

• Students demonstrate a non-mathematical understanding of repetitive sky motions, including lunar phases.

• Students demonstrate a non-mathematical understanding of nuclear fusion and its role in the changing nature of stars.

• Students demonstrate a non-mathematical understanding of the magnetic and sunspot cycles of the Sun.

• Students demonstrate a non-mathematical understanding of the structure and evolution of galaxies.

• Students demonstrate a non-mathematical understanding of our current understanding of cosmology, including the Big Bang and the cosmic background radiation.

### ASTR103 - Introductory Astronomy: The Solar System

• Students demonstrate a non-mathematical understanding of the scientific method.

• Students demonstrate a non-mathematical understanding of the history of ancient Greek and Renaissance astronomy.

• Students demonstrate a non-mathematical understanding of repetitive sky motions, including lunar phases.

• Students demonstrate a non-mathematical understanding of the nebula hypothesis, including origins of asteroids and comets.

• Students demonstrate a non-mathematical understanding of the composition, structure, and major processes of the planets and moons.

• Students demonstrate a non-mathematical understanding of the origins and evolution of ring systems.

• Students demonstrate a non-mathematical understanding of the magnetic and sunspot cycles of the Sun.

## ASTR104 - Life in the Universe

- Students will be able to demonstrate a non-mathematical understanding of the scientific method.
- Students will be able to demonstrate a non-mathematical understanding of the history of astronomy.
- Students will be able to demonstrate a non-mathematical understanding of our current understanding of the origin and evolution of the universe and all of its varied astronomical contents (galaxies, stars, planets, etc.).
- Students will be able to demonstrate a non-mathematical understanding of the basic tenets of biology and chemistry and how they pertain to life and its origins
- Students will be able to demonstrate a non-mathematical understanding of the complex connections between astronomy, biology, geology, and chemistry as pertains to the origin and evolution of life on Earth.
- Students will be able to demonstrate a non-mathematical understanding of the possibility of habitable zones off Earth and what they require to exist as possible havens for life.
- Students will be able to demonstrate a non-mathematical understanding of the possibilities for finding and/or communicating with life off Earth.

## ASTR105L - Observational Astronomy

- Students will be able to demonstrate an understanding of the scientific method.
- Students will be able to demonstrate an understanding of the celestial sphere.
- Students will be able to demonstrate an understanding of optics.
- Students will be able to demonstrate an understanding of telescopes and telescopic viewing.
- Students will be able to demonstrate an understanding of spectroscopy and its uses.
- Students will be able to demonstrate an understanding of other topics as defined by the current lab manual.

## ASTR106 - History of Astronomy

- Students will be able to demonstrate a non-mathematical understanding of the origins of Astronomy.
- Students will be able to demonstrate a non-mathematical understanding of historical models of the cosmos.
- Students will be able to demonstrate a non-mathematical understanding of pivotal figures in the advancement of Astronomy.
- Students will be able to demonstrate a non-mathematical understanding of important controversies in the history of Astronomy.
- Students will be able to demonstrate a non-mathematical understanding of the current state of Astronomical knowledge.