



Astronomy Program Learning Outcomes:

Graduates from the Astronomy undergraduate degree program will be able to:

- *Outcome 1:* Predict and solve for the emission, propagation, and absorption of light in astronomical systems.
- *Outcome 2:* Explain how gravity describes the motion of objects, evaluating gravitational problems relating to star-formation, planetary/stellar/galaxy kinematics, and galaxy formation.
- *Outcome 3:* Distinguish the evolutionary stages of astronomical objects (planets, stars, galaxies, cosmos), and identify key observations which provide clues to the distant past and future.
- *Outcome 4:* Contrast the spatial and mass scales of objects, from atoms through galaxy clusters, and explain what physical processes govern behavior at each scale.
- *Outcome 5:* Construct an astrophysical experiment in both an observational and theoretical framework by planning and implementing key aspects of the observations or theoretical modeling, and analyzing the resulting data.
- *Outcome 6:* Set up / diagram the mathematical framework for key astrophysical problems and describe an approach to solve them while displaying proficiency in unit conversion and dimensional analysis.
- *Outcome 7:* Utilize computer programming to solve complex astrophysical problems.
- *Outcome 8:* Locate and dissect credible scientific information, including: plots, generally information, and journal articles.
- *Outcome 9:* Exhibit teamwork by working well in teams as both a participant and a leader, and exemplify a knowledge of proper ethics in their interactions with classmates, and evaluation of real-world scenarios.
- *Outcome 10:* Communicate effectively orally and in writing based on scientific reasoning and critical thinking.
- *Outcome 11:* Show proper time management skills by balancing requirements for classwork and research.