



## AST 212: Introduction to Astrophysics II

This course is a continuation of the astrophysics course sequence begun with AST 211. Course topics may include interstellar gas and dust, variable stars, composition, and kinematics of the Milky Way and other galaxies, the evolution of galaxies, the early universe, and cosmology. Prerequisite: AST 211. Three lecture hours and three laboratory hours per week. Instructional Support Fee applies. Gen. Ed. Competencies Met: Scientific Reasoning and Discovery.

### Course Student Learning Outcomes

1. Students will demonstrate their knowledge of basic facts, principles, theories, and methods of a modern physics, astronomy and mathematics, as well as their relevance to modern culture and society. 2. Students will have a fundamental understanding and awareness of stellar parameters and how they determine the stellar classification system. 3. Students will have experience with the four ordinary differential equations describing stellar structure and their boundary conditions. 4. Students will have a description of basic stellar formation and evolution from the main sequence of the Hertzsprung-T Russell diagram to a star's death. 5. Students will have an understanding of hydrostatic equilibrium, nuclear fusion, degeneracy pressure and the life of a star. 6. Students will have a basic understanding of cosmology with a focus on the Big Bang Theory. 7. Students will have a basic understanding of the roles of relativity theory and quantum mechanics as to how they inform astrophysics.

**Credits:** 4

**Program:** Astronomy