PHYS1650
Nature of the Universe

Course Outline:
Topics covered include the observational aspect of astronomy (including constellations and planets), the physics of our solar system, and our own Sun, stars and their evolution, galaxies, blackholes, and cosmology. It also provides students with a basic understanding of the relationship of astronomy to life and how our nature works on the macroscopic level. Some activity about night sky observations is arranged.

Learning Outcomes:
On successful completion of this course, students should be able to:

CLO 1 identify and describe the major objects in our Solar System and our universe (including stars and galaxies), and explain their main properties
CLO 2 use the celestial sphere model to describe the apparent trajectories of celestial objects
CLO 3 review the evolution of the world-view from the geocentric model to the heliocentric model and the discovery of the expansion of the universe on our world-view
CLO 4 apply quantitative physical laws, including Kepler's three laws of planetary motion, Newton's law of universal gravitation, Doppler shift formula and Hubble's law to calculate and solve simple astronomical problems
CLO 5 explain the evolution of stars and the evolution of the universe
CLO 6 communicate astronomical problems and solutions using appropriate astronomical terminology and good English

Study Load (Study hours):
32 hours

Assessments:
Two assignments 25%
Test 25%
Exam 50%