

<b>Phys 4103</b>	<b>ASTROPHYSICS</b>	<b>(CR3)</b>
<b>Preq.</b>	<b>Phys 3402, 3702/ ADP (Physics)</b>	

## **Objective**

*To give an introduction to theory of star formation and to understand large scale structure of the universe.*

## **Syllabus**

Astronomy as an observational science, measuring time, angle, and distance, luminosity, brightness and telescope, temperature, colour and spectral properties of stars, basic physics of stars, The interstellar medium and the birth of stars; protostars and evolution to the main sequence; star clusters, The death of stars - white dwarfs, the late evolution of massive stars, supernovae and supernova remnants Neutron stars, pulsars and black holes, Galaxies: the Milky Way galaxy, rotation curves and dark matter, other galaxies and the Hubble classification scheme, Galaxies: active galaxies, galaxy environments and large scale structure, galaxy clusters and dark matter, galaxy formation, Cosmology: Hubble's law, the Big Bang, the cosmic microwave background, Expanding Universe, Hubbles law, red shift, Big Bang and Inflation, Cosmic Microwave Background, Nucleosynthesis, Dark Matter and Dark Energy.

## **Recommended Books**

1. *An Introduction to Modern Astrophysics* by B. W. Carroll and D. A. Ostlie, (2<sup>nd</sup> Edition), Cambridge (2017)
2. *Introduction to Astrophysics: The Stars* by J. Dufay and O. Gingerich, Dover (2012)
3. *An Introduction to Stellar Astrophysics* by F. LeBlanc (1<sup>st</sup> Edition), Wiley (2010)