

DEPARTMENT OF PHYSICS

CERTIFICATE COURSE

Certificate course in Astronomy & Astrophysics

Duration 20 Hours

Lesson 1

Introduction to Astronomy-Ancient world view

Lesson 2

Solar system- Ptolemy model, Copernicus Heliocentric theory, Tycho- Brahe observation Kepler's laws of planetary motion, Galileo's observation- Newton's Gravity and solar system model

Lesson 3

Planets and Satellites: Terrestrial planets& Jovian planets, Similarities, Atmosphere of Planets, Satellites, Planet like objects.

Lesson 4

Asteroids & Comets – Kupier belt, Oort cloud, Meteor showers, meteorites, Asteroid collisions, Origin of life on earth due to comets

Lesson 5

Age and Origin of the Solar System -Discovery of the Solar System, Age of the Solar System, Clues from Meteorites, Clues from Comet

Lesson 6

Methods of Observational Astronomy -Introduction to Telescopes, Spectroscopy and Stars, Measuring Distances to Stars

Lesson 7

Stars- Energy production in stars, Evolutionary sequence- Black holes

Lesson 8

Large scale structures in Universe, Star Clusters, and Galaxies

Lesson 9

Universe- Big Bang Cosmology, Steady State Theory- Matter Creation, Cosmic Microwave background Radiation

Lesson 10

Extra Solar Planets, Extra-terrestrial life, methods for searching extra terrestrial intelligence

General

Only qualitative understanding of the subject is provided. Since this is an introductory course, no prerequisites are required. The student after finishing the course should experience an urge for furthering his or understanding this subject

Examination

Two hour examination at the end of the course