

Department of Physics
Mar Ivanios College (Autonomous)



**Certificate Course on Astronomy &
Astrophysics**
(Duration 30 Hours)

About The Course

The course will cover theoretical knowledge on Astronomy, Solar system, Planets and Satellites, Asteroids & Comets, Origin of the Solar System, Methods of Observational Astronomy, Stars, Universe, Extra Solar Planets, Extra-terrestrial life etc. with a total of 30 hours duration. Practical training on using telescopes, field visits, watching important celestial phenomenon will also be included.

What will you learn?

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

Fees and registration

Registration form can be obtained from the Head, Department of Physics, Mar Ivanios College (Autonomous)

Course Fee: Rs. 1000.00 (inclusive of taxes) Exempted for the year 2020-21

Venue: Department of Physics

Contact: Dr. Jijimon K Thomas, Associate Professor and Head, Department of Physics, Mar Ivanios College (Autonomous), Thiruvananthapuram 695015

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