

M E S ASMABI COLLEGE
DEPARTMENT OF PHYSICS
2019-20
CERTIFICATE COURSE IN
ASTRONOMY AND ASTROPHYSICS (ASP)

Course Overview

Aim

The primary aim of this program is to inculcate a scientific awareness of the subject of Astronomy among the young students and motivate them to pursue careers in Astronomy and Astrophysics.. The course includes theory classes, practical/project sessions, field trip to Astronomical Observatory, project presentations..

Syllabus

MODULE I - INTRODUCTION TO NAKED EYE ASTRONOMY

The constellations and their identification. Earth's rotation and other motions. Eclipses. Changing night sky, Interesting objects in the night sky. Contents of the Universe: A general perspective. Basics of Astronomy (Celestial coordinates, Constellations, Time, distances etc.,). Sunset and sunrise. The seasons. Twilight

MODULE II - THE STARS

Basic structure of the Sun. The coronagraph. Formation and structure of stars. Stellar energy generation. Dying stars. Nebulae and supernovae remnants. Pulsars, neutron stars and black holes

MODULE III - THE MILKY WAY GALAXY

Spiral structure of the Galaxy. The Big Bang theory. The origin and evolution of galaxies. The boundaries of the knowable. The future of the Universe. Life in the Universe . Origin of the solar system. Comets, meteors and asteroids

MODULE IV – SPACE ASTRONOMY

Effects of the Earth's atmosphere on incident electromagnetic radiation. Introduction to X-ray astronomy and related technique. Astrophotography . Space telescopes. India in space.

PRACTICAL SESSIONS

OBSERVING SUNSPOTS

NIGHT SKY WATCH

CONSTELLATION CHARTS

ECLIPSE DEMO

ASTROPHOTOGRAPHY (ALBUM)

PLANETORIUM (IN CLASS)

FIELD TRIP

WORKING OR STILL MODEL

PPT PRESENTATION - ON INDIA IN SPACE

ASTRO QUIZ

ASSIGNMENT

THE SKY – NEWS BULLETIN (NEWS BOARD)

STAR CHART – STAR WHEEL

Course Coordinator: Chithra B

Assistant Professor

Department of Physics