



W M O Arts & Science College, Muttill
DEPARTMENT OF PHYSICS

CERTIFICATE COURSE IN BASIC ASTRONOMY

Syllabus

Teacher: Biju KG

Total Hours required:37

1. Introduction to naked eye Astronomy (8)

* The constellations and their identification * Identification of some individual stars * A historical perspective and Copernican revolution * Earth's rotation and other motions * Age calculation from the movement of planets. * Eclipses * Interesting objects in the night sky * Contents of the Universe: A general perspective

2. The celestial sphere and the coordinate systems (8)

*Geometry of the sphere * Celestial sphere, Celestial equator, Ecliptic. *The alt-azimuth coordinate system *The equatorial coordinate system * Other coordinate systems. * Sunset and sunrise and Sidereal time * The seasons

3. Sun and solar system (8)

*Basic structure of the Sun *The solar constant *Solar energy for Earth * Origin of the solar system *The planets and their origins *The Moon *Solar system* Comets, meteors and asteroids

4. Formation and structure of stars , Galaxies. (8)

*Stars in formation * Interstellar medium * Stellar energy generation * Stellar structure * Dying stars * Nebulae and supernovae remnants * Pulsars, neutron stars and black holes * Milky Way, Spiral structure of the Galaxy *other types of Galaxies. *Types of galaxies – Hubble's classification.

5. Origin of the Universe. (5)

*The Big Bang theory *The Steady State theory *The primordial background radiation 6. Major Observing Facilities. * Major observing facilities in the world. * Major Facilities in India.