

K. J. SOMAIYA COLLEGE OF SCIENCE AND COMMERCE , AUTONOMOUS

Certificate Course in Astronomy

Course Details

**Department of Physics
2019-2020**

This document contains the structure of course, details of syllabus and evaluation pattern.

Course Details

- ❖ **Course type** : Certificate
- ❖ **Course Title** : Certificate Course in Astronomy
- ❖ **Preamble** : To inculcate a scientific awareness of the subject of Astronomy among the young students and to motivate them to pursue careers in Astronomy and Astrophysics.

- ❖ **Objectives of course** :
 1. To explore the composition of the universe better.
 2. To reveal the truths and dispel the myths related to the universe.
 3. To motivate Students to pursue career in Astronomy.

- ❖ **Learning Outcomes** :
 1. Learner will know the structure of the universe in broad view.
 2. Learner will have scientific awareness of Celestial phenomena.
 3. Learner will be motivated to pursue career in Astronomy.

- ❖ **Prerequisites / Eligibility Criteria** : Anyone passionate about Astronomy.

- ❖ **Intake Capacity** : 30

- ❖ **Duration** : 45 hours

- ❖ **Course Coordinator** : Ketankumar Gayakvad

- ❖ **Career opportunities:** Only after completion of Post-Graduation.

Syllabus :

UNIT-1: Components of the universe--Galaxies, Stars, Planets, Asteroids, Meteors, Comets. The Big Bang Theory, The Steady State Universe, Oscillating Universe, Hubble Law. Galaxies: Types of Galaxies-Hubble Classification, Evolution of Galaxies. Milky Way Galaxy. Constellations-Aries, Pisces, Orion, Asterism-Summer Triangle and Big Dipper (Saptarsi).

UNIT-2: Life Cycle of Star, The Sun. Planets: The Earth-Radioactive heating, Floating Crust and Continent drift, Mars, Jupiter, Saturn, Venus, Mercury, Neptune, Uranus.The Moon.

❖ Evaluation Pattern :

- (1) External Evaluation:30 marks
- (2) Report Writing on Night Sky Observation+Viva:20 marks
- (3) THEORY + Report Writing on Night Sky
Observation=30+20=50 MARKS

❖ Reference Books :

- (1) Astronomy Structure of the universe. A.E.Roy and D.Clarke, Adam Hilger Pub.
- (2) Structure of the Universe, J.V.Narlikar
- (3) Text book of Astronomy and Astrophysics with elements of Cosmology, V.B.Bhatia,Narosa Pub.
- (4) Star,Life,Death and Beyond, A.K.Kimbhavi and Jayant Narlikar
- (5) Fundamentals and frontiers of Astronomy-Jastrow and Thomson
- (6) Introductory Astronomy and Astrophysics-Zeilik and Greogary
- (7) An introduction to Stellar Structure,S.Chandrashekhar
- (8) Our Solar System,A.W.Joshi,N.Rana

- (9) Source book on Space Science, Samuel Galsto
- (10) "Astrophysics: A modern perspective"-K.S.Krishnaswami New Age International.
- (11) K.S. Krishnaswami, 'Understanding Cosmic Panorama', New Age International.
- (12) University Astronomy-J.M.Paschoff and M.L.Kutner
- (13) Astronomy:Principles and Practice- A.E.Roy and D.Clarke,
- (14) Universe-William J Kaufmann,III