

Shri Govind Guru University
BSC Semester - 1 Value Added Course (NEP-2020)
BSC23VA101 Indian Astronomy

Unit 1 : Importance and relevance of the subject

Rediscovery of ancient Indian astronomy and related issues and debates; basics of positional astronomy – the solar system and the markers in the sky, sun, planets and the moon, important terminologies, features and the coordinate systems, precision of the equinox and its effects, eclipses, comets and meteors.

Unit 2 : Pre Siddhaantic astronomy

Pre Vedic, Vedic and Vedaanga periods; 5 year Yuga system; ayanas; months; tithis and seasons; time units; sun and moon's motion; nakshatra system; Vedaanga Jyotish.

Unit 3 : Siddhaantic astronomy; important siddhaantic astronomers

Aryabhata I, Varahamihira, Brahmagupta, Bhaskar and others; interaction with Greek astronomy – 7 day week system and the Zodiacal signs; Yuga, Mahayuga and Kalpa system and epochs; determination of ahargana, tithi and nakshatra; mean motion of the sun, moon and planets; corrections to find out true positions; ayanachalana and zero-precision year; alphabetical representation of numbers and Katapayaadi system.

References:

1. "Astronomy", Vol I Part 2 of "History of Science in India", by Amitabha Ghosh, The National Academy of Sciences India and Rama Krishna Mission Institute of Culture, GolPark, Kolkata, 2014 2.
2. "Indian Astronomy-An Introduction" by S. Balachandra Rao, Universities Press, 2000
3. "Bharatiya Jyotish Sastra" by Shankar Balakrishna Dixit (Eng Translation), India Meteorological Department, New Delhi, 1968