

Punyashlok Ahilyadevi Holkar Solapur University, Solapur



Name of the Faculty: Science & Technology

(As per New Education Policy 2020)

Syllabus: I.K.S.

Name of the Course: B.Sc. I (Sem. II)

(Syllabus to be implemented from June 2024)

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

Introduction to IKS in Science

Theory Periods: 30 Hours
Course Credit :2 Credits

Marks:50 Marks

Course Outcomes: Upon completion of this course students will be able

1. Understanding Indian Philosophical Systems and Knowledge Development
2. Analyzing Indian Contributions to Science, Astronomy, and Mathematics
3. Exploring Traditional Indian Approaches to Life, Health, and Environment

Unit I: Bhāratīya Civilization and Development of Knowledge System (10 Hours):

- Indian Knowledge Systems (IKS): Foundational concepts and characteristics of Indian philosophical and scientific traditions.
- Significance of Ancient Knowledge: Understand the need of ancient knowledge and its role in shaping modern civilization.
- Indian Philosophical Systems: Development and distinctive features of both Vedic and non-Vedic philosophical systems, analyzing their historical and cultural contexts.
- Ancient Educational Institutions: Takṣaśilā and Nālandā, and notable alumni who contributed to the spread of knowledge.

Unit II: Science and Mathematics (10 Hours)

- Physics: Indian concepts related to the atom, laws of motion, electricity, magnetism, and the mystery of light.
- Chemistry: Indian innovations in daily-life chemistry, including dyes, paints, cements, glass, pottery, and metallurgy.
- Mathematics: Indian origin of foundational mathematical and statistical concepts, such as the concept of zero, pi, the decimal number system and Probability. Bodhayana Sutra and Vedic Mathematics, emphasizing their influence on mathematical thinking.

Unit III: Life, Environment, and Health (10 Hours)

- Approaches to Life and Health: Traditional Indian perspectives on life sciences, including plant science, anatomy and physiology, and agriculture.
- Environmental Awareness: India's traditional emphasis on ecology and environmental sustainability. Ancient practices that promote environmental stewardship.

Text books:

1. IKS: The Knowledge System of Bhārata by Bhag Chand Chauhan
2. INTRODUCTION TO INDIAN KNOWLEDGE SYSTEM: CONCEPTS AND APPLICATIONS by B. MAHADEVAN
3. History of Science in India Volume-1, Part-I, Part-II, Volume VIII, by Sibaji Raha, et al. National Academy of Sciences, India and The Ramkrishna Mission Institute of Culture, Kolkata (2014).