



SIES

RISE WITH EDUCATION

NAAC REACCREDITED - 'A' GRADE

College of Arts,
Science &
Commerce (Autonomous)

Faculty: Science

Programme: B.Sc.

Course: Indian Knowledge System (IKS)

Academic Year: 2023-2024

FYBSc

Choice Based Credit System and
Learning Outcome Based System
under NEP 2020

Class	Semester	Course Code	Course Name	No. of hours	Credits	Marks
FYBSc	I	SIUSSIK111	Indian Knowledge System (IKS)	30	2	20+30=50

Learning Objectives -

- Gain an understanding of Indian Knowledge System.
- Understand the development of Science and Technology in areas such as Astronomy, Mathematics, Surgical techniques, Metallurgy, Ancient Indian Architecture.

Learning Outcomes -

1. Explain the key concepts of IKS and discuss the multi-faceted nature of knowledge contained in the Traditional Systems of India.
2. Identify the basic elements of Indian Calendar, development of Mathematics, Science and Technology in India.
3. Recognize the historical perspective to architecture in ancient India .

Module 1 IKS an Overview

(15 Hours)

- 1.1 Definition, Importance, Classification and Unique aspects of IKS
- 1.2 Introduction to Vedas and Vedic life: Distinctive Features, Veda, Vedanga, Upanishad
- 1.3 Wisdom through Ages: Puranas, Itihasa, Epics and Subhashitas
- 1.4 Indian Philosophical systems: Its Development and Distinctive Features.
- 1.5 Historical Development of Astronomy in India, Elements of Indian Calendar, Case study of Jantar Mantar.

Module 2 Science and Technology in Ancient India

(15 Hours)

- 2.1 Ancient Indian Mathematics: Unique aspects, Great Mathematicians and their contribution, Sulba-sutras, Baudhayana formula for right angle triangle.
- 2.2 Number system-Features, Concept of zero, representation of large numbers, place value of numerals, Bhuta sankya system.
- 2.3 Indian Science and Technology heritage, Mining and ore extraction, Metals and Metal work technology, Gold extraction Process.
- 2.4 Ancient Indian Architecture, Temples- Khajuraho temples, Irrigation and water management, surgical techniques, ship buildings.
- 2.5 Plants in Vedas, Morphology, Plant Taxonomy & Nomenclature, Classification of Plants, Plant anatomy, Plant Physiology, Nourishment, Plant Pathology, Consciousness in Plants, Germination, Reproduction, Sex and Heredity, medicinal botany.

References:

Kapoor, Kapil, and Singh Avadesh Kumar, *Indian Knowledge System Vol.1*, DK Print World, Ltd., 2005.

Mahadevan B., Bhat V R, Nagendra Pavana R.N., *Indian Knowledge System Concepts and Application*, PHI Learning Pvt. Ltd., 2022.

Penna, Madhusudan. *Sanskrit Vagvilas* 2nd Edition , Kavikulguru Kalidas Sanskrit International University Press. 2013

Chowdhury, K. A. 1971. *Botany: Prehistoric Period: A Concise History of Science in India (Eds.)* D. M. Bose, S. N. Sen and B.V. Subbarayappa. New Delhi: Indian National Science Academy.

Evaluation Pattern

The following question paper pattern for FYBSc COURSE title Indian Knowledge System (IKS) (Semester I) to be brought into effect from the academic year (2023-2024)

Internal Assessment 20 marks – Test/ Individual/Group Project and Presentation/ Participation in Lectures and Seminars, Webinars/Book review/ Symposium/ Panel Discussion / Field Visit/ Report Writing.

Semester End Exam Evaluation [30 marks]

1. There shall be Three compulsory questions
2. Questions shall correspond to the three units (with internal choice)

Q.1. Module 1 – a or b	10
Q.2. Module 2 – a or b	10
Q.3. Write Short notes – any two	10