



Department of Sanskrit
University of Delhi
Under Graduate Course for Sanskrit
B.A. Honours & Programme Under UGCF-22

DSE 4: Indian Scientific Heritage

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Pre-requisite of the course	Department Offering the Course
		Lecture	Tutorial	Practical/ Practice		
Indian Scientific Heritage	04	3	1	0	Semester IV	Sanskrit

Learning Objectives

The ancient Sanskrit Literature contains various marvellous concepts of Science and Technology. India's scientific heritage is an area of growing interest and opportunities. This course aims at acquainting scholars with some of its aspects and developing mind towards our scientific heritage.

Learning Outcomes

- The students will be able to exhibit their understanding of Indian scientific Heritage and Indian Knowledge system.
- they will get acquainted with some aspects of Indian scientific Heritage.

Detailed Syllabus

Unit I : Water Management System in Ancient India

Water management in Indus Valley civilization
 Eleven types of Water in Yajurveda (Yajurveda 22.25)
 Role of flora and fauna in recharging of underground water,
 Methods of water purification (Brihatsamhita, 54. 121-122, Vriksaayurveda, 2.36-38)

Unit II : Climatology in Sanskrit Literature

History of Climatology in Ancient India
 Climatology in Sanskrit Literature
 Meteorology in Vedic Period (Rigveda, 1.19.7, 1.37.11, 1.164.47, 5.62.1, 5.63.1-7)

Unit III : Ancient Indian Calendar Systems

Division of Time in Vedic Literature – Day, Month, Season, Year, (Rigveda, 1.25.8, 1.64.11, Tattiriya Samhita, 1.4.14, 4.4.11)
 Concept of Ritu and samvatsara in Brahmana text (Tattiriya Brahmana 3.10.4, Satapatha Brahmana 1.6.3)



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Calculation of Yuga, Ayana, Tithi and Nakshatra in Vedanga Jyotisha (Yajusha Jyotisha, verses 5,9,19-20)

Unit IV: Vedic Mathematics

Concept and praise of Mathematics in Vedic Literature (Chandogyopanishad, 7.1.2, 7.1.4; Vedanga Jyotish (Yajusha Jyotisha 4)

Numerical words in Samhita Texts (Rigveda , 1.164.2, 1.164.10-15)

Concept of Zero (Rigveda, 4.11.2, 5.32.1, 8.91.7, Brihadaranyakopnishad, 5.1.1, Chandogyopanishad, 4.10.5), Decimal system (Rigveda,10.94.7), Numbers in vedas (Yajurveda, 17.2)

Development of Geometry in Sulbha period (Sulbhasutra, 1.37)

Essential readings:

- Rgveda samhita (6 Vols)- (Eng. Tr.) H.H. Wilson, Bangalore, 1946
- यजुर्वेद- हिन्दी अनुवाद सहित, सातवलेकर, श्रीपाद दामोदर, पारडी
- Vedanga Jyotisha of Lagadha ; K.V. Sharma, Indian National Science Academy, New Delhi 1985, pp 11-16
- बृहत्संहिता- बराहमिहिर विरचित, हिन्दी अनुवाद- बलदेव प्रसाद मिश्र, खेमराज श्रीकृष्णदास प्रकाशन, मुम्बई
- B. Mahadevan, Vinayak Rajat Bhat, Nagendra Pavana R.N., Introduction to Indian Knowledge System: Concepts and Applications, PHI Learning Private Ltd. Delhi. (2022)
- The Essential of Vedic Mathematics, Rajesh Kumar Thakur, Rupa Publications, New Delhi

Recommended readings:

1. भारतीय कैलेंडर की विकास यात्रा गुणाकर मुले (Abhivyakti website blog 2008, www.Abhivyakti-hindi.org/smibandh/2008)
2. भारतीय काल गणना में नूतन संवत्सरारम्भ; देवी प्रसाद त्रिपाठी (website blog)
3. Origin and Development of Indian Calendrical science, Indian studies Past and Present, Calcutta, 1975, pp. 1-18; A.K. Chakravorthy

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time