

MHS26102- Indian Knowledge System

Teaching Scheme: Theory: 2 Hours/Week	Credits: 02	Examination Scheme: In-Semester Exam: 30 Marks CAA: 20 Marks Total: 50 Marks
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Course Objectives:

1. To create awareness about the history and rich cultural heritage of Bharata.
2. To introduce the principles of Vedic mathematics for faster calculations.
3. To explore the contributions of traditional Bharatiya knowledge in science and astronomy.
4. To understand the contributions of traditional Bharatiya knowledge in engineering and technology.

Course Outcomes: Students will be able to

1. Understand the antiquity of Bharatiya civilization, traditional knowledge systems, ancient education institutions, and contributions to life sciences, healthcare, and philosophy.
2. Apply the principles of Vedic mathematics for efficient problem-solving in arithmetic, algebra, geometry To explore the contributions of traditional Bharatiya knowledge in science and astronomy.
3. Analyze the scientific and astronomical advancements of ancient Bharata, including concepts of matter, gravity, aeronautics, and cosmology, and their relevance to modern science.
4. Explore the engineering, technological, and architectural innovations of ancient Bharata,

Course Syllabus

UNIT -I: Indian Civilization and Development, Philosophy: (7 hours)

Geological formation of land, Early History of civilization, the Saraswati-Sindhu Civilization, Traditional Knowledge System, The Vedas, Upanishadas, Vedanga, Aranyakas, Main Schools of Philosophy, Gurukul Parampara, the Takṣaśīla University, the Nālandā University., Agriculture, Ecology and Environment, Sushrut Samhita, Charak Samhita , Integrated Approach to Healthcare, Medicine, Microbiology, Surgery, and Yoga. Life and work of Rishi's, Brahmadini. Vedangas Information " Shiksha ,Kalpa, Vyakaran, Nirukta , Chandas, Jyotish" .

UNIT-II: Advanced technique in Vedic Mathematics: (7 hours)

The Great Indian Mathematicians, Introduction to sutras, and sub sutras. Methods for squaring and square roots, cube and cube roots, factorization. Differentiation and Integration methods. Easy Solution of linear equations, quadratic equations, high-Speed Matrix, Algebra. Vedic Geometry: Different forms of straight lines, The Triangle, The Cyclic Quadrilateral, Squares, and the Circle, Geometrical constructions (such as Altars), Transformation of simple shapes, Kalpa Sutras, Srauta Sutras and Sulbha Sutras.

UNIT-III: Ancient Astronomy and Science:**(7 hours)**

Concepts of Samkhya and Universe, Gravity, Sage Agastya's Innovation in Electricity , Ancient Physics: Big Bang Theory , Vimāna: Aeronautics (Sundar Vimana,Rukma Vimana,Tripur Vimana Vedic Cosmology and Modern Concepts, Bhāratīya Kāla-gaṇanā, History and Culture of Astronomy, Sun, Earth, Moon, and Eclipses, Earth is Spherical and Rotation of Earth, Archeoastronomy,Raja Bhoja Robotics And Automation.

UNIT-IV: Engineering Technology and Architecture of Ancient India:**(7 hours)**

Ancient Rasayanshastra: Laboratory and Apparatus, Juices, Dyes, Paints and Cements, Glass and pottery, Metallurgy, Engineering Science and Technology in the Vedic Age and Post-Vedic Records, Iron Pillar of Delhi, Rakhigarhi, Mehrgarh, Sindhu Valley Civilization, Marine Technology, and Bet-Dwārka. Vastu Shastra,Architecture the Root of Civilization and Art work of Bharatiya Knowledge Metals and Metalworking: 1. The rise and fall of a great Indian technology 2. Mining and ore extraction 3. Zinc extraction 4. Copper and it's alloys 5. Iron and steel in ancient India 6. Lost wax casting of idols and artefacts 7. Apparatuses used for extraction of metallic components Engineering and Technology, Town Planning and Architecture: 1. Perspective of Arthaśāstra on town planning 2. Vedic Vāstu-śāstra – The science of architecture 3. Eight limbs of Vāstu 4. Town planning 5. Temples in India: Marvellous stone architecture for eternity 6. Temple architecture in India 7. Iconography Knowledge Framework and classifications.

Textbooks:

1. Textbook on The Knowledge System of Bharata by Bhag Chand Chauhan,
2. Engineering and Technology in Ancient India by Ravi Prakash Arya
3. History of Science in India Volume-1, Part-1, Part-II, Volume VIII, by Sibaji Raha, et al. National Academy of Sciences, India and The Ramakrishna Mission Institute of Culture, Kolkata (2014).
4. Science and Technology in Ancient Indian Texts by Bal Ram Singh, Nath Girish. Umesh Kumar Singh
5. Vedic Mathematics, Swami Bharati Krishna Trithaji, Motilal Banarsidass, New Delhi.

Reference Books:

1. Pride of India- A Glimpse of India's Scientific Heritage edited by Pradeep Kohle et al. Samskrit Bharati (2006).
2. Vedic Physics by Keshav Dev Verma, Motilal Banarsidass Publishers (2012).
3. India's Glorious Scientific Tradition by Suresh Soni, Ocean Books Pvt. Ltd. (2010).
4. Modern Introduction to Ancient Indian Mathematics, T S Bhanumurthy, Wiley Eastern Limited, New Delhi
5. Rigvedadi Bhashya Bhumika: Swami Dayananda Saraswati publisher Arya samaj, Vedic Mission West Midlands.

Course Activity: Test, Poster Presentation, Model Making


Course Coordinator




11/06/26
Dean Academics


Principal
Vidya Pratishthan's
Kantilalnan Bajaj Institute of
Engineering & Technology, Baramati
Vidyansagari, Baramati-413133