

FACULTY OF ENGINEERING & TECHNOLOGY

Effective from Academic Batch: 2025-26

Programme: Bachelor of Technology (Computer Science and Engineering (IoT))

Semester: III

Course Code: 102003410

Course Title: Introduction to Indian Knowledge Systems

Course Group: Humanities and Social Science

Course Objectives: This introductory course provides undergraduate students with a structured, interdisciplinary framework to explore the Indian Knowledge System (IKS). Utilizing a progressive, inquiry-based curriculum, the course establishes the definitions and unique aspects of IKS before examining its foundational scriptures—including the Vedas, Puranas, and major Epics—as repositories of worldly wisdom.

A central focus is placed on historical advancements in Science, Engineering, and Technology, tracing the trajectories of Indian mathematics, astronomy, and native technological life cycles. The syllabus further bridges traditional heritage with contemporary life through modules on the humanities, focusing on the Yoga way of life and multidimensional consciousness for modern wellness.

Finally, students will analyze ancient paradigms of Governance, Public Administration, and Judiciary Systems. By studying classic texts like Kautilya's Arthashastra, the course explores historical statecraft, economic structures, foreign policy, and legal frameworks. Ultimately, this course prepares students to adapt time-tested, nature-centric Indian tenets into modern technological development, public administration, and sustainable living frameworks.

Teaching & Examination Scheme:

Contact hours per week			Course Credits	Examination Marks (Maximum / Passing)				
Lecture	Tutorial	Practical		Theory		J/V/P*		Total
				Internal	External	Internal	External	
2	0	0	2	25 / 9	25/9	NA	NA	50/18

* J: Jury; V: Viva; P: Practical



Detailed Syllabus:

Sr.	Contents	Hours
-	Course Introduction	01
1	Indian Knowledge Systems (IKS) – An Introduction: What is IKS? Why do we need IKS? Organization and history of IKS, Salient aspects of IKS.	02
2	The Scriptures of IKS: Introduction to Vedas, A synopsis of four Vedas, Messages of Vedas, Vedic Life: A Distinctive feature, Puranas, The Ramayana and The Mahabharata – Key Issues, Messages and Source book for Worldly Wisdom.	04
3	Science, Engineering and Technology in IKS: Mathematics: Number systems in India - Historical evidence, Salient aspects of Indian Mathematics, Measurements for time, distance, and weight, Indian Mathematicians and their Contributions, Algebra, Geometry, Trigonometry, Binary mathematics and combinatorial problems, Magic squares in India. Engineering and Technology: Wootz Steel: The rise and fall of a great Indian technology, The Indian S & T heritage Mining and ore extraction, Metals and metalworking technology, Iron and steel in India, Lost wax casting of idols and artefacts, Apparatuses used for extraction of metallic components, Irrigation systems and practices in South India, Literary sources for science and technology, Physical structures in India, Dyes and painting technology, The art of making perfumes, Surgical techniques, Shipbuilding.	10
4	Town Planning and Architecture: Perspective of Arthasastra on town planning, Vastu-sastra – The science of architecture, Eight limbs of Vastu, Town planning, Temples in India: Marvelous stone architecture for eternity, Temple architecture in India, Iconography.	04
5	Humanities and Social Sciences in I K S: Unique Aspects of Indian Astronomy: Introduction to Indian astronomy, Indian contributions in astronomy, The celestial coordinate system, Elements of the Indian calendar, Notion of years and months. Health Wellness and Psychology: Yoga Way of Life – Relevance to Health and Wellness, Distinguish thought on Health and wellness in Indian system, Ayurveda: approach to health, Tri-doṣas, Role of agni in health, Psychological aspects of health, Disease management elements, Dinacharya: daily regimen for health & wellness, Importance of sleep, Food intake methods and drugs, Approach to lead a healthy life, Indian approach to psychology, Consciousness – The True Nature of an Individual, Five Layered Consciousness of an Individual.	05
6	Governance, Public Administration and Judiciary Systems: Dos and Don'ts of a King in the Epics, Arthasastra – Governance and Administration, The Kautilyan State – The King, The Amatya, Settlements and Land Use, Treasury and State Economy, Law, Order and Security (Danda), Foreign Policy and Allies (Mitra), Public Administration – Perspectives from the Epics.	04
Total		30

Reference Books:

1	Mahadevan, B., Bhat Vinayak Rajat, Nagendra Pavana R.N. (2022), "Introduction to Indian Knowledge System: Concepts and Applications", PHI Learning Private Ltd. Delhi.
2	Pride of India: A Glimpse into India's Scientific Heritage, Samskrita Bharati, New Delhi.
3	Bag, A.K. (1979). Mathematics in Ancient and Medieval India, Chaukhamba Orientalia, New Delhi.
4	Kapoor Kapil, Singh Avadhesh (2021). "Indian Knowledge Systems Vol – I & II", Indian Institute of Advanced Study, Shimla, H.P.

Supplementary learning Material:

1	https://nptel.ac.in/courses/101104065
2	https://onlinecourses.swayam2.ac.in/e-learning/preview/imb24_mg78
3	https://onlinecourses.swayam2.ac.in/e-learning/preview/ntr26_ed18
4	https://nptel.ac.in/courses/101104065

Pedagogy:

- Direct classroom teaching
- Audio Visual presentations/demonstrations
- Assignments/Quiz
- Continuous assessment
- Interactive methods

Internal Evaluation: The internal evaluation comprised of written exam (50% weightage) along with combination of various components such as certification courses such as ELT, Assignments, Model making, Case study, Group activity, Poster Presentation, Unit test/Quiz, Class Participation, Attendance etc. where individual component weightage should not exceed 20%.

Suggested Specification table with Marks (Theory) (Revised Bloom's Taxonomy):

Distribution of Theory Marks in %						R: Remembering; U: Understanding; A: Applying. N: Analyzing; E: Evaluating; C: Creating
R	U	A	N	E	C	
20%	30%	30%	15%	5%	-	

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Student Learning Outcomes (SLOs):

Sr. No.	Course Outcome Statements	%weightage
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CVM
UNIVERSITY

Aegis: Charutar Vidya Mandal (Estd.1945)

SLO-1	Explain the concept, evolution, organization, and significance of Indian Knowledge Systems (IKS) and their relevance in contemporary society.	10%
SLO-2	Describe the major knowledge sources of India, including the Vedas, Puranas, Ramayana, and Mahabharata, and interpret their key messages and contributions to human values.	15%
SLO-3	Analyze the contributions of Indian Knowledge Systems to mathematics, science, engineering, and technology, and evaluate their relevance to modern technological advancements.	35%
SLO-4	Explain the principles of Indian town planning, architecture, and Vastu-sastra, and assess their application in sustainable infrastructure development.	15%
SLO-5	Examine Indian contributions in astronomy, health, wellness, psychology, yoga, and Ayurveda, and relate them to holistic human development and well-being.	15%
SLO-6	Discuss the principles of governance, public administration, judiciary, and statecraft described in Indian epics and Arthasastra, and evaluate their relevance to modern administrative systems.	10%

Curriculum Revision:	
Version:	3.0
Drafted on (Month-Year):	March-2026
Last Reviewed on (Month-Year):	
Next Review on (Month-Year):	April-2029