

**Indian Knowledge System : 7 sem**

Unit No	Contents	Sub Topics	Video links
		IKS_Engineering _INTRO IKS_CH01_C02 : <b>Why do we need IKS</b> IKS_CH01_C03 : <b>IKS in Action</b> IKS_CH01_C06 : <b>Salient Aspects of IKS</b> Discover IKS : <b>Indian Knowledge Systems: IIT Alumni Event, Washington DC #1</b>	<a href="https://www.youtube.com/watch?v=mjtJDIOZ-h8&amp;t=21s">https://www.youtube.com/watch?v=mjtJDIOZ-h8&amp;t=21s</a> <a href="https://www.youtube.com/watch?v=Drsl1veFJag&amp;t=206s">https://www.youtube.com/watch?v=Drsl1veFJag&amp;t=206s</a> <a href="https://www.youtube.com/watch?v=2MaTbV_18uM&amp;t=320s">https://www.youtube.com/watch?v=2MaTbV_18uM&amp;t=320s</a> <a href="https://www.youtube.com/watch?v=Vwm43welg64">https://www.youtube.com/watch?v=Vwm43welg64</a>  <a href="https://www.youtube.com/watch?v=MKbLFvDd4xo&amp;t=5s">https://www.youtube.com/watch?v=MKbLFvDd4xo&amp;t=5s</a> <a href="https://www.youtube.com/watch?v=D-Wdsw0vSVc&amp;t=1s">https://www.youtube.com/watch?v=D-Wdsw0vSVc&amp;t=1s</a> <a href="https://www.youtube.com/watch?v=2WYZtS_LLog">https://www.youtube.com/watch?v=2WYZtS_LLog</a>
1	<b>Introduction of Indian Knowledge Systems (IKS):</b> Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. <b>The IKS Corpus, Vedic Corpus,</b> Indian Philosophical Systems.	IKS_CH01_C05 : <b>Historicity of IKS</b>	<a href="https://www.youtube.com/watch?v=MKbLFvDd4xo&amp;t=5s">https://www.youtube.com/watch?v=MKbLFvDd4xo&amp;t=5s</a>
		IKS_CH01_C04 : <b>The IKS Corpus- A Classification Framework</b>	<a href="https://www.youtube.com/watch?v=Vwm43welg64">https://www.youtube.com/watch?v=Vwm43welg64</a>
2	<b>Foundational Concepts of Mathematics and Science &amp; Technology:</b> Linguistics; Pāṇini's work on Sanskrit Grammar, Phonetics, Ashtadhyayi's vyakarana. Number System and Units of Measurement: concept of zero, Piṅgala and the Binary system.  <b>Knowledge:</b> Framework & Classifications:  <div style="text-align: right;"> <b>Prameya,</b>   <b>Pramana,</b>   <b>Samsaya.</b> </div>		
		Mod-01 Lec-4 Panini's Astadhyayi	<a href="https://www.youtube.com/watch?v=qZsdAXF9DTE">https://www.youtube.com/watch?v=qZsdAXF9DTE</a>
		IKS_CH08_C07 : <b>Binary mathematics and combinatorial problems in Chandaḥ Śāstra</b>	<a href="https://www.youtube.com/watch?v=s_RbFa9Z0y0">https://www.youtube.com/watch?v=s_RbFa9Z0y0</a>
		IKS_CH07_C01 : <b>Indian scheme of knowledge</b> IKS_CH07_C02 : <b>The knowledge triangle</b> IKS_CH07_C03 : <b>Prameya – A vaiśeṣikan approach to physical reality</b> IKS_CH07_C07 : <b>Pramāṇa – the means of valid knowledge</b>	<a href="https://www.youtube.com/watch?v=n0OQgqDmumg&amp;t=447s">https://www.youtube.com/watch?v=n0OQgqDmumg&amp;t=447s</a> <a href="https://www.youtube.com/watch?v=N05kLLpg-AI">https://www.youtube.com/watch?v=N05kLLpg-AI</a>

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		<p>IKS_CH07_C06 : <b>Sāmānya, viśēṣa, samavāya</b></p> <p>IKS_CH07_C08 : <b>Samśaya – ambiguities in existing knowledge</b></p> <p>IKS_CH07_C09 : <b>Framework for establishing valid knowledge</b></p> <p>IKS_CH07_C13 : <b>Summary of the chapter</b></p>	<p><a href="https://www.youtube.com/watch?v=f_Tq8TCDTgo">https://www.youtube.com/watch?v=f_Tq8TCDTgo</a></p> <p><a href="https://www.youtube.com/watch?v=x5CZXEWC0yE">https://www.youtube.com/watch?v=x5CZXEWC0yE</a></p> <p><a href="https://www.youtube.com/watch?v=gWkt9mz270s">https://www.youtube.com/watch?v=gWkt9mz270s</a></p> <p><a href="https://www.youtube.com/watch?v=0T8P2j9-sM0&amp;t=5s">https://www.youtube.com/watch?v=0T8P2j9-sM0&amp;t=5s</a></p>
		<p>IKS_CH07_C04 : <b>Dravyas – the constituents of the physical reality</b></p> <p>IKS_CH07_C05 : <b>Attributes – the properties of substances and Action – the driver of conjunction and disjunction</b></p> <p>IKS_CH07_C10 : <b>Deductive or inductive logic framework</b></p> <p>IKS_CH07_C11 : <b>Potential fallacies in the reasoning process</b></p> <p>IKS_CH07_C12 : <b>Siddhānta: established tenets in a field of study</b></p>	<p><a href="https://www.youtube.com/watch?v=K-YhEdIPHuM">https://www.youtube.com/watch?v=K-YhEdIPHuM</a></p> <p><a href="https://www.youtube.com/watch?v=55P_9yKzXlo">https://www.youtube.com/watch?v=55P_9yKzXlo</a></p> <p><a href="https://www.youtube.com/watch?v=KnQXok1SPuA">https://www.youtube.com/watch?v=KnQXok1SPuA</a></p> <p><a href="https://www.youtube.com/watch?v=DtQV53ZHf-U">https://www.youtube.com/watch?v=DtQV53ZHf-U</a></p> <p><a href="https://www.youtube.com/watch?v=ii9iodV7a-w&amp;t=1s">https://www.youtube.com/watch?v=ii9iodV7a-w&amp;t=1s</a></p>
3	<p><b>Science, Engineering &amp; Technology in IKS:</b> Mathematics; Arithmetic, <b>geometry,</b>  <b>trigonometry</b>  and algebra, Chanda Sastra of Pingala.</p> <p><b>Astronomy: Elements of the Indian Calendar, Āryabhaṭīya and the Siddhāntic Tradition, Panchanga,</b></p>	<p>IKS_CH08_C05 : <b>Geometry</b></p> <p>IKS_CH08_C06 : <b>Trigonometry</b></p> <p>IKS_CH09_C01 : <b>Introduction to Indian astronomy</b></p> <p>IKS_CH09_C02 : <b>Indian contributions in astronomy</b></p> <p>IKS_CH09_C03 : <b>The celestial coordinate system</b></p> <p>IKS_CH09_C04 : <b>Elements of the Indian calendar</b></p> <p>IKS_CH09_C05 : <b>Notion of years and months</b></p> <p>IKS_CH09_C06 : <b>Pañcāṅga – The Indian calendar system</b></p>	<p><a href="https://www.youtube.com/watch?v=py-m1BLthy4">https://www.youtube.com/watch?v=py-m1BLthy4</a></p> <p><a href="https://www.youtube.com/watch?v=hcsWFycLOrc">https://www.youtube.com/watch?v=hcsWFycLOrc</a></p> <p><a href="https://www.youtube.com/watch?v=B8jblvZsl_M">https://www.youtube.com/watch?v=B8jblvZsl_M</a></p> <p><a href="https://www.youtube.com/watch?v=KgTS5gbYM60">https://www.youtube.com/watch?v=KgTS5gbYM60</a></p> <p><a href="https://www.youtube.com/watch?v=IFtkoQ4OWNU&amp;t=4s">https://www.youtube.com/watch?v=IFtkoQ4OWNU&amp;t=4s</a></p> <p><a href="https://www.youtube.com/watch?v=X2gsGVp_F6g&amp;t=1s">https://www.youtube.com/watch?v=X2gsGVp_F6g&amp;t=1s</a></p> <p><a href="https://www.youtube.com/watch?v=zU0TtBgKozQ&amp;t=3s">https://www.youtube.com/watch?v=zU0TtBgKozQ&amp;t=3s</a></p> <p><a href="https://www.youtube.com/watch?v=dqvEyopkuxk&amp;t=2s">https://www.youtube.com/watch?v=dqvEyopkuxk&amp;t=2s</a></p> <p><a href="https://www.youtube.com/watch?v=OlUGRsheDtw&amp;t=1s">https://www.youtube.com/watch?v=OlUGRsheDtw&amp;t=1s</a></p>

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	<p><b>Astronomical Instruments (Yantras) and Jyotish.</b> Engineering &amp; Technology: Metals &amp; Metal Working; Wootz Steel,</p>	<p>IKS_CH09_C07 : <b>Astronomical Instruments (Yantras)</b>            IKS_CH09_C08 : <b>Jantar Mantar of Rājā Jai Singh Sawai</b>  <b>DISCOVER IKS ACTIVITIES :</b> Conversation with Prof RN Iyengar : Ancient indian astronomy and engineering (Recorded July 2017)</p>	<p><a href="https://www.youtube.com/watch?v=I3JyINVTun8">https://www.youtube.com/watch?v=I3JyINVTun8</a>   <a href="https://www.youtube.com/watch?v=UeaXs1O9qGw">https://www.youtube.com/watch?v=UeaXs1O9qGw</a></p>
	<p><b>Iron and Steel in India,</b> Metals and Metal working Technology,   <b>Lost-wax casting of idols and artefacts,</b></p>	<p>IKS_CH10_C01 : <b>The rise and fall of a great Indian technology</b>            IKS_CH10_C02 : <b>Mining and ore extraction</b>            IKS_CH10_C03 : <b>Zinc Extraction</b>            IKS_CH10_C04 : <b>Copper and its alloys</b>            IKS_CH10_C05 : <b>Iron and steel in India</b>            IKS_CH10_C06 : <b>Lost wax casting of idols and artefacts</b>            IKS_CH10_C07 : <b>Apparatuses used for extraction of metallic components</b>  <b>DISCOVER IKS ACTIVITIES :</b> Ancient India's Contributions to the World (Full Documentary)</p>	<p><a href="https://www.youtube.com/watch?v=r5yN0lWJHBw">https://www.youtube.com/watch?v=r5yN0lWJHBw</a>   <a href="https://www.youtube.com/watch?v=Y38mh2ArHrA&amp;t=2s">https://www.youtube.com/watch?v=Y38mh2ArHrA&amp;t=2s</a>  <a href="https://www.youtube.com/watch?v=1bwYf8Y0Zag&amp;t=1s">https://www.youtube.com/watch?v=1bwYf8Y0Zag&amp;t=1s</a>  <a href="https://www.youtube.com/watch?v=eX3j7qV5WSw">https://www.youtube.com/watch?v=eX3j7qV5WSw</a>  <a href="https://www.youtube.com/watch?v=xqrwZlpUbWU">https://www.youtube.com/watch?v=xqrwZlpUbWU</a>  <a href="https://www.youtube.com/watch?v=5EPwREihhCU">https://www.youtube.com/watch?v=5EPwREihhCU</a>   <a href="https://www.youtube.com/watch?v=v5Bn-Ju_aJE">https://www.youtube.com/watch?v=v5Bn-Ju_aJE</a>  <a href="https://www.youtube.com/watch?v=QxgK0dX872k">https://www.youtube.com/watch?v=QxgK0dX872k</a></p>
	<p><b>Dyes and Painting Technology, The art of making perfumes.</b></p>	<p>IKS_CH11_C06 : <b>Dyes Painting and Perfumes</b></p>	<p><a href="https://www.youtube.com/watch?v=LV_lwEM_ZxY">https://www.youtube.com/watch?v=LV_lwEM_ZxY</a></p>
4	<p><b>Humanities &amp; Social Sciences in IKS:</b>  <b>Yoga and Ayurveda:</b> Tridoṣas, Trigūṇa System, Body-Mind-Intellect-Consciousness Complex, Sixty-four art forms and occupational skills (64 Kalas).  <b>Irrigation Systems and Water management Practices Town Planning &amp; Architecture:</b></p>		

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	Indian Architecture in India, Vāstu Śāstra;  Eight limbs of Vāstu,  Town Planning;  Temple Architecture	IKS_CH12_C02 : Vāstu-śāstra – The science of architecture	<a href="https://www.youtube.com/watch?v=Ff0xSXpHhKA&amp;t=2s">https://www.youtube.com/watch?v=Ff0xSXpHhKA&amp;t=2s</a>
		IKS_CH12_C03 : Eight limbs of Vāstu	<a href="https://www.youtube.com/watch?v=CTO4ShQRR1o&amp;t=1s">https://www.youtube.com/watch?v=CTO4ShQRR1o&amp;t=1s</a>
		IKS_CH12_C01 : Perspective of Arthaśāstra on town planning	<a href="https://www.youtube.com/watch?v=LADsmE0k75Y&amp;t=3s">https://www.youtube.com/watch?v=LADsmE0k75Y&amp;t=3s</a>
		IKS_CH12_C04 : Town planning IKS_CH12_C05 : Temples in India: marvelous stone architecture for eternity	<a href="https://www.youtube.com/watch?v=0xR5ZBq6H2A&amp;t=1s">https://www.youtube.com/watch?v=0xR5ZBq6H2A&amp;t=1s</a> <a href="https://www.youtube.com/watch?v=L5zJgaiHgSc">https://www.youtube.com/watch?v=L5zJgaiHgSc</a>
		IKS_CH12_C06 : Temple architecture in India  IKS_CH12_C07 : Iconography	<a href="https://www.youtube.com/watch?v=bnGKt2ey9zQ">https://www.youtube.com/watch?v=bnGKt2ey9zQ</a>  <a href="https://www.youtube.com/watch?v=Jh4e_MJBcUE">https://www.youtube.com/watch?v=Jh4e_MJBcUE</a>
5	<b>Governance, Public Administration &amp; Management:</b> Rāmāyaṇa on great attributes, Arthaśāstra – Governance & Administration, Janapada, Durga, Kosa, Danda, Mitra. IKS & United Nations Sustainable development goals. Safeguarding traditional Indian Knowledge.	<b>Bharatiya Management: Management and Ancient Indian Wisdom by Dr. Mahadevan</b> <b>Arthashastra: Modern Relevance</b> 01   Introduction and a bird's eye view   02 : 7 components of Kautilayan state  Management Paradigms from Bhagavad Gita	<a href="https://www.youtube.com/watch?v=gSXUYhJu3Ok">https://www.youtube.com/watch?v=gSXUYhJu3Ok</a>  <a href="https://www.youtube.com/watch?v=XJCwYCY1bP0">https://www.youtube.com/watch?v=XJCwYCY1bP0</a> <a href="https://www.youtube.com/watch?v=6R24qZ1ZSRc">https://www.youtube.com/watch?v=6R24qZ1ZSRc</a>  <a href="https://www.youtube.com/watch?v=PMrQZfXhGjk">https://www.youtube.com/watch?v=PMrQZfXhGjk</a>

Semester:					
INDIAN KNOWLEDGE SYSTEM					
Course Code	:		CIE	:	100 Marks
Credits: L:T:P	:	3:0:0	SEE	:	100 Marks
Total Hours	:	45 Hrs	SEE Duration	:	3 Hours
Unit-I					10 Hrs
<b>Introduction of Indian Knowledge Systems (IKS):</b> Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.					

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Unit – II		09 Hrs
Foundational Concepts of Mathematics and Science & Technology: Linguistics; Pānini’s work on Sanskrit Grammar, Phonetics, Ashtadhyayi’s vyakarana. Number System and Units of Measurement: concept of zero, Piṅgala and the Binary system. Knowledge: Framework & Classifications: Prameya, Pramana, Samsaya.		
Unit –III		10 Hrs
Science, Engineering & Technology in IKS: Mathematics; Arithmetic, geometry, trigonometry and algebra, Chanda Sastra of Pingala. Astronomy: Elements of the Indian Calendar, Āryabhaṭīya and the Siddhāntic Tradition, Panchanga, Astronomical Instruments (Yantras) and Jyotish. Engineering & Technology: Metals & Metal Working; Wootz Steel, Iron and Steel in India, Metals and Metal working Technology, Lost-wax casting of idols and artefacts, Dyes and Painting Technology, The art of making perfumes.		
Unit –IV		08 Hrs
Humanities & Social Sciences in IKS: Yoga and Ayurveda: Tridoṣas, Triguṇa System, Body-Mind-Intellect-Consciousness Complex, Sixty-four art forms and occupational skills (64 Kalas). Irrigation Systems and Water management Practices Town Planning & Architecture: Indian Architecture in India, Vāstu Śāstra; Eight limbs of Vāstu, Town Planning; Temple Architecture		
Unit –V		08 Hrs
Governance, Public Administration & Management: Rāmāyaṇa on great attributes, Arthaśāstra – Governance & Administration, Janapada, Durga, Kosa, Danda, Mitra. IKS & United Nations Sustainable development goals. Safeguarding traditional Indian Knowledge.		
Course Outcomes: After completing the course, the students will be able to:-		
CO1	Provide an overview on the concept of Indian Knowledge System and its importance.	
CO2	Appreciate the need and importance and assets of Indian Knowledge System.	
CO3	Recognize the relevance of Traditional knowledge in different domains.	
CO4	Establish the significance of Indian Knowledge systems in contemporary world.	
CO5	Understand the utility of deep rooted culture and its significance in engineering and technology and develop a route to accomplish goals in their work environment.	
Reference Books		

### Indian Knowledge System : 7 sem

1.	Introduction to Indian Knowledge System Concepts & Applications, B Mahadevan, Vinayaka Rajat Bhat, R N Nagendra Pavana, PHI Learning publishers, ISBN-13: 978-9391818203
2.	Traditional Knowledge System in India, Amit Jha, 2009, Atlantic Publishers and Distributors (P) Ltd., ISBN-13: 978-8126912230
3.	Knowledge Traditions and Practices of India, Kapil Kapoor, Avadesh Kumar Singh, Vol. 1, 2005, DK Print World (P) Ltd., ISBN 81-246-0334,
	<b>Suggested Web Links:</b>
1.	<a href="https://www.youtube.com/watch?v=LZP1StpYEPM">https://www.youtube.com/watch?v=LZP1StpYEPM</a>
2.	<a href="http://nptel.ac.in/courses/121106003/">http://nptel.ac.in/courses/121106003/</a>
3.	<a href="http://www.iitkgp.ac.in/department/KS;jsessionid=C5042785F727F6EB46CBF432D7683B63">http://www.iitkgp.ac.in/department/KS;jsessionid=C5042785F727F6EB46CBF432D7683B63</a> (Centre of Excellence for Indian Knowledge System, IIT Kharagpur)
4.	<a href="https://www.wipo.int/pressroom/en/briefs/tk_ip.html">https://www.wipo.int/pressroom/en/briefs/tk_ip.html</a>
5.	<a href="https://unctad.org/system/files/official-document/ditcted10_en.pdf">https://unctad.org/system/files/official-document/ditcted10_en.pdf</a>
6.	<a href="http://nbaindia.org/uploaded/docs/traditionalknowledge_190707.pdf">http://nbaindia.org/uploaded/docs/traditionalknowledge_190707.pdf</a>
7.	<a href="https://unfoundation.org/what-we-do/issues/sustainable-development-goals/?gclid=EAIaIQobChMInp-Jtb_p8gIVTeN3Ch27LAmPEAAAYASAAEgIm1vD_BwE">https://unfoundation.org/what-we-do/issues/sustainable-development-goals/?gclid=EAIaIQobChMInp-Jtb_p8gIVTeN3Ch27LAmPEAAAYASAAEgIm1vD_BwE</a>