Indian Knowledge System (IKS)- Concepts and Applications in Engineering-Syllabus

Week/Module	Topics
Week 0	• Demo Video • Welcome to the course • Course Schedule • Grading Policy • Exam Details • FAQ
Week 1:	**Indian Knowledge System – An Introduction:** 1. What is IKS? 2. Why do we need IKS? 3. Organization of IKS 4. Historicity of IKS 5. Some salient aspects of IKS
Week 2:	**The Vedic Corpus:** 1. Introduction to Vedas 2. A synopsis of the four Vedas 3. Sub-classification of Vedas 4. Messages in Vedas 5. Introduction to Vedāṅgas 6. Prologue on Śikṣā and Vyākaraṇa 7. Basics of Nirukta and Chandas 8. Introduction to Kalpa and Jyotiṣa 9. Vedic Life: A Distinctive Features
Week 3:	**Number Systems and Units of Measurement:** 1. Number systems in India - Historical evidence 2. Salient aspects of Indian Mathematics 3. Bhūta-Saṃkhyā system 4. Kaṭapayādi system 5. Measurements for time, distance, and weight 6. Piṅgala and the binary system

Week 4:	**Mathematics:** 1. Introduction to Indian Mathematics 2. Unique aspects of Indian Mathematics 3. Indian Mathematicians and their Contributions 4. Algebra 5. Geometry 6. Trigonometry 7. Binary mathematics and combinatorial problems in Chandaḥ Śāstra 8. Magic squares in India
Week 5:	**Astronomy:** 1. Introduction to Indian astronomy 2. Indian contributions in astronomy 3. The celestial coordinate system 4. Elements of the Indian calendar 5. Notion of years and months 6. Pañcāṅga – The Indian calendar system 7. Astronomical Instruments (Yantras) 8. Jantar Mantar of Rājā Jai Singh Sawai
	Mid semester Examination
Week 6:	**Engineering and Technology: 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
Week 7:	**Engineering and Technology: Other applications:**

	1. Science and technology heritage of India 2. Science and technology heritage: Literary Sources 3. Science and technology heritage: Physical structures 4. Science and technology heritage: Temples 5. Science and technology heritage: Watershed management 6. Dyes, arts and perfume production. 7. Surgical-techniques 8. Shipbuilding 9. Status of Indigenous S & T
Week 8:	**Town Planning and Architecture:** 1. Perspective of Arthaśāstra on town planning 2. 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
Week 9:	**Knowledge Framework and classifications:** 1. Indian scheme of knowledge 2. The knowledge triangle 3. Prameya – A vaiśeṣikan approach to physical reality 4. Dravyas – the constituents of the physical reality 5. Attributes – the properties of substances and Action – the driver of conjunction and disjunction 6. Sāmānya, viśēṣa, samavāya 7. Pramāṇa – the means of valid knowledge 8. Saṃśaya – ambiguities in existing knowledge 9. Framework for establishing valid knowledge 10. Deductive or inductive logic framework 11. Potential fallacies in the reasoning process 12. Siddhānta: established tenets in a field of study
Week 10:	**Linguistics**

	1. Introduction to Linguistics 2. Aṣṭādhyāyī 3. Phonetics 4. Word generation 5. Computational aspects 6. Mnemonics 7. Recursive operations 8. Rule based operations 9. Sentence formation 10. Verbs and prefixes 11. Role of Sanskrit in natural language processing
	End – Term Assessment

Final Exam Details:

If you wish to obtain a certificate, you must register and take the proctored exam in person at one of the designated exam centres. The registration URL will be announced when the registration form is open. To obtain the certification, you need to fill out the online registration form and pay the exam fee. More details will be provided when the exam registration form is published, including any potential changes. For further information on the exam locations and the conditions associated with filling out the form, please refer to the form.

Grading Policy:

Assessment Type	Weightage
Mid-Term & End-Term	25%
Final Exam	75%

Certificate Eligibility:

- 40% marks and above in Mid Term & End Term
- 40% marks and above in the final proctored exam

Disclaimer: In order to be eligible for the certificate, you must register for enrolment and exams using the same email ID. If different email IDs are used, you will not be considered eligible for the certificate.