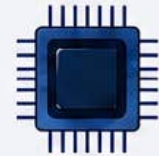
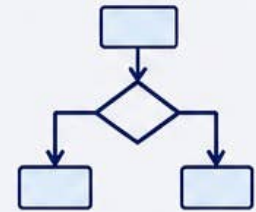




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Syllabus



IKS –Major Specific: IKS in Computational Sciences

Level	Semester	Course Code	Course Name	Credits	Teaching Hours	Exam Duration	Max Marks
5.0	III	109208/ 110208/ 112208/123208/ 134208/135208/138208	IKS in Computational Sciences	2	30	2 Hrs.	30

Course Objectives:	1. To sensitize the students about context in which they are embedded i.e. Indian Culture and civilization including its Knowledge System and Tradition. 2. Familiarize with the key components of the IKS 3. Know the phonetical foundations in Sanskrit Language. 4. Understand how to measures for time, length and weight were in use in Ancient India. 5. Identify the root of Modern-day binary system.					
Course Outcomes:	Students will be able to - 1. Understanding of the key concepts and principles of the Indian knowledge system. 2. Appreciate the potential Sanskrit offers in Natural Language Processing. 3. Understand how measures, time, length and weight were in use in Ancient India. 4. Understand specific contribution in Arithmetic and Geometry. 5. Demonstrate the aspect of Indian Mathematics.					
Unit System	Contents	Workload Allotted	Weightage of Marks Allotted	Incorporation of Pedagogies		
Unit I	Importance of Ancient knowledge, Defining Indian Knowledge System, The IKS Corpus-A Classification Framework, Caturdasa –vidyasthana. History of IKS, Unique Aspects of IKS. Components of a Language, Sanskrit Grammar and Phonetics in Sanskrit.	8 Hrs.	8 Marks	Use any pedagogical technique suitable for the topic		
Unit II	Computational Concept in Astaddhyayi, Role of Sanskrit in Natural Language Processing. IKS in science, engineering and technology - Introduction to ancient Indian mathematics, importance of mathematics in ancient time, great Indian mathematician and their contribution, number system and its significance, concept of algebra, arithmetic and geometry.	7 Hrs.	7 Marks			

Unit III	Number System in India – Historical Evidence, Salient Features of the Indian Numeral. Concept of Zero and its importance, Large Numbers and their Representation, Place value of Numerals, Decimal Number System, Approaches to represent Numbers,	8 Hrs.	8 Marks	
Unit IV	Measurements for Time, Distance and Weight Unique Aspect of Indian Mathematics, Great Mathematicians and their Contributions, Arithmetic- Square of Number, Square Root, Series and Progressions. Value of Pi (π). Algebra, Binary Mathematics. Magic Squares in India.	7 Hrs.	7 Marks	
References :	Course Material/Learning Resources Text books: 1. Introduction to IKS Concept and Application by Prof B Mahadevan, V R Bhat and Nagendra Pavana R N, PHI Publication. References: 1. Nair, Shantha N. Echoes of Ancient Indian Wisdom. New Delhi: Hindology Books, 2008. 2. Banerjea, P. (1916), Public administration in ancient India, Macmillan, London. 3. Kautilya Arthasastra by Dr. R P Kangle, second edition, 1969, reprint in 2000 by Motilal Banarsi Dass Publishers Private Limited, Delhi. 4. L. N.Rangarajan- Kautilya Arthashastra (English), Penguin Books India (P) Ltd, 1992. Web link: 1. https://iksindia.org/ 2. https://iksindia.org/lectures-and-videos.php 3. https://mmc.ugc.ac.in/Home/Indian_Knowledge_System			

Assessment Rubric: Internal for IKS (Major Specific) Course

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI THEORY EXAMINATION B.Sc. II, SEMESTER – III (NEP)			
Theory	Course Code: 109208/ 110208/ 112208/123208/ 134208/135208/138208	Course Title: IKS in Computational Sciences	Max Marks: 20
Sr. No.	Assessment Criteria		Marks
1	Any Two of the Activity (weekly or monthly assignment/ Unit Test/Class Test) (CAT-1)		10
2	Any One of the Activity includes Open Book Test, MCQ Tests, / Theory related Class activity/Task etc.) etc. (CAT-2)		5
3	Participation in any one Activity includes Quiz, Seminar, Group Discussion, Industry visit, CaseStudy, Mini project, innovative work, etc. based on Theory Course. Involvement in subject related activities such as Conference, Workshop, Coding Competitions etc. (CAT-3)		5