Program	BACHELOR OF TECHNOLOGY (B.Tech)	**Semester - 4**
Type of Course	Humanities, Social Science and Management Course	
Prerequisite		
Rationale	-	
Effective From A.Y.	2025-26	

Teaching Scheme (Contact Hours)				Examination Scheme				
				Theory Marks		**Practical Marks**		**Total Marks**
Lecture	**Tutorial**	**Lab**	**Credit**	**SEE TH**	**IAT**	**SEE P**	**CCE**	
2	-	-	2	50	30	-	30	110

SEE - *Semester End Examination,* *IAT* - *Internal Assessment Test,* *CCE* - *Continues & Comprehensive Evaluation*

Course Content		**T** - Teaching Hours | **W** - Weightage	

Sr.	Topics	T	W
1	**Foundations of Indian Knowledge Systems & Sanskrit Heritage**	6	20
	• Meaning, scope, and uniqueness of Indian Knowledge Systems (IKS) • Oral traditions & continuity of knowledge • Scientific structure of Sanskrit language • Vedas, Upanishads, Puranas		
2	**Civilizational Development & Cultural Knowledge Traditions**	6	20
	• Evolution of Indian civilization: Indus Valley to Modern India • Social, cultural, economic systems • Education systems: Gurukula, universities (Takshashila, Nalanda, Vallabhi)		
3	**Engineering and Technological Heritage of India**	6	20
	• Indus Valley engineering: town planning, drainage, water systems,Urban planning • Vedic and post-Vedic engineering concepts • Medieval engineering: stepwells, forts, irrigation systems • Case studies: Lothal dockyard, Chola irrigation, Golconda fort		
4	**Modern India's Contributions to Science, Engineering & Technology**	6	20
	• Colonial to modern transition: railways, canals, bridges • Indian engineers in colonial era (Visvesvaraya & others) • Post-independence nation building: IITs, dams, highways • Space technology (ISRO): Chandrayaan, Mangalyaan		
5	**Emerging Technologies, Sustainability & IKS-Based Future**	6	20
	• Renewable energy: solar, wind, hydropower • Smart cities, AI, IoT, robotics • Green engineering & climate change solutions • Sustainable agriculture & water management (IKS-based) • NEP 2020, Atmanirbhar Bharat, future challenges & opportunities		
	Total	30	100

Suggested Distribution Of Theory Marks Using Bloom's Taxonomy

Level	Remembrance	Understanding	Application
Weightage	30	35	35

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

Course Outcomes

At the end of this course, students will be able to:

CO1	Summarize the key features of Indian Knowledge Systems, oral knowledge transmission, Sanskrit heritage, and major Indian scriptures
CO2	Discuss India's civilizational growth, socio-economic structures, and the contribution of Gurukula and ancient universities such as Takshashila and Nalanda to education.
CO3	Illustrate the application of historical Indian engineering practices through case studies such as Lothal dockyard, Chola irrigation, and Golconda fort.
CO4	Identify major developments in India's science and technology, including railways, dams, engineering institutions, and space missions
CO5	Apply concepts of emerging technologies, sustainability practices, and IKS-based solutions to address real-world challenges in energy, agriculture, water management, and national development initiatives.

CO PO Mapping

CO	CO - 1	CO - 2	CO - 3	CO - 4	CO - 5
PO - 1	2	2	3	3	2
PO - 2	1	1	2	1	2
PO - 3	1	1	1	1	1
PO - 4	1	1	1	1	1
PO - 5	1	1	1	1	1
PO - 6	3	3	2	2	3
PO - 7	3	2	1	1	2
PO - 8	1	1	1	1	2
PO - 9	2	2	2	2	2
PO - 10	1	1	1	2	1
PO - 11	3	3	2	3	3

CO PSO Mapping

CO	CO - 1	CO - 2	CO - 3	CO - 4	CO - 5
PSO - 1	2	2	2	2	2

Reference Books

1.	**Indian Knowledge Systems: Vol I and II (TextBook)** By Kapil Kapoor, A K Singh	D.K. Print World	2005