



Shri Vile Parle Kelavani Mandal's

DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING

(Autonomous College Affiliated to the University of Mumbai)

NAAC Accredited with "A" Grade (CGPA : 3.18)



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Scheme and detailed syllabus of DJS22 Honors Program in Smart Computing

With effect from the Academic Year: 2024-2025



Scheme for Honors in Smart Computing (Academic Year 2024-2025)

Sr	Course Code	Course	Teaching Scheme(hrs)				Continuous Assessment (A)			Semester End Assessment (B) (marks)					Aggregate (A+B)	Total Credits
			Th	P	T	Credits	Th	T/W	Total CA (A)	Th	O	P	O &P	Total SEA (B)		
SEM V																
1	DJS22ICHN1C1	Smart Technologies	4	--	--	4	35	--	25	65	--	--	--	65	100	4
SEMVI																
2	DJS22ICHN1C2	Cognitive Computing	4	--	--	4	35	--	25	65	--	--	--	65	100	4
3	DJS22ICHN1L1	Cognitive Computing Laboratory	--	2	--	1	--	25	25	--	--	--	25	25	50	1
SEM VII																
4	DJ22ICHN1C3	IoT Data Analytics	4	--	--	4	35	--	25	65	--	--	--	65	100	4
5	DJS22ICHN1L2	IoT Data Analytics Laboratory	--	2	--	1	--	25	25	--	--	--	25	25	50	1
SEM VIII																
6	DJS22ICHN1C4	Social Cyber Security	4	--	--	4	35	--	25	65	--	--	--	65	100	4
		Total	16	4		18	140	50	150	260			50	310	500	18



Program: B.Tech. in CSE(IoT and Cyber Security with Blockchain Technology)					Semester : V			
Course : Smart Technologies(DJS22ICHN1C1)					Course Code: DJS22ICHN1C1			
Teaching Scheme (Hours / week)				Evaluation Scheme				
				Semester End Examination Marks (A)		Continuous Assessment Marks (B)		
Lectures	Practical	Tutorial	Total Credits	Theory	Term Test 1	Term Test 2	Total	
				65	20	15	35	100
				Laboratory Examination	Term work		Total Term work	
4			4	--	--	--	--	

Pre-requisite:

1. Introduction to IoT
2. Computer Networks

Objectives:

1. To understand the fundamental principles and concepts of smart technologies.
2. To identify different types of smart technologies and their applications.
3. Analyze the impact of smart technologies on society, economy, and environment.
4. Develop critical thinking and problem-solving skills related to smart technologies

Outcomes: On completion of the course, learner will be able to:

1. Demonstrate the knowledge of design of smart computing and its applications.
2. Describe different types of smart technologies



3. Explore IoT, artificial intelligence (AI) and machine learning (ML) techniques used in smart technologies.

4. Analyze and evaluate real-world case studies of smart technology implementations in various domains.

Detailed Syllabus: (unit wise)		
Unit	Description	Duration
1	Introduction to Smart Technologies Definition and characteristics of smart technologies, Evolution of smart technologies, Overview of smart technologies and their significance in smart computing, Key components of smart systems, The Five A's Of Smart Computing, Examples of smart computing, Challenges and opportunities in smart technologies, Emerging trends in smart technologies	06
2	Smart Devices and Services : Smart Devices and Service properties, Smart mobile devices and Users, Mobile code, Smart Card Devices and Networks, Service Architecture Models. Service Provision Lifecycle. Virtual Machines and Operating Systems, OS for Mobile Computers and Communicator Devices.	07
3	Ubiquitous Computing : Concept of Ubiquitous Computing and Advantages, Ubiquitous Computing Applications and Scope, Properties of Ubiquitous Computing, Modelling the Key Ubiquitous Computing Properties. Ubiquitous System Environment Interaction. Architectural Design for UbiCom-Systems : Smart DEI Model.	07
4	Integration of Smart Technologies: Internet of Things (IoT) and its role in smart computing, Wearable and Personal Smart Devices, AI and ML techniques for smart technologies, Integration of smart devices and systems with existing infrastructure,	04
5	Smart Technologies applications Smart Cities and Urban Infrastructure: Smart energy management and sustainable infrastructure, Smart transportation and mobility solutions, Case studies of successful smart city implementations Artificial Intelligence (AI) in Smart Technology: AI applications in smart computing, Natural language processing and voice recognition in smart devices, AI-based decision-making and automation in smart technology Smart Technologies in Energy: Smart grids and energy management, Renewable energy integration, Sustainable cities and smart buildings	07
6	Future Trends and Innovations: Edge computing and fog computing for smart systems, Blockchain technology for secure and decentralized smart systems , Cloud computing for smart technologies, Analysis of real-world smart technology implementations	08
	Total	39



Books Recommended:

Text Books

1. Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia" by Anthony M. Townsend
2. "Smart Sensors for Industrial Applications" by Krzysztof Iniewski
3. Smart Phone and Next Generation Mobile Computing (Morgan Kaufmann Series in Networking), PeiZheng, Lionel Ni
4. Stefan Poslad, Ubiquitous Computing, Wiley, Student Edition, ISBN:9788126527335John Krumm, Ubiquitous Computing Fundamentals
5. ArshdeepBahga, Vijay Madiseti, "Internet of Things – A hands-on approach", Universities Press, ISBN: 0: 0996025510, 13: 978-099602551

Reference Books

1. Principles Of Mobile Computing, Hansmann, LotharMerk, Martin Niclous, Stober
2. Mobile Computing, Tomasz Imielinski, Springer
3. Laurence T. Yeng, EviSyukur and Seng W. Loke, Handbook on Mobile and UbiquitousComputing, CRC, 2nd Edition, ISBN: 9781439848111
- 4 Smart Internet of things projects AgusKurniawanPackt - Sep 2016 978-1- 78646- 651-8 2 The Internet of Things Key Olivier Willy Publication 2nd Edition 978-
5. "The Future of the Professions: How Technology Will Transform the Work of Human Experts" by Richard Susskind and Daniel Susskind
6. "Smart Cities: Governing, Modelling, and Analysing the Transition" by Mark Deakin and Husam Al Waer
7. "Smart Grids: Infrastructure, Technology, and Solutions" by Stuart Borlase



Evaluation Scheme:

Semester End Examination (A):

Theory:

1. Question paper will be based on the entire syllabus summing up to 65 marks.
2. Total duration allotted for writing the paper is 2 hrs.

Continuous Assessment (B):

Theory:

1. One term test of 20 marks and one term test/presentation/assignment/course project / group discussion/ any other of 15 marks will be conducted during the semester.
2. Total duration allotted for writing each of the paper is 1 hr.

Prepared by

Checked by

Head of the Department

Vice Principal

Principal

