

# PONDICHERRY UNIVERSITY

Value Added Course in common to all UG programmes (Arts, Science and Commerce)



NEP SYLLABI

**DIGITAL TECHNOLOGIES**

**AFFILIATED COLLEGES**

**FROM THE ACADEMIC YEAR (2023-24 onwards)**

## VALUE ADDED COURSES

Year	I	Course Code: CS2VA04	Credits	2
Sem.	II	Course Title: Digital Technologies	Hours	45
Course Prerequisites, if any	-NIL-			
Internal Assessment Marks: 25	End Semester Marks: 75	Duration of ESA (Theory) : 03 hrs. Duration of ESA (Practical) : 03 hrs.		
Course Outcomes	<ul style="list-style-type: none"> <li>• Learn about digital paradigm.</li> <li>• Understand the importance of digital technology, digital financial tools, e-commerce.</li> <li>• Analyse the concepts of communication and networks.</li> <li>• Understand the e-governance and Digital India initiatives.</li> <li>• Understand the use &amp; applications of digital technology.</li> <li>• Learn the applications of machine learning and big data.</li> </ul>			
Unit No.	Course Content		Hours	
Theory Component				
Unit I	Introduction & Evolution of Digital Systems. Role & Significance of Digital Technology. Information & Communication Technology & Tools. Computer System & its working, Software and its types. Operating Systems: Types and Functions. Problem Solving: Algorithms and Flowcharts.		7	
Unit II	Communication Systems: Principles, Model & Transmission Media. Computer Networks & Internet: Concepts & Applications, WWW, Web Browsers, Search Engines, Messaging, Email, Social Networking. Computer Based Information System: Significance & Types. E-commerce & Digital Marketing: Basic Concepts, Benefits & Challenges.		7	
Unit III	Digital India & e-Governance: Initiatives, Infrastructure, Services and Empowerment. Digital Financial Tools: Unified Payment Interface, Aadhar Enabled Payment System, USSD, Credit / Debit Cards, e-Wallets, Internet Banking, NEFT/RTGS and IMPS, Online Bill Payments and PoS. Cyber Security: Threats, Significance, Challenges, Precautions, Safety Measures, & Tools, legal and ethical perspectives.		7	
Unit IV	Emerging Technologies & their applications: Overview of Cloud Computing, Big Data, Internet of Things, Virtual Reality,		7	
Unit V	Emerging Technologies & their applications: Blockchain & Cryptocurrency, Robotics, Machine Learning & Artificial Intelligence, 3-D Printing. Digital Signatures.		7	
Practical Component				
Practice	<ol style="list-style-type: none"> <li>1. Operating System Installation and configuration</li> <li>2. Application Software Installation and configuration</li> <li>3. Hardware understanding and minor troubleshooting</li> <li>4. Networking, cabling, configuration</li> </ol>		10	
Recommended Learning Resources				
Print Resources	<ol style="list-style-type: none"> <li>1. Pramod Kumar, Anuradha Tomar, R. Sharmila, "Emerging Technologies in Computing - Theory, Practice, and Advances", Chapman and Hall / CRC, 1<sup>st</sup> Edition, 2021, eBook ISBN: 9781003121466. <a href="https://doi.org/10.1201/9781003121466">https://doi.org/10.1201/9781003121466</a>.</li> <li>2. V. Rajaraman, "Introduction to Information Technology", PHI, 3<sup>rd</sup> Edition, 2018, ISBN-10: 9387472299, ISBN-13: 978-9387472297.</li> <li>3. E. Balagurusamy, "Fundamentals of Computers", Tata Mc GrawHill, 2<sup>nd</sup> Edition, 2011, ISBN: 9780071077880.</li> </ol>			

	<ol style="list-style-type: none"><li>4. Behrouz A. Forouzan, "Data Communications and Networking", McGraw Hill, 4<sup>th</sup> Edition, 2007, ISBN 978-0-07-296775-3.</li><li>5. Rajkumar Buyya, James Broberg, and Andrzej Goscinski, "Cloud Computing-Principals and Paradigms", Wiley, 2011, ISBN: 978-0-470-88799-8.</li><li>6. Stuart Russel and Peter Norvig, "Artificial Intelligence - A Modern Approach", Pearson Education, 3<sup>rd</sup> Edition, 2010, ISBN- 13: 978-0-13 -604259-4.</li><li>7. Samuel Greengard, "Internet of Things", The MIT Press, 2015, ISBN: 9780262328937, <a href="https://doi.org/10.7551/mitpress/10277.001.0001">https://doi.org/10.7551/mitpress/10277.001.0001</a>.</li><li>8. C.S.V. Murthy, "E- Commerce – Concept, Models &amp;Strategies", Himalaya Publishing House, 2015, ISBN: 8178662760.</li><li>9. Hurwith, Nugent Halper, Kaufman, "Big Data for Dummies", Wiley &amp; Sons, 1<sup>st</sup> Edition, 2013, ISBN-13: 978-1118504222.</li></ol>
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