Course Code	CS 4XX/6XX
Title of the Course	Digital Governance Delivery Systems
Course Category	Department Elective
Credit Structure	L-T-P–Credits 2-1-0-3
Concerned Department	Computer Science and Engineering
Pre-requisite	Computer Programming, Software Engineering, Operating Systems
Objectives	1. To learn applying advanced software patterns and ethical computing practices in digital governance systems. 2. To learn evaluating centralized and decentralized digital governance frameworks for privacy, security, and inclusiveness
Course Outcomes	1. Ability to Design secure digital governance systems using advanced software patterns, distributed technology 2. Able to Apply lifecycle engineering with risk-based validation, privacy-enhancing technologies, and accessibility-compliant system integration.
Course Syllabus	**Foundations of Digital Governance:** Introduction to digital transformation and governance, technology for public services, software trends in government, Advantages of confidentiality. **Software Patterns and Technological Frameworks:** Core technologies, software patterns, digital governance solutions, centralized vs decentralised frameworks, emerging technologies. Systems Engineering and Lifecycle Management for **Digital Governance Solutions:** Requirements Analysis & Stakeholder Engagement, System Architecture & Integration, Verification, Validation, & Risk Management, Lifecycle Optimization. **Privacy, Security, and Data Protection:** public data protection, critical aspects, cybersecurity, and maintaining privacy in digital governance. **Ethical, Transparent, National international standards, and Inclusive Governance:** Ethical dimensions of digital governance, inclusivity in systems design, User-centered design and accessibility standards for diverse public user groups, functional elements.
Suggested Books	Textbooks: 1. Andrés Luque-Ayala, Simon Marvin, **“Urban Operating Systems: Producing the Computational City”**, The MIT Press : USA, 2020 , 9780262360982 2. Birgit Vogel-Heuser, Manuel Wimmer . **“Digital Transformation: Core Technologies and Emerging Topics from a Computer Science Perspective”**, Springer, Germany, 2024, 9783662650066 Reference books: 3. Lindsay Herbert, **“Digital Transformation: Build Your Organization_s Future for the Innovation Age”,** Bloomsbury Business, UK, 2017, 9781472940377