Course Type: Foundation/Introductory Course	**Credits**: (L-2, T-0, P-0)
Unitization: 2 Units	**Max. Marks**: _____
Course Title: Digital and Technological Solutions	**Course Code:** _____

Course Objectives:

- *To gain familiarity with digital paradigms*
- *To sensitize about role & significance of digital technology*
- *To provide know how of communications & networks*
- *To bring awareness about the e-governance and Digital India initiatives*
- *To provide a flavour of emerging technologies – Cloud, Big Data, AI 3D printing*

Course Outcome:

1. Knowledge about digital paradigm.
2. Realisation of importance of digital technology, digital financial tools, e-commerce.
3. Know how of communication and networks.
4. Familiarity with the e-governance and Digital India initiatives
5. An understanding of use & applications of digital technology.
6. Basic knowledge of *AI, machine learning and big data*

Teaching Methodology:

S. No	Type of teaching methodology	Credit	Credit hours
1	Taught Courses = Lectures by Subject Expert	2	30 hours Teaching + 60 hours out of class activities such as preparation, assignments, independent reading, study, problem solving

Course Contents:

UNIT I

Introduction & Evolution of Digital Systems. Role & Significance of Digital Technology. Information & Communication Technology & Tools. Computer System & it's working, Software and its types. Operating Systems: Types and Functions. Problem Solving: Algorithms and Flowcharts.

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.

UNIT II

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.

Emerging Technologies & their applications: Overview of Cloud Computing, Big Data, Internet of Things, Virtual Reality, Blockchain, Robotics, Artificial Intelligence, 3-D Printing. Future of Digital Technologies.

TEXT BOOKS:

1. Fundamentals of Computers by E Balagurusamy- Tata Mc GrawHill
2. Data Communications and Networking by Behrouz A. Forouzan – McGraw Hill

REFERENCE BOOKS:

1. "Cloud Computing- Principals and Paradigms" by Buvya, Broberg, and Gosciniski- Wiley
2. "E commerce" by Laudon.
3. "Artificial Intelligence- A Modern Approach by Russel and Norving" – Pearson Education.
4. "Internet of Things" by Samuel Greengard – MIT Press
5. "Introduction to Computers by Peter Norton" - Tata McGraw Hill
6. "E-Commerce Concepts, Models, Strategies"- C.S.V. Murthy
7. "Basics of Artificial Intelligence and Machine Learning" by Dheeraj Mehrotra – Notion Press.
8. "Big Data for dummies" by Hurwith, Nugent,Halper, Kaufman, Wiley & Sons – Wiley.