

Ahmednagar Jilha Maratha Vidya Prasarak Samaj's
New Arts, Commerce and Science College, Ahmednagar
(Autonomous)

Title of the Course: Digital and Technical Solutions								
Year: I				Semester: I				
Course Type	Course Code	Credit Distribution		Credits	Allotted Hours	Allotted Marks		
		Theory	Practical			CIE	ESE	Total
VEC	VEC-1(A)	02	00	02	30	15	35	100

Learning Objectives:

- To gain familiarity with digital paradigms;
- To sensitize about the role and 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 Outcomes (Cos)

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

Detailed Syllabus:**Unit I:****(15 L)**

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.

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:**(15 L)**

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.

Emerging Technologies and their Applications: Overview of Cloud Computing, Big Data, Internet of Things, Virtual Reality, Blockchain & Cryptocurrency, Robotics, Machine Learning & Artificial Intelligence, 3-DPrinting, Digital Signatures.

Suggested Readings/Material:

1. V. Rajaraman, Introduction to Information Technology, 3rd Edition, PHI;
2. E Balagurusamy, Fundamentals of Computers, Tata Mc GrawHill;
3. Behrouz A. Forouzan, Data Communications and Networking, McGraw Hill;
4. Pramod Kumar, Anuradha Tomar, R. Sharmila, Emerging Technologies in Computing Theory, Practice, and Advances, Edition 2021, Chapman and Hall/CRC Imprint;
5. Buyya, Broberg, and Goscinski, Cloud Computing- Principals and Paradigms, Wiley
6. Russel and Norving, Artificial Intelligence- A Modern Approach, Pearson Education;
7. Samuel Greengard, Internet of Things, MIT Press;
8. C.S.V. Murthy, E-commerce Concepts, Models, Strategies;
9. Hurwith, Nugent Halper, Kaufman, Big Data for dummies, Wiley & Sons - Wiley.