

AF-101 IT Fundamentals and Applications:

Fundamentals of IT: Introduction to Information and Communication Technologies (ICT), Components and scope of ICT, ICT productivity tools, Emerging technologies and future trends, Ethical Considerations in Use of ICT Platforms and Tools, Applications of ICT in education, healthcare and finance. Digital citizenship.

Data Representation and Number Systems: Binary, octal, decimal, hexadecimal systems, data

Representation: characters, numbers, multimedia.

Databases: Fundamentals of databases: organization and storage, introduction to Information Systems (IS) and Management Information Systems (MIS), real world IS and MIS applications.

Data Communication and Computer Networking: Network topologies, types of network.

Programming Languages:

Evolution and structures: syntax, semantics, special purpose vs. general-purpose languages, comparative study of data types, control structures and algorithms, basics of coding, practical problem solving.

Recommended book(s):

Text book(s)

1. Emily Jones, "Fundamentals of Computer Programming", States Academic Press, 2022.
2. Prasun Barua, "Fundamentals of Information and Communication Technology (ICT)", Independently published, 2023.

Reference Book(s)

1. Dr. Shun-Ping Chen, "Fundamentals of Information and Communication Technologies", 1st Edition, Cambridge Scholars Publishing, 2020.
2. Muhammad Misbahudeen, "The Fundamentals of Programming: Basic Terms and Concepts in Programming for Beginners", 2024.