

Lecture Plan

Name of the college: Government College of Arts, Science and Commerce, Sanquelim- Goa

Name of Faculty: Mr. Amar R. NaikSubject: Computer Science

Paper code: CSC-112 Computer Software FundamentalsProgram: F.Y.B.Sc.Division: -

Academic year: 2025 - 2026Semester: ITotal Lectures: 60

- Course Objectives: This course will enable the student to:
- Understand the fundamentals of IT, software and Networking
 - Learn the usage of IT, software and networking
 - Familiarize with latest trends in IT

- Course Outcomes:
- Upon completion of the course students should be able to:
- Remember basics of IT, software, networking, trends in IT
 - Understand various I/O devices, systems, networking devices, IT uses
 - Apply the concepts in systems, devices, networking for IT
 - Analyse the applications of IT, Software, Networking and trends in IT

Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
June	20/06/2025	21/06/2025	1	- Syllabus Overview, Marks distribution, Unit I: Introduction to Data and IT		Laptop, LCD Projector, PPT	P. Aksoy, L. DeNardis, Introduction to Information Technology, Cengage Learning, 2006

							A. Goel, Computer Fundamentals, Pearson Education, 2010
June	23/06/2025	28/06/2025	4	- Types of Data - Data Representation – Character Formats (ASCII) - Data Representation – Unicode - Number Systems – Concept	List ASCII & Unicode uses	Laptop, LCD Projector, PPT	P. Aksoy, L. DeNardis, Introduction to Information Technology, Cengage Learning, 2006 A. Goel, Computer Fundamentals, Pearson Education, 2010
June - July	30/06/2025	05/07/2025	4	- Number Systems – Conversions - Data Organization – Directory Structure - File Formats & Compression - Data Backup – Concepts & Techniques	Convert decimal to binary	Laptop, LCD Projector, PPT	P.K. Sinha, P. Sinha, Fundamentals of Computers, BPB Publishers, 2007
July	07/07/2025	12/07/2025	4	- Data Backup – Online Backup & Advantages - Data device interface access methods (USB, IDE, SATA), Optical memory (Blue-ray) - Flash memory (USB sticks, SD, MicroSD) - Magnetic memory (External disks), SSD	Compare storage device types	Laptop, LCD Projector, PPT	P. Aksoy, L. DeNardis, Introduction to Information Technology, Cengage Learning, 2006 P.K. Sinha, P. Sinha, Fundamentals of Computers, BPB Publishers, 2007
July	14/07/2025	19/07/2025	4	- Information – Concepts & Qualities - Information Technology – Definition & Components - Applications of IT - Unit II: Definition of Software, Types: System & Application, - Relationship between Hardware & Software	List IT applications by sector	Laptop, LCD Projector, PPT	P. Aksoy, L. DeNardis, Introduction to Information Technology, Cengage Learning, 2006
July	21/07/2025	26/07/2025	4	- Programming Languages – Overview	Differentiate compiler &	Laptop, LCD Projector, PPT	A. Goel, Computer Fundamentals, Pearson Education, 2010

				- Programming Language Translators - System Programs – Overview - Operating System – Definition & Functions	interpreter		
July - August	28/07/2025	02/08/2025	4	- Types & Examples of Operating System - Multi-Boot Systems - Concept of running multiple OS on one machine, Disk partitions and logical drives - System directories - Users: administrator, limited rights, guest		Laptop, LCD Projector, PPT	A. Goel, Computer Fundamentals, Pearson Education, 2010 P.K. Sinha, P. Sinha, Fundamentals of Computers, BPB Publishers, 2007
August	04/08/2025	09/08/2025	4	- ISA I, User directories, Access rights - Setting permissions in Windows/Linux, OS Services - Device Drivers, Application Programs – Overview - Mathematical Computation Applications		Laptop, LCD Projector, PPT	P.K. Sinha, P. Sinha, Fundamentals of Computers, BPB Publishers, 2007 A. Goel, Computer Fundamentals, Pearson Education, 2010
August	11/08/2025	16/08/2025	3	- Human Computer Interaction (HCI) – Introduction - Unit II Summary - Unit III: Definition of computer networking, Need for networking		Laptop, LCD Projector, PPT	A. Goel, Computer Fundamentals, Pearson Education, 2010
August	18/08/2025	23/08/2025	4	- Why Networking is Needed - Types of Networks – LAN - Types of Networks – MAN & WAN - Network Components – Hardware	Draw simple LAN diagram	Laptop, LCD Projector, PPT	A. Goel, Computer Fundamentals, Pearson Education, 2010
August	25/08/2025	25/08/2025	1	- Network Components – Software		Laptop, LCD Projector, PPT	A. Goel, Computer Fundamentals, Pearson Education, 2010

September	02/09/2025	06/09/2025	3	- ISA II, Network Devices - Network Topologies - Communication Channels, Communication Process		Laptop, LCD Projector, PPT	
September	08/09/2025	13/09/2025	4	- Data Transmission Speed - Bits vs Bytes, Measuring speed (bps, Kbps, Mbps, Gbps) - Communication Types (Modes) - Internet – Role and Importance - IP addressing - Public vs Private IP, Static vs Dynamic IP		Laptop, LCD Projector, PPT	A. Goel, Computer Fundamentals, Pearson Education, 2010
September	15/09/2025	20/09/2025	4	- WWW, Protocols - HTTP, HTTPS, FTP, SMTP - Unit IV: Introduction to Future IT Trends - Why IT trends evolve, Overview of key emerging technologies - Artificial Intelligence – Definition, basic concepts - AI in Healthcare, Education		Laptop, LCD Projector, PPT	A. Goel, Computer Fundamentals, Pearson Education, 2010
September	22/09/2025	27/09/2025	4	- AI in Business, Entertainment, Transport - Automation – Concept & Examples - IoT – Introduction - IoT Applications in smart homes, agriculture, industry, health	Find AI use in education	Laptop, LCD Projector, PPT	https://www.oracle.com/in/internet-of-things/ P. Aksoy, L. DeNardis, Introduction to Information Technology, Cengage Learning, 2006
September - October	29/09/2025	04/10/2025	4	- ISA III - Edge Computing – Definition & difference from cloud computing, Advantages for real-time processing - Edge Computing – Applications - Cloud Infrastructure - Definition of cloud computing, Service models		Laptop, LCD Projector, PPT	https://www.vmware.com/topics/edgecloud

				(IaaS, PaaS, SaaS)			
October	06/10/2025	11/10/2025	4	- Cloud Infrastructure – Advantages & Applications - Augmented Reality (AR), Virtual Reality (VR) – Concept, working, - Business Intelligence – Concept - Business Intelligence – Applications	List AR apps in retail	Laptop, LCD Projector, PPT	P. Aksoy, L. DeNardis, Introduction to Information Technology, Cengage Learning, 2006
October	13/10/2025	18/10/2025	4	- Revision & QP solving		Laptop, LCD Projector, PPT	

* Assessment Rubrics

Component	Max Marks
ISA 1	10
ISA 2	10
ISA 3	10
Best 2 ISAs	
Semester End Examination	80