

Semester: I				
Programme: B.Sc. Computer Science (Hons.)				
Course: INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)				
Paper code: M1CS230111T			Credits: 3	
Hours/week: 3				
Category: Core/MDC/SEC/VAC: MDC				
Theory / Practical / Composite: Theory				
No of Modules: 1				
Course Overview: This course introduces the fundamentals of Information and Communication Technology (ICT). Students learn ICT components, number systems, data representation, problem solving using algorithms and flowcharts, computer hardware and software, and networking fundamentals. The course develops foundational understanding necessary for effective use of computing and communication technologies in academic and professional environments.				
Course Outcome:				
1. Recall and explain components of ICT and computer systems.				
2. Apply number system concepts and complements in problem solving.				
3. Understand representation of numbers and characters in computers.				
4. Apply algorithms and flowcharts for solving problems.				
5. Understand computer hardware and software fundamentals.				
6. Describe networking fundamentals and communication technologies.				
Prerequisites: None				
SYLLABUS				
UNIT/Module	CONTENT	HOURS	CO Mapping	COGNITIVE LEVEL
I.	Introduction to ICT: Definition, ICT components, ICT vs IT, tools, applications, advantages, disadvantages, social and economic impact.	6	CO1	K1-K2 (Remember/Understand)
II.	Number Systems and Codes: Binary, Octal, Decimal, Hexadecimal systems, weighted & non-weighted codes, complements.	6	CO2	K3 (Apply)
III.	Representation of Numbers and Characters in computers.	6	CO3	K2 (Understand)
IV.	Problem Solving: Data and Information concepts, algorithms, and flowcharts.	6	CO4	K3 (Apply)
V.	Computer Hardware and Software fundamentals.	6	CO5	K2 (Understand)
VI.	Networking fundamentals: LAN, MAN, WAN, Internet,	9	CO6	K2 (Understand)

	DNS, WWW, servers, clients, transmission media.			
Text Books				
1. Computer Fundamentals – P.K. Sinha.				
2. Fundamentals of Computers – V. Rajaraman				
3. Digital Logic and Computer Design – M. Morris Mano				
4. Data Communications and Networking – B. Forouzan				
Suggested readings				
1. Information and Communication Technology in Organizations: Adoption, Implementation, Use and Effects – Bouwman et al.				
Web Resources				
1. NPTEL lectures and standard ICT tutorials available through educational portals.				
Evaluation		Theory		
		CIA: 12		
		Attendance: 3		
		Semester Exam: 35		
Paper Structure for Theory Semester Exam Module: Answer 5 questions out of 7 questions; each question carrying 7 marks.				

Course outcomes (COs) and Cognitive Level Mapping

COs	CO Description	Cognitive levels
CO1	Recall and explain ICT components and computer systems.	K1-K2 (Remember / Understand)
CO2	Apply number system operations and complements.	K3 (Apply)
CO3	Understand number and character representation.	K2 (Understand)
CO4	Apply algorithms and flowcharts for problem solving.	K3 (Apply)
CO5	Understand hardware and software fundamentals.	K2 (Understand)
CO6	Describe networking and communication fundamentals.	K2 (Understand)