GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering
Subject Code: 3170627

Semester VII
SUBJECT NAME: ICT for Development

Type of course: Undergraduate

Prerequisite: --

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P	C	Theory Marks		Practical Marks		
				ESE (E)	PA (M)	ESE (V)	PA (I)	
3	0	0	3	70	30	00	00	100

Syllabus:

Sr. No.	Content	Total Hrs
1	**Physical Network** Basics of Computer network, Ethernet, Fiber Optics, switching -- packet, circuit, routers, switches - managed, unmanaged	4
2	**Communication Network** Various Network Topology - Star, Ring, Mesh, etc, Concepts of LAN, WAN, MAN, IP addressing, Class A, Class B and Class C addresses, Subnet, Proxy, OSI layer, Basics of Layered Protocol, Firewall and its importance, Introduction and usage of GIS, RFID technology, Introduction to wireless networks and Mobile network	12
3	**Storage and Servers** Primary and Secondary storage, Cloud technology, mail server, data server, Concept of Data centers	4
4	**Software and applications** What is Operating Systems, ERP, CRM, Service Architecture introduction — Concepts of SaaS, PaaS, IaaS	4
5	**Introduction to Smart Infrastructure** Types of Sensors, How sensor works?, Moisture sensor, tilt sensor, smoke sensor, Temperature Sensor, Pressure Sensor, Level Sensor Fibre Optic Sensors etc,, Basics of Internet of Things (IoT), Concept of Smart Home, Smart Meter, Smart Mobility, Smart Public Safety, Smart Sanitation, Smart Security and Surveillance.	12
6	**Introduction to Virtualization** Concepts of Virtual Machine, Hypervisor, Para-Virtualization, Hardware-level virtualization, Operating System level virtualization	3
7	**AR-VR Technology for Development** Basics of Augmented Reality and Virtual Reality, AR in navigation, AR in Search Engine, etc.	3

Course outcomes: Students will be able to

1. Understand the basics of Information and communication technology.
2. Explore the applications of ICT in infrastructure

3. Analyse and exploit the merits of ICT to establish more effective infrastructure
4. Emerging trends and technologies of IoT, Augmented and Virtual reality for development.

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
30	**35**	**5**	**0**	**0**	**0**

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Course outcomes: Students will be able to

Sr. No.	CO statement	Marks % weightage
CO-1	Understand the basics of Information and communication technology.	30%
CO-2	Explore the applications of ICT for development	30%
CO-3	Analyse and exploit the merits of ICT to establish more effective infrastructure	20%
CO-4	Emerging trends and technologies of IoT, Augmented and Virtual reality for development.	20%

Text and References:

- Online reference material for topics mentioned in syllabus