

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT**COURSE CURRICULUM****Course Title: Fundamental of Information Technology
(Code: 3321601)**

Diploma Programmes in which this course is offered	Semester in which offered
Information Technology,	Second Semester

1. RATIONALE

Now a days, Information technology is the driving force behind the activities happening in our day to day life. Use of Information technology in Personal or professional activities has become ubiquitous. Central theme of offering this course is to educate new entrant IT technicians to identify, setup and use resources, structures and applications of the available infrastructure.

2. LIST OF COMPETENCIES

Identify the IT infrastructure components, use available resources, their structure and applications to add new peripherals to computers, Troubleshoot Operating system, Setup Internet connection, share resources like Printers, Scanners and understand social and ethical impact of IT.

3. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks
L	T	P		Theory Marks		Practical Marks		
L	T	P	C	ESE	PA	ESE	PA	50
0	2	2	4	00	00	20	30	

Legends: **L**-Lecture; **T** – Tutorial/Teacher Guided Student Activity; **P** - Practical; **C** – Credit;; **ESE** - End Semester Examination; **PA** - Progressive Assessment.

4. DETAILED COURSE CONTENTS

Unit	Major Learning Outcomes	Topics and Sub-topics
Unit – I	<p>1a. Differentiate Data, Information and Knowledge.</p> <p>1b. Understand Ethical and social issues in IT infrastructure.</p>	<p>1.1 Information Technology: Understanding the need of Information, Data, Knowledge, Difference between Data, Information and Knowledge.</p> <p>1.2 Benefits of IT infrastructure, Ethical issues : Plagiarism, Use of License Software, copyright infringement, Intellectual property Rights, its impact on IT.</p> <p>1.3 IT Infrastructure Components: Computer Hardware, Operating System, Software, Network components.</p>
Unit– II	<p>2a. Understand functionality of computer hardware.</p> <p>2b. Classify different types of machines and peripherals.</p>	<p>2.1 Anatomy of computers: Motherboard, CPU, SMPS, Expansion slots, Drives, Storage devices</p> <p>2.2 Input devices: Keyboard, Mouse, Pen, Touch Screen, Scanners, Touch screen.</p> <p>2.3 Output devices: Monitors, LCD, LED, Printers, tablets.</p> <p>2.4 Memory: RAM, ROM, Cache, Auxiliary Memory, HDD, CD, DVD, and USB drives.</p>
Unit– III	<p>3a Differentiate among different types of software</p> <p>3b Identify Operating systems,</p> <p>3c. Hands on experience on MS-Access.</p>	<p>3.1 Types of software: System software, application software, Operating system, Utility software.</p> <p>3.2 Operating system: Windows :Desktop, Control Panel, Driver installation, create users, rename computer, manipulate taskbar, power management, screensaver, Install new peripheral.</p> <p>3.3 System Software: Compiler--Turbo C, Borland C, sample program, Interpreter—definition.</p> <p>3.4 Application software : MS Office, installation, create shortcuts on desktop,</p> <p>3.5 Database: MS Access, create access Database, create table.</p>
Unit– IV	<p>4a Identify different types of computer networks.</p> <p>4b Identify different network devices.</p>	<p>4.1 Network setup elements like resource sharing, file sharing, common Storage.</p> <p>4.2 LAN, MAN, WAN, Internet, lay out of STAR, BUS and RING topology.</p> <p>4.3 Networking infrastructure: Repeater, Bridge, Hub, Switch, Router, Firewall, Gateway, NIC, Cables, MODEM.</p>

Unit	Major Learning Outcomes	Topics and Sub-topics
Unit-V	<p>5a. Identify different categories of Internet connections.</p> <p>5b. Use Search engines.</p> <p>5c. Use Internet for applications like e-mails, social networks, voice calls.</p> <p>5d. Identify different threats to IT infrastructure and learn remedies to mitigate threats.</p>	<p>5.1 Internet basics: Dial up Connection, DSL, Leased connectivity, Wi-Fi Connection, Browsers: IE, Firefox, Chrome.</p> <p>5.2 Protocols : http, https, www, IP, setting up Internet connection on DSL, setting up Internet on local network.</p> <p>5.3 DNS:types with examples</p> <p>5.4 Search engines : Google, yahoo, bing: search images, maps, news, search content using Different criteria.</p> <p>5.5 Applications of Internet : www, mail, news, Chat, social networking.</p> <p>5.6 Threats to IT infrastructure : Physical, Access level : password breaks, hacking, web based threats like weak passwords, social engineering, pirated software, unethical websites, Malicious programs, infrequent updates, protecting and mitigating threats : Use of Anti Virus software, scanning computer regularly, updating anti Virus.</p>

5. SUGGESTED SPECIFICATION TABLE WITH HOURS & MARKS (LAB Course)

Not Applicable as this subject is non theory.

6. SUGGESTED LIST OF EXPERIMENTS

The experiments should be properly designed and implemented with an attempt to develop different types of skills leading to the achievement of the competency -.

S. No.	Unit No.	Suggested Experiments, Tutorials
1	I	<p>1.1 Identify hardware components of IT infrastructure</p> <p>1.2 Understand the ethical use of IT infrastructure.</p> <p>1.3 Differentiate among Data and Information.</p> <p>1.4 Find out share ware or freeware Plagiarism detection software.</p>
2	II	<p>2.1 Classify different Peripherals, list their usage and write a brief Note on any 3 input devices.</p> <p>2.2 Identify any three output devices of your computer laboratory and Write a brief note on each.</p> <p>2.3 Identify Motherboard, CPU, SMPS, Expansion slots, Drives, Storage devices.</p>

		2.4 List different types of memories and explain each in brief.
3	III	3.1 Using control panel add new application software. 3.2 Using administrative tools shrink the primary partition. 3.3 Identify System and application software. 3.4 Create users with full control, limited control. 3.5 Install and use MS-Office, MS-Access. 3.6 Use screen savers and energy management in Windows.
4	IV	4.1 Identify and compare different network components, draw a neat Layout of network setup of your laboratory. 4.2 Setup a computer with proper IP and subnet for a local Network. 4.3 Find an IP address, Network mask, Computer Name in local Network. Rename the computer name with your own name.
5	V	5.1 Setup a connection with proper IP, subnet, and gateway Address to use Internet on local network. 5.2 Search Google for Information technology basic course ware ppt's And pdf files. Use Google translate to translate content from one Language to another. 5.3 Use Google maps and find out location of your institute. 5.4 Apply updates to anti-virus software and download new Definitions. 5.5 Create a group mail, add class mates to group mail and send them Welcome e-mail. 5.6 Learn to use safe passwords, understand ethics of IT, 5.7 Install an Anti-Virus software in your computer, Scan all the Drives using quick and full options. Setup the software for Continuous updates. 5.7 List different types of threats to IT infrastructure and note each One in brief.

7. SUGGESTED LIST OF PROPOSED STUDENT ACTIVITIES

Following is the list of proposed student activities like: course/topic based seminars, internet based assignments, teacher guided self learning activities, course /library/internet/lab based mini-projects etc. These could be individual or group-based.

7.1 Students should prepare a presentation on Ethical use of IT infrastructure and social networks based on the accumulated knowledge.

8. SUGGESTED LEARNING RESOURCES

A. List of Books

S.No.	Author	Title of Books	Publication
1	Turban, Rainer	Introduction to Information Technology.	Wiley
2	Dennis P. Curtin, Kim	Information Technology	Tata Mcgraw Hill

S.No.	Author	Title of Books	Publication
	Foley		

B. List of Major Equipment/ Instrument

1. Computers with licensed OS/Open source system software, licensed application software, Latest Anti-Virus software.
2. Sufficient Internet Bandwidth.
3. Simulators/Kits for Network activity demonstration.

C. List of Software/Learning Websites

<http://bcs.wiley.com/hebcs/Books?action=index&itemId=0471347809&itemTypeId=BKS&bcsId=1918>

9. Course Curriculum Development Committee.**Faculty members from Polytechnics**

1. **Mr. P.K.FARUKI**, Lecturer, Information Technology Department, Government Polytechnic, Ahmedabad
2. **Mr. Nandu Fatak**, Lecturer, Information Technology Dept. Government Polytechnic Ahmedabad

Coordinator and Faculty members from NITTTR, Bhopal