AC – 20/04/2024
Item No. – 6.6 Sem. I (2a)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of OE	
Board of Studies in Information Technology	
UG First Year Programme	
Semester	**I**
Title of Paper	**Credits 2/ 4**
I. IT_Fundamentals of Computers (Open Elective)[OE]	**2**
From the Academic Year	**2024-2025**

Name of the Course: IT_Fundamentals of Computer

Sr.No.	Heading	Particulars
1	**Description the course:**	This course is designed to aim at imparting basic level knowledge about computer, input output devices and memory.
2	**Vertical:**	**Open Elective**
3	**Type:**	Theory
4	**Credits:**	2 credits (1 credit = 15 Hours for Theory or 30 Hours of Practical work in a semester)
5	**Hours Allotted:**	30 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives (CO):** **CO 1.** To understand the basic concepts of computer **CO 2.** To understand the fundamentals of hardware, software and programming **CO 3.** To understand the concepts of operating system and internet **CO 4.** To familiarize the student with the basic taxonomy and terminology of computer networks	
8	**Course Outcomes (OC):** **OC 1.** Learners will be able to explain the needs of hardware and software required for a computation task. **OC 2.** Learners will be able to understand the need of primary and secondary storage **OC 3.** Learners will be able to understand the concepts of operating system, networking and internet **OC4.** Learners will be able to understand basic network topologies	
9	**Modules: -** **Module 1:**	
	1.Computer Basics Introduction to Computers: Definition of computer, characteristics of a Computer, History of computers, Generation of Computers. Classification of computers-analog, digital and hybrid. Algorithms, Problem solving using computers **2.Input/output Units:** Input Devices-Keyboard, Mouse, Scanner, OMR, OCR, Barcode reader, Joystick, Tracker ball, Touch screen, MICR, Output devices-monitor-different types, Printers-Impact and Non-Impact printers, plotter **3.Computer Memory:** Computer Memory: Elementary Concepts of Sequential and Random Access, Primary Storage Devices, RAM, ROM, Types of ROM-PROM, EPROM, EEPROM. Secondary Storage Devices- Magnetic Disk,	

	Magnetic Drum, Magnetic Tape, Hard Disk, CDROM, DVD, Pen drive. **4.Computer Languages:** Why programming Language? Assembly Language, Higher Level Programming Languages, Compiling High Level Language Program.	
	Module 2:	
	1. Basics of operating systems: Generations, Types, Structure, Services, System Calls, System Boot, System Programs, Protection and Security Memory management**:** Main Memory, Swapping, Contiguous Memory Allocation, Paging, Structure of Page Table, Segmentation, Virtual Memory, Demand Paging. **2. File system interface:** File Concept, Access Methods, Directory Structure, File System Structure, Allocation Methods, and Free-Space Management. Basic DOS (Disk operating system) commands**:** cd, dir, copy, mkdir, clean etc. Basics of windows operating system, working with utilities of windows operating system like notepad, paint, word pad etc. **3. Computer Network:** Introduction to Data Communication System and Its Components, Networks, types of Connection and Topologies, LAN, MAN, WAN, et al. Network Models- OSI Models, Layers in OSI Models, TCP/IP protocol. **4. Internet and WWW**: Introduction to Internet and its Applications, Connecting to the Internet, Client/Server Technology, Internet as a Client/Server Technology, Email, Video-Conferencing, Internet Service Providers, Domain Name Server, Internet Address, Internet Protocols (IP. TCP, HTTP, FTP, SMTP, POP, Telnet), Introduction to Intranet, Internet vs. Intranet vs. Extranet, Advantages & Disadvantages of Intranet. World Wide Web and Its Evolution, Architecture of Web. Uniform Resource Locator (URL), Browsers: Internet Explorer, Netscape Navigator, Opera, Firefox, Chrome, Mozilla.	
10	**Text Books** 1 Rajaraman. V: Fundamentals of Computers, Prentice Hall India,2004 2 Peter Norton's, *"Introduction to Computers", 7th* Edition, Tata McGraw-Hill, 2010, ISBN: 9780070671201 3. Forouzan, B. A., &Fegan, S. C. New York: "Data communications and networking", McGraw-Hill Higher Education, 2007.	
11	**Reference Books** 1. Computer Basics Absolute Beginner's Guide By Michael Miller and Mike Miller 2. Operating System Concepts, Silberschatz, Ninth Edition, Willey Publication	
12	**Internal Continuous Assessment: 40%**	**Semester End Examination: 60%**
13	**Continuous Evaluation through:** Class test of 1 of 15 marks Class test of 2 of 15 marks Average of the two: 15 marks Quizzes/ Presentations/ Assignments: 5 marks	**Semester End Examination (30 Marks)– 1 hr duration**

	Total: 20 marks	
14	**Format of Question Paper:** (**Semester End Examination : 30 Marks. Duration:1 hour)** Q1: Attempt any two (out of four) from Module 1 (15 marks) Q2: Attempt any two (out of four) from Module 2 (15 marks)	

Sign of Chairperson
Dr. Mrs. R. Srivaramangai
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