डॉ. बाबासाहेब आंबेडकर मराठवाडा विद्यापीठ, औरंगाबाद

परिपत्रक क्रमांक/एस.यु./विज्ञान/अभ्यासक्रम/७४/२०१४

या परिपत्रकाद्वारे सर्व संबंधीतांना सुचित करण्यात येते की, विज्ञान विद्याशाखेने शिफारस केल्यानुसार बी. एस्सी. / एम. एस्सी. प्रथम व द्वितीय वर्षाच्या सुधारित अभ्यासक्रमास आणि बी. एस्सी. प्रथम वर्षाच्या अभ्यासक्रमात किरकोळ बदल करण्यास विद्यापरिषदेच्या वतीने मा. कुलगुरु यांनी, त्यांना प्राप्त असलेल्या विशेष अधिकार महाराष्ट्र विद्यापीठ अधिनियम-१९९४ कलम १४(७) अन्वये मान्यता दिलेली आहे. त्या अनुषंगाने सुधारीत तयार केलेल्या अभ्यासक्रमाची प्रत या परिपत्रकासोबत आपल्या पुढील कार्यवाहीसाठी पाठविण्यात येत आहे.

[1]	B.Sc. Physics	Semester-III & IV,
[2]	B.Sc. Chemistry	Semester-III & IV,
[3]	B.Sc. Botany	Semester-III & IV,
[4]	B.Sc. Zoology with minor changes	Semester-I & II,
[5]	B.Sc. Zoology	Semester-III & IV,
[6]	B.Sc. Fisheries	Semester-III & IV,
[7]	B.Sc. Electronics (Opt.)	Semester-III & IV,
[8]	B.A./B.Sc. Mathematics	Semester-III & IV,
[9]	B.Sc. Computer Science	Semester-I & II,
[10]	B.Sc. Information Technology	Semester-I & II,
[11]	B.C.A.	Semester-I & II,
[12]	B.Sc. Computer Science(Opt.)	Semester-I & II,
[13]	B.Sc. Information Technology(Opt.)	Semester-I & II,
[14]	B.Sc. Computer Application(Opt.)	Semester-I & II,
[15]	B.Sc. Computer Maintenance(Opt.)	Semester-I & II,
[16]	B.Sc. Biotechnology (Progressively)	Semester-I to VI,
[17]	B.Sc. Biotechnology (Opt.) (Progressively)	Semester-I to IV,
[18]	B.Sc. Sericulture Technology	Semester-I & II,
[19]	B.Sc. Networking Multimedia	Semester-III & IV,
[20]	B.Sc. Bioinformatics	Semester-I & II,
[21]	B.Sc. Hardware & Networking	Semester-I & II,
[22]	B.Sc. Animation	Semester-I & II,
[23]	B.Sc. Dairy Science & Technology	Semester-III & IV,
[24]	B.Sc. Biochemistry	Semester-III & IV,
[25]	B.Sc. Analytical Chemistry	Semester-III & IV,
[26]	B.Sc. Textile & Int. Decoration with minor changes	Semester-I & II,
[27]	B.Sc. Textile & Int. Decoration	Semester-III & IV,
[28]	B.Sc. Home Science with minor changes	Semester-I & II,
[29]	B.Sc. Home Science	Semester-III & IV,
[30]	B.Sc. Agro.Chem. & Fertilizers	Semester-III & IV,

..2..

[31]	B.Sc. Geology	Semester-III & IV,
[32]	B.A. Statistics with minor changes	Semester-I & II,
[33]	B.A. Statistics	Semester-III & IV,
[34]	B.Sc. Statistics with minor changes	Semester-I & II,
[35]	B.Sc. Statistics	Semester-III & IV,
[36]	B.Sc. Industrial Chemistry	Semester-III & IV,
[37]	B.Sc. Horticultural	Semester-I & II,
[38]	B.Sc. Dry land Agriculture	Semester-I & II,
[39]	B.Sc. Microbiology	Semester-III & IV,
[40]	M.Sc. Computer Science	Semester-I to IV,
[41]	M.Sc. Information Technology	Semester-I to IV.

हा सुधारीत व नवीन तयार केलेल्या अभ्यासक्रमाचा आराखडा शैक्षणिक वर्ष २०१४-१५ करिता मर्यादित असेल व विद्यापरिषदेच्या अंतिम मान्यतेनंतर हे परिपत्रक नियमित ठेवण्याबाबत या कार्यालयाद्वारे नवीन परिपत्रक पारीत करण्यात येईल. तसेच सुधारीत व नवीन तयार केलेल्या अभ्यासक्रमाची प्रत विद्यापीठाच्या संकेतस्थळावर उपलब्ध आहे.

करिता, या परिपत्रकाची सर्व संबंधितांनी नोंद घ्यावी.

विद्यापीठ प्रांगण,
औरंगाबाद-४३१ ००४.
संदर्भ क्र.एस.यु./सा.शा./सबवि /२०१३-१४/
६५९९-७०२
दिनांक :- २७-०५-२०१४.

संचालक,
महाविद्यालये व विद्यापीठ
विकास मंडळ.

****

या परिपत्रकाची एक प्रत :-

१) मा. परिक्षा नियंत्रक, परिक्षा विभाग,
२) मा. प्राचार्य, सर्व संलग्नीत महाविद्यालये,
३) संचालक, युनिक यांना विनंती करण्यात येते की, सदरील अभ्यासक्रम विद्यापीठाच्या संकेतस्थंळावर उपलब्ध करुण देण्यात यावेत.
४) संचालक, ई-सुविधा केंद्र, विद्यापीठ परिसर,
५) जनसंपर्क अधिकारी, मुख्य प्रशासकीय इमारत,
६) कक्ष अधिकारी, पात्रता विभाग, मुख्य प्रशासकीय इमारत,
७) कक्ष अधिकारी, बी.ए. / बी.एस्सी./ बी.सी.एस./एम.एस्सी. विभाग, परीक्षा भवन,
८) अभिलेख विभाग, मुख्य प्रशासकीय इमारती मागे,
डॉ. बाबासाहेब आंबेडकर मराठवाडा विद्यापीठ, औरंगाबाद.

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NAAC 'A' Accredition

Dr.Babasaheb Ambedkar Marathwada University

Aurangabad-431004

SYLLABUS OF

B.Sc.First Year

Hardware & Networking

Semester-I & II

Three Year Degree Course

(Effective From :2014-15)

हे ज्ञानिची पवित्रता | ज्ञानीचि आथि ||

Dr. Babasaheb Ambedkar Marathwada University

Aurangabad-431004.

Tel.No. : 0240-2403400/431, Fax:0240-2403113

Website : www.bamu.ac.in,

http://bamua.digitaluniversity.ac.in

Dr. Babasaheb Ambedkar Marathwada University.

Appendix 'A'

A Candidate shall be admitted to the I year of the B.Sc.(Hardware & Networking) degree course only if he/she satisfies the following condition:

1. He/ She must have passed the higher secondary (multipurpose) examination conducted by H.S.C. board Government of Maharashtra with science / technical subjects Or an Examination of any statutory University and Board recognized as equivalent thereto.

   OR

   He/She must have passed examination prescribed at the end of second year of the junior college conducted by the H.S.C. board, Government of Maharashtra with English, Second language, Physics, Chemistry, Mathematics and or Biology or one of the technical subjects prescribed at the said examination as the optional or elective subjects or an examination recognized as equivalent thereto.

   OR

   Candidate having offered prescribed vocational course (MCVC) with Computer techniques/I.T./Electronics.

   OR

   Three years Diploma Course in engineering conducted by the board of technical Education, Maharashtra State.

2. He/ She must have passed at qualifying examination.

A candidate who has passed the B.Sc.(Hardware & Networking) examination of this university may be allowed to present himself subsequently at the degree examination in a subject or subjects other than those he has taken earlier provided that he puts in three years of attendance as a regular candidate for First, Second and Third year in the subject or subjects concerned excluding compulsory English, Second Language and remaining optional subject(s).

A candidate shall not be allowed to appear for such examination if he has passed the higher examination.

The Degree of Bachelor of Science (Hardware & Networking) shall be conferred on candidate who has pursued a regular course of study consisting of six semesters in the relevant subject as prescribed and has appeared at the end examination and passed under the credit based system in all the examination prescribed for the Degree course in the faculty.

The pattern of the examination and the scope is indicated in the syllabus.[Annexure B]

- ✉ The Number of students in a theory class shall not exceed 60.
- ✉ Maximum number of students in a batch for practical in first four semesters shall consist of 20 students and for fifth & sixth semester the batch shall consist of 15 students.
- ✉ The rules for admission to the subsequent (next) semesters will be the same as per the University guidelines.

- ✉ For Each course the concerned teacher should conduct Class tests after completion of 15 and 20 lectures.
- ✉ Final Examination will be conducted by the University based on the complete syllabus.
- ✉ Final Practical Examination will be conducted by the university and examiners will submit the mars in the prescribed format of students for practical examination to the university.

The Number of Teaching Staff & infra-structure required to run the course will be as follow:-

The graduation is very important phase in the life of our young students. The college responsibly is not only to deliver a quality syllabus based education, but also to motivate them to be a good healthy citizen. In this direction, the college must have sufficient facilities to run the course. A guideline is listed below. The College must have following minimum facilities:

Infrastructure:

1. One Class room to accommodate 60 students. (Approximately 250 sq.ft.)
2. A well equipped software Laboratory having a LAN system of 30 nodes and having internet connectivity with broad band. All legal software, antivirus software, firewall be available for smooth functioning of the laboratory.
3. Hardware laboratories having twenty microprocessor kits with add on cards as per their syllabus.
4. Staff room of 100 sq.ft. with one table and one Almeria for each faculty member.
5. One office space of 100 sq.ft. with appropriate furniture.

6. One lady room of 100 sq.ft. with attached toilet.
7. One reading room of 200 sq.ft. with seating arrangements for at least 30 people. The library may be accommodated in the library.
8. One copy of every text book among five student for each subject be available along with one copy of reference book as per the syllabus.
9. Library must subscribe for computer and scientific magazines. Appropriate general reading materials must be available for overall development of students.
10. An open space for sports activities. The college must be encouraged to have sport equipments.

Staff:

1. The head of the department in the scale of reader/Professor.
2. The minimum number of teachers must be appointed as per the work load. Per semester, the work load may be computed on the basis of theory classes, tutorials and practical class per batch. Minimum number of teachers to run the course must be five excluding the head. Teachers must be appointed by the university/UGC norms. The quality of the course is directly related to quality of teachers for the course.
3. There must be one clerk in the office to look after administrative work. The placement of all staffs must be maintained properly.
4. One qualified librarian

✉ An appropriate number of class IV employees.

CODE NO.	TITLE OF PAPER	MAXIMUM MARKS		
FIRST SEMESTER		**UNIVERSITY EXAMINATION**	**Examination Duration Hrs**	**Theory / Practical (hrs/week)**
HW101-T	Fundamental of IT & Internet	50	2	3
HW102-T	Digital Electronic and PC Hardware	50	2	3
HW103-T	Operating systems I	50	2	3
HW104-T	Electronics Instruments and Measurements	50	2	3
HW105-T	Personal Computer System Architecture	50	2	3
HW106-T	Personality Development and Communication Skills I	50	2	3
HW107-P	Practical Based on HW102-T	50	1 ½	6
HW108-P	Practical Based on HW103-T	50	1 ½	6
HW109-P	Practical Based on HW104-T	50	1 ½	6
HW110-P	Practical Based Office Suite	50	1 ½	6

HW101-T	Fundamental of IT & Internet

Introduction: Characteristics of Computers; The Evolutions of Computers; Computer Generations, Classification of computers based on size and application like Notebook Computers; Personal Computers (PCs); workstations; Mainframe Systems; Super Computers; Clients and Servers etc.

Basic Computer Organization: Block diagram of Computer, Interrelationship between different units : Input Unit; Output Unit; Storage unit; Arithmetic Logic Unit; Control unit; Central Processing unit; The System Concept

Processor and Memory: The Central Processing Unit (CPU) The Control Unit, the Arithmetic Logic Unit (ALU), Instruction Set, Registers, Processor Speed, Types of Processors; Main Memory : Memory Organization, RAM, ROM, PROM and EPROM, Cache Memory.

Secondary Storage Devices: Sequential and Direct-Access Devices; Magnetic Tape, Hard Disk, Optical Disks : Basic principles of Operations, Advantages and limitations;

Types of Software: system Software, Application Software; Overview (function) of different types of system softwares :Operating Systems, Language Translators, utility Programs, and Communication Software. Overview of different types of Application Software: word Processing, spreadsheet, Database, graphics Personal assistance, Education, entertainment Software.

Input-output Devices: Characteristics of I/O devices. Input Devices (Keyboard Devices, Point- and –Draw Devices, Data scanning Devices, Digitizer, electronic Card reader, Voice Recognition Devices, Vision-Input System); output Devices (Monitors, printers, plotters, Screen Image Projector, Voice Response System).

Computer languages: Analogy with Natural Languages; Machine Language (Advantages and Limitations Of Machine Language); Assembly Language (assembler, Advantages Of Assembly Language over Machine Language, Limitations Of Assembly Language, High Level Language (Compiler, Linker, Interpreter, Advantages and Limitations of High Level Languages); Object Oriented Programming Languages; Characteristics of Good Programming Language; Selecting a Language for Coding and Application; Subprogram. application Software Packages: Word-Processing Packages(What it is?), Commonly Supported Package (What it is?, Commonly Supported features).

Network : Definition, types, objectives. Internet : Definition, Application domain, features. Impact of IT in different domains like railways, Airline, Banking, Insurance, Inventory Control, Hotel Management, Education, Video games, mobile phone, E-commerce, weather forecasting, Scientific application, Multimedia, entertainment.

REFERENCES

1. D. H. Sanders, “Computers Today”, McGraw Hill, 1988.
2. Satish Jain , " Information Technology", BPB, 1999.
3. David Cyganski, John A. Orr, “ Information Technology Inside and Outside” Pearson Education, 2002.

4. V. Rajaraman, “Fundamentals of Computers” (2nd edition), Prentice Hall of India, New Delhi, 1996.

1. B. Ram, “Computer Fundamentals”, Wiley, 1997.
2. Chetan Srivastva, "Fundamentals of Information Technology", Kalayani Publishers, 2003.

HW102-T	Digital Electronic and PC Hardware

1. Number Systems and Arithmetic Decimal Number System & Binary Number System Decimal to Binary conversion(Double-dabble methodonly) Binary to Decimal Conversion. Binary Arithmetic : Binary addition, subtraction, multiplication & division Hexadecimal number system , Hexadecimal to binary, binary to Hexadecimal, Hexadecimal to decimal conversion Hexadecimal arithmetic: Addition, subtraction, multiplication & division Binary subtraction using 1' complement, 2's complement method.

2. Boolean Algebra and Logic Gates Postulates of Boolean Algebra Theorems of Boolean Algebra: Complementation , commutative, AND, OR, Associative,Distributive,Absorption laws , De morgan's

Theorems Reducing Boolean expressions Logic Gates : AND, OR, NOT, Ex-OR, Ex-NOR NAND as Universal building block Logic diagrams of Boolean expressions Boolean expressions for logic diagrams

3. Minimization Techniques Introduction , Minterms and Maxterms K-Map, K-map for 2 variables K-map for 3 variables K-map for 4 variables 4. Combinational and Arithmetic Logic Circuits Half Adder & Full Adder Binary parallel Adder

Half Subtractor, Full Subtractor Adder/Subtractor in 2's complement system

BCD to Decimal decoder 2 : 4 demultiplexer 4 line to 1 line multiplexer

5. Flip Flops Introduction : RS FFClocked RS FF, D FF Triggering, preset and clear JK FF , T FF , Race around condition Master slave FF

6. Counters Introduction : Asynchronous/ ripple counter Modulus Counter , MOD-12 counter Synchronous counter : Synchronous serial & synch parallel counter BCD counter Ring counter Johnson counter

7. Shift Registers

Introduction, Buffer register Serial- in serial -out Serial-in parallel-out Parallel-in serial out, parallel-in paralle-out

Core Reference:

1. Digital Electronics and Micro-Computers – R.K.Gaur , Dhanpat Rai Publication

Additional Reference:

1. Digital Electronics and Logic Design – N.G.Palan, Technova Publication

HW103-T	Operating systems I

Introduction to Operating System : needs, Objectives, services.

Operating System Classification(definition, basic concepts, advantages and limitations) – single user, multi user, simple, batch processing, multiprogramming, multitasking, parallel systems, distributed systems, real time systems.

Process management : process concept, process control block, process scheduling.

Memory management : Logical versus physical address space, swapping, memory management with fixed and variable number of tasks, paging and segmentation technique, concepts of virtual memory (Overview only)

File Management : file concept, access methods, directory structure, file protection, allocation methods : contiguous, linked and index allocation.

WINDOWS XP: Installation of Windows XP, My Computer, Recycle Bin, Various Control panel options, Basic elements of Windows, Print Manager, Window Applications, accessories etc.

UNIX : Introduction, History, Features, Comparison with Windows, file system, Setting File Permission, Unix commands, super user.

Books:

1. Silberschatz and Galvin, "Operating System Concepts", Sixth edition, Addison-Wesley publishing, Co., 1999.

References:

1. Hansen, Per Brinch, "Operating System Principles", Prentice-Hall. 1984.
2. Infosys Campus Connect Foundation Program Volume:1 – 3, Education & Research Department, Infosys Technologies Ltd , Bangalore.

HW104-T	ELECTRONICS INSTRUMENTS AND MEASUREMENTS

Basic of measurements:- Review of performance specification of instruments- accuracy, precision, sensitivity, resolution range etc. Error in measurement and loading effects.

Units, Measurements and Conversion

Need for measurement related to electronics (resistance, capacitance, inductance, voltage, current, frequency, time, power, energy, wavelength) and their units (Milli, micro, kilo, nano, pico, mega, gega etc.) and conversion. Concept of pixel, resolution.

Measuring instruments:- Working principles and construction of ammeters and voltmeters (moving coil and moving iron type), difference between ammeter and voltmeter, extension of their range and simple numerical problems. Principle and working of: Wattmeter (dynamo-meter type).

Multimeter:- Construction & various functions of multimeter & the various measurements that are made using multimeter, Specification of multimeter & their significance and its limitations.

Electronic voltmeter:- Advantages over conventional multimeter for voltage measurement with respect to input impedance and sensitivity.

Digital Voltmeter & Digital Multimeter:- Block diagram of DVM (digital voltmeter) & Digital Multimeter, Specification of digital multimeter.

Basics of Electricity and Magnetism

Coulomb's law and dielectric constant, relation between electric field, flux, intensity potential, and potential difference, basics of magnetism, magnetic domain, non-magnetic and ferro-magnetic materials, self and mutual induction, electromagnetic waves and propagation of electromagnetic waves in atmosphere, electromagnetic spectrum.

Digital Storage Oscilloscope (DSO):- Block diagram & principle of working; Comparison between Analog and Digital Storage Oscilloscope.

Signal Generators And Analysis Instruments: - Attenuators and its various types, Radio frequency (RF) oscillators: Colpitt's Oscillator, Hartley Oscillator, Wave Analyser, Spectrum Analyser.

Transducer: - Classification of transducers, qualitative treatment of Strain Guage, Various types of transducers: Capacitive transducer, Inductive transducer, Oscillation transducer, Piezoelectric transducer. Linear Variable Differential Transducer (LVDT), Thermistors and its applications, Thermocouples.

HW105-T	PERSONAL COMPUTER SYSTEM ARCHITECTURE

Semiconductor Devices:

Energy bands in solids, Intrinsic and extrinsic semiconductors, P type and N type semiconductors, P-N junction diodes, zener diodes, LED, photo transistor, solar cells, introduction to rectifiers and regulators

REFERENCES

1. "Electronics Measurement and Instrumentation" by AK Sawhney, Dhanpat Rai and Sons, New Delhi.
2. "Electronics Instrumentation" by JB Gupta, Satya Prakashan, New Delhi.
3. "Elements and Electronic Instruments and Measurement", Carr Pearson.
4. Malvino A.P and Leach ,"Digital Principles and Application",TMH.
5. Morris Mano ,"Computer System Architecture", PHI.

Principles of Computer Design: Types of computer organization, Classification of computer architectures, Non-von Neumann machine: Flynn's classification, Classification of Computer architecture design,

Register Transfer and Microoperations: Register transfer language, Bus and memory transfer, arithmetic mocrooperations, Logic microoperations, shift microoperations.

Basic Computer Organization: Basic Components of a digital computer, instruction codes, Computer registers, Computer instructions, Timing and control, Instruction cycle, Input-output and interrupt.

MICRO-PROGRAMMED CONTROL: Machine language, Assembly Language, Assembler, Control Memory, Address Sequence & Design of Control Unit.

CENTRAL PROCESSING UNIT: Introduction, general register organization, Stack organization, Instruction formats, Addressing modes, Data transfer, Program control

RISC/CISC: Introduction to RISC/CISC, design characteristics

Input -Output Organization: Peripheral Devices, Input-Output interface, Different modes of communication : synchronous, asynchronous, simplex, duplex, serial and parallel. Data transfer modes : Priority Interrupt, Direct Memory Access (DMA). **Memory Organization:** Memory Hierarchy, Main Memory, Auxillary Memory, Associate Memory, Cache Memory, Virtual Memory.

REFERENCES:

1. William Stallings, "Computer Organisation and Architecture", 6th edition, Pearson Education , 2002.
2. A.S.Tannenbaum, “Structured Computer Organisation”, Prentice- Hall of India, 1999
3. M.M. Mano, “Computer System Architecture”, 3rd Edition,Prentice-Hall of India, 2002.

HW106-T	Personality Development and Communication Skills-I

UNIT – I

1. Concept of Communication Attributes of Communication Process of Communication Feedback

2. Objective of Communication Upward Communication Downward Communication Horizontal Communication

3. Method of Communication Verbal , Oral , Written

UNIT – II

4. Written Communication Punctuation marks, Capitals, Abbreviations Grammar: Parts of Speech, tenses, vocabulary building, reduction of sentence length, summarization, constructing para. CS of good communication Language of business writing

5. Oral Communication Speeches and Presentation Dialogues

UNIT – III (English Language Lab)

6. Listening Comprehension Listening and typing – Listening and sequencing of sentences – Filling in the blanks – Listening and answering the questions

7. Reading Comprehension and Vocabulary Filling in the blanks - Cloze Exercises – Vocabulary building – Reading and answering questions.

8. Speaking Phonetics: Intonation – Ear Training – Correct Pronunciation – Sound recognition exercises - Common Errors in English

Conversations: Face to Face Conversation -Telephone conversation – Role play activities (Students take on roles and engage in conversation)

Core Books

1. Business Communication , By urmila Rai & S.M.Rai. Himalaya Pub.

2. Communication Skill for Effective Management By Dr.Anjali Ghanekar. Everest Pub. House.

3. Developing Communication Skill By Krishna Mohan, Meera Banerji. McMillan

1. **HW107-P Practical Based on HW102-T**

   Any 10 Practical's based on digital electronics based on syllabus

2. **HW108-P Practical Based on HW103-T**

   Any 10 Practical's based on Syllabus

3. **HW109-P Practical Based on HW104-T**

   Any 10 Practical's based on Syllabus

4. **HW110-P Practical Based Office Suite**

   Any Ten practical Assignments based on each unit as per faculty directive

CODE	TITLE OF PAPER	MAXIMUM MARKS		
SECOND SEMESTER		UNIVERSITY EXAMINATION	Examination Duration Hrs	Theory / Practical (hrs/week)
HW201-T	Linux Administration I	50	2	3
HW202-T	Computer Peripherals and Maintenance	50	2	3
HW203-T	8086 Microprocessors	50	2	3
HW204-T	Programming in C	50	2	3
HW205-T	Windows Environment	50	2	3
HW206-T	Personality Development and Communication Skills II	50	2	3
HW207-P	Practical Based on HW201-T	50	1 ½	6
HW208-P	Practical Based on HW202-T	50	1 ½	6
HW209-P	Practical Based on HW203-T	50	1 ½	6
HW210-P	Practical Based on HW204-T	50	1 ½	6

HW201-T	Linux Administration I

Planning the Implementation: The purpose of the Machine, The Required Hardware, The Require Software allocation of Storage space, The Different Licensing Schemes, the basic Services, Comparing and selecting a Distribution, Compare Linux to other Operating system, The Linux Kernel Version Numbers obtaining Software. Resources for Maintenance and Operation, Advantage of Linux.

Installing Red Hat Linux: Starting the Red Hat Linux installer, Beginning the installation, Installation type, Disk partitioning setup, Disk setup, Boot loader configuration, Account configuration, Installing packages, Graphical interface configuration, Finishing first run configuration.

Navigating Linux at the Console: Understanding virtual consoles, Logging in a virtual console, working with the file system, Linux file system, Home directory, Current working directory, manipulating files and directories, Understanding permissions. Shutdown, reboot system.

Making the console work for you: Creating, Editing and Saving text files using vi, vi modes, inserting text, Quitting vi, moving the cursor, deleting text, copying and moving text, searching and replacing text, Using emacs to create text files, Grouping files for efficient file management, Searching files and directories quickly, Using pipes, Moving between multiple open applications. Opening, editing and closing an existing file, Cutting, copying and pasting files, Duplicating a file, Renaming, Deleting items, Changing file permissions, Creating a new directory, Manipulating files using drag and drop, Working with trash contents the Standard Linux file structure.

Introducing the Red Hat Desktop: GNOME and KDE Environment, Logging in to desktop, Launching applications, Using window controls, working with multiple windows, Understanding

virtual desktops, X window utilities ,changing font ,background ,managing files with GNOME and KDE .

Linux commands with their options, How linux commands work, wildcards, Shell Scripts assigning values to variable, if statement, loops, function various linux commands.

Reference Books:

1 Red Hat Enterprise Linux & Fedora Edition: The Complete Reference by Richard Petersen

2 A Practical Guide to Linux Commands, Editors, and Shell Programming by: Mark G. Sobell

HW202-T	Computer Peripherals and Maintenance

Monitors: Block diagram of monochrome monitors. Pixels and resolution, Sync section, Position video amplifier, Display basics, test mode and graphic mode, Display adapter cards, HGA, CGA,VGA, EGA and super VGA, How they fail, trouble shooting and elimination, maintenance chart, Monitor adjustments, size, brightness, focus etc, Fault in various sections of monochrome monitors, Block diagram of color monitors, basic color theory, faults in color section

Keyboards: Study of keyboards, types, interface 8048, Interconnection to PC, Common faults and diagnostics, Introduction to mouse on serial ports, Parallel port card, serial port card, integrated card, Joy stick, light pen, graphics table controller.

Printers: Types of printers (DMP, INKJET, LASER & LINE), Connecting printers to computers, Preventive maintenance of printers.

Memories: How memory works, Memory speed, access time, wait states, Types of memory, Dynamic and static memory, Cache memory, shadow RAM, ROM chips, Reading memory error messages, adding RAM, Tips on installing memory chips, Static and handling precautions.

Disk structure: Cylinders, heads, platters, tracks and sectors, structure of a disk.

Cluster Performance: Access time, seek time, latency period, data transfer rates, and interleave factors, hard disk controllers. Types of interface between controller and drives.

Hard disk software installation: Physical formatting, partitioning, high level formatting, Hard disk installation

Trouble shooting and adjustment .IDE controller card. CD-ROM drive:- CD drives mechanism installation of CD drive. Mastering advanced –drive technologies:- CD-ROM : SCSI\CD-R, CD-RW, DVD-ROM. Working Principals, types and installation of mouse, scanner and modem

Mouse: Circuit Diagram, Fault Finding, Repairing, Repairing MODEM, Circuit Diagram, Fault Finding, Repairing.

Repairing of Speakers, Fault Finding, Repairing and Repairing of Scanners.

Reference Books:

1 PC Systems, Installation and Maintenance, Second Edition by R. P. Beales

2 PC Upgrade & Repair Black Book by Ron Gilster

3 Inside the PC by Peter Norton’s

4 Hardware Trouble Shooting and Maintenance by B. Govinda Rajalu, IBM PC and Clones, Tata McGraw Hill 1991

HW203-T	8086 MICROPROCESSORS

UNIT – I

Introduction to Microprocessor and Microcomputer

Historical background, Microprocessor based personal computer system, Computer data formats

8086 Hardware specification

Microcomputer structure and operation, 8086 internal architecture, Introduction to programming 8086 : Prog.lang.

Addressing Modes

Data addressing modes, Program memory addressing modes, Stack memory addressing modes

Data Movement Instructions (Inst.related with 8086 only)

MOV revisited: Machine language,the op-code, MOD field, resister assignment, R/M memory addressing, special addr.mode , PUSH/POP, initializing stack ,Miscellaneous data transfer instructions: XCHG, LAHF & SAHF

Arithmetic instructions

Addition, subtraction and comparison,Multiplication and division, BCD and ASCII arithmetic

Logic instructions

Basic logic Instructions, Shift and rotate

Program control Instructions

The JUMP group ,LOOP , CALL & RET

Core Reference:

1. The Intel Microprocessors: Architecture, programming and interfacing –
By Barry B. Brey
2. Microprocessors and Interfacing : Douglas Hal

HW204-T	Programming in C

Program Structure: Data type, constant, variable, arithmetic expression, arithmetic operator, logical operator, input output statement, conditional statement, assignment statements, Header files & library files.

Control Structures: Introduction, Decision making with IF – statement, IF – Else and Nested IF, While and do-while, for loop, Break and switch statements, continue statements.

Functions: Introduction to functions, Global and Local Variables, Function Declaration, Standard functions, Parameters and Parameter Passing, Call – by value/reference, Recursion.

Arrays: Introduction to Arrays, Array Declaration and Initialization, Single and Multidimensional Array. Arrays of characters.

Pointers: Introduction to Pointers, Address operator and pointers, Declaring and Initializing pointers, Assignment through pointers, Pointers and Arrays.

Strings: Introduction, Declaring and Initializing string variables, Reading and writing strings, String handling functions, Array of strings.

Files: Introduction, File reading/writing in different modes, File manipulation using standard function types

Recommended books:

1 Programming in C by E. Balagurusamy

2 Let us C by Yashwant Kanitkar

3 Programming in C by Kernighan & Ritchie

HW205-T	Windows Environment

UNIT – I

Basic Windows Server 2008

Introduction, Installation, System Configuration, Storage Devices,

Network Configuration, Wide Area Networking, Local Security

Management, Security For Domain Members, Desktop Management,

Resource Management, Printer Management, Performance, Fault

Tolerance and Recovery

UNIT – II

Managing and Maintaining a Windows Server 2003 Environment Introduction to Windows

Server 2003,Managing Hardware Devices, Creating and Managing User Accounts, Managing

File Access, Managing Disks and Data Storage, Advanced File System Management

UNIT – III

Managing Printers, Using Group Policy, Server Administration, Monitoring Server

Performance, Managing Backups and Disaster Recovery, Administering Web Resources,

Windows Server 2003 Security Features

UNIT – IV

Implementing, Managing and Maintaining a Windows Server 2003 Network

Networking Overview, Configuring Network Protocols, TCP/IP Architecture, Dynamic Host Configuration Protocol, Manage and Monitor a DHCP Server, Name Resolution, Domain Name System, Windows Internet Naming Service, Internet Protocol Security (IPSec), Remote access, Internet Authentication Service, Routing, Security templates, Troubleshooting Windows Server 2003 networks

Recommended Books

1) Managing &maintaining a windowsserver 2003 environment -- By Beheler ann, L.J. Zacker, Microsoft Press

2)

MCSA/MCSE 70-291: Implementing, managing and maintaining a Microsoft Windows server 2003 Network Infrastructure:--- By Will Schmied

3) Mastering windows server 2008 networking foundations---By John paul Mueller.

HW206-T	Personality Development and Communication Skills II

UNIT – I

1. Communication with Media Written media of Communication: Letters, Notices, Minutes, Manual, Leaflet, Complaints & Suggestion, Job Application. Visual Media of communication: slide presentation, Pictures & Photographs, Posters & Advertisement. Non-Verbal Media of Communication

2. Written Communication: Reports Types of Report, characteristics of Good Report , Essential Requisites of Good Report-Writing, Planning the Report, Outlining Issues for

Analysis, Writing the Reports.

UNIT – II

3. Group Communication Problem of Group Communication- Meeting -types of meeting, Advantages & Disadvantages of Meeting, - Preparation for Meeting – conduct of a Meeting – Responsibility of participants.

4. Interview Purpose, Types of interviews – promotion, appraisal, exit, telephone. Employment or selection Interview : Candidate's preparation, Question commonly asked in interview, role of interviewer, Interviewer's preparation.

UNIT – III

5. Listening Comprehension Cassettes: "*Tiger's Eye*" Series.(vol. 1 & 2) , "*Twist in the Tail*" The Listening drill is to be given and question should be framed.

6. Reading Comprehension and Vocabulary Reading with proper pronunciation and ideal reading is to be recorded.

7. Speaking:

CIEFL' Spoken English exercises part one and two. Drilling : Proper Pronunciation of word and sentences

Core Books

1. Business Communication,By urmila Rai & S.M.Rai. Himalaya Pub.(Tenth Ed.)

2. Communication Skill for Effective Management By Dr.Anjali Ghanekar.Everest Pub. House.

Note : 1. Teacher should demonstrate various format of concerned contents.

2. For Report writing practice demonstrate IEEE paper Format.(http://www.ieee.org/portal/cms_docs/pubs/confpubcenter/pdfs/samplems.pdf http://www.ieee.org/portal/cms_docs_iportals/iportals/publications/journmag/transactions/TRANS-JOUR.doc)

HW207-P	Practical Based on HW201-T (Linux)

Practical Assignments

1. Installing Red Hat Linux.
2. Disk partitioning in Linux.
3. Installing drivers in Linux.
4. Installing Xfree86 in Linux.
5. Understanding the Linux directory system.
6. Using the vi editor.
7. Opening, creating, saving, manipulating files using vi editor.
8. Using GNOME and KDE environments.
9. Managing files using GNOME and KDE
10. Writing shell scripts.
11. Networking using Linux.

HW208-P	Practical Based on HW202-T

Any Ten Practical's based on syllabus

HW209-P	Practical Based on HW203-T (Microprocessor)

Practical Assignments

1. Addition of two 8-bit numbers.
2. Subtraction of two 8-bit numbers.
3. Addition of two 16-bit numbers.
4. Subtraction of 16-bit numbers.
5. Comparison of two 8-bit numbers.
6. Find the sum of series of n numbers.
7. Find the factorial of any number.
8. Multiplication of two 8-bit numbers.
9. Division of 8-bit numbers.
10. Find the largest of three numbers.
11. Finding a given number from a list of numbers.
12. Sorting a given list of 8-bit numbers in the ascending order.

HW210-P	Practical Based on HW204-T

Any Ten Practical's based on syllabus

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