

DR.BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY



CIRCULAR NO.SU/Sci.& Tech./B.Voc./33/2018

It is hereby inform to all concerned that, on the recommendation of the Dean, Faculty of Science & Technology, the Hon'ble Vice-Chancellor has accepted the **following curriculum under B.Voc. programme viz: Certificate, Diploma, Advanced Diploma and B.Voc. Degree** in his emergency powers under section 12(7) of the Maharashtra Public Universities Act, 2016 on behalf of the Academic Council as appended herewith:

1.	B.Voc. Industrial Automation,
2.	B.Voc. Automobile Technology,
3.	B.Voc. Farm Equipment and Machinery,
4.	B.Voc. I.T.Skills and Software Development,
5.	B.Voc. Architectural Planning and Interior Design,
6.	B.Voc. Dairy Products,
7.	B.Voc. Drill Technology,
8.	B.Voc. Plant Tissue Culture and Green House Technology,
9.	B.Voc. Renewable Energy Source,
10.	B.Voc. Computer Hardware & Networking Maintenance.
11.	B.Voc.Food Processing and Preservation.
12.	B.Voc. Sustainable Agriculture.
13.	B.Voc. Bioproducts technician

This is effective from the Academic Year 2018-2019 and onwards.

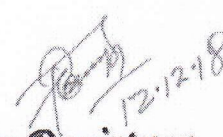
This curriculum are also available on the university website

www.bamu.ac.in

All concerned are requested to note the contents of this circular and bring notice to the students, teachers and staff for their information and necessary action.

University Campus,
Aurangabad-431 004.
Ref.No.
SU/B.Voc/2018/21709-22148
Date:- 12-12-2018

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12/12/18
Deputy Registrar,
Syllabus Section.

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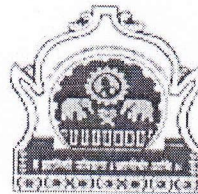
Copy forwarded with compliments to :-

- 1] **The Principals, affiliated concerned Colleges,
Dr. Babasaheb Ambedkar Marathwada University.**
- 2] **The Director, University Network & Information Centre, UNIC,
with a request to upload this Circular on University Website.**

Copy to :-

- 1] The Director, Board of Examinations & Evaluation, Dr.BAMU,A'bad.
- 2] The Section Officer, [BCS Unit] Examination Branch,
- 3] The Section officer, [Eligibility Unit], Dr.BAMU,A'bad.
- 4] The Programmer [Computer Unit-1] Examinations, Dr.BAMU,A'bad.
- 5] The Programmer [Computer Unit-2] Examinations, Dr.BAMU,A'bad.
- 6] The In-charge, [E-Suvidha Kendra], Rajarshi Shahu Maharaj
Pariksha Bhavan, Dr. Babasaheb Ambekar Marathwada University.
- 7] The Public Relation Officer, Dr.BAMU,A'bad.
- 8] The Record Keeper. Dr.BAMU,A'bad.

**DR. BABASAHEB AMBEDKAR
MARATHWADA UNIVERSITY,
AURANGABAD.**



**Curriculum of
B.Voc. Computer Hardware &
Networking Maintenance**

UNDER THE FACULTY OF SCIENCE & TECHNOLOGY.

[Effective from 2018-19 & onwards]

Course Structure
Bachelor of Vocation (B. Voc)
Computer Hardware & Networking Maintenance

Sr. No.	Course Code	Name of the Course	Contact Hrs Per Week		Evaluation Scheme		Credit
			L	P	CIA	SEE	
Semester – I		General Education Components					
1	CHN 101	Functional Marathi – I	4	0	20	80	4
2	CHN 102	Professional English – I	4	0	20	80	4
3	CHN 103	Professional Work – I	4	0	20	80	4
Semester - I		Skill Education Components					
1	CHN 201-T	Fundamentals of Computer	4	0	20	80	4
2	CHN 202-T	Operating System	4	0	20	80	4
3	CHN 203-T	Computer Organization & Microprocessor	4	0	20	80	4
4	CHN 204-P	Fundamentals of Computer	0	4	0	50	2
5	CHN 205-P	Operating System	0	4	0	50	2
6	CHN 206-P	Computer Organization & Microprocessor	0	4	0	50	2
			Total Credits				30

Course Structure
Bachelor of Vocation (B. Voc)
Computer Hardware & Networking Maintenance

Sr. No.	Course Code	Name of the Course	Contact Hrs Per Week		Evaluation Scheme		Credit
			L	P	CIA	SEE	
Semester – II		General Education Components					
1	CHN 301	Functional Marathi – II	4	0	20	80	4
2	CHN 302	Professional English – II	4	0	20	80	4
3	CHN 303	Professional Work – II	4	0	20	80	4
Semester - II		Skill Education Components					
1	CHN 401-T	Microprocessor & Interfacing Techniques I	4	0	20	80	4
2	CHN 402-T	Microprocessor & Interfacing Techniques II	4	0	20	80	4
3	CHN 403-T	Computer System Management – I	4	0	20	80	4
4	CHN 404-P	Microprocessor & Interfacing Techniques I	0	4	0	50	2
5	CHN 405-P	Microprocessor & Interfacing Techniques II	0	4	0	50	2
6	CHN 406-P	Computer System Management – I	0	4	0	50	2
			Total Credits				30

Matsyodari Shikshan Sansthas
Ankushrao Tope College, Jalna



Bachelor of Vocational
(Computer Hardware & Networking Maintenance)

Syllabus of
B. Voc. (Computer Hardware & Networking Maintenance)

First Year - Semester I & II
Three Year Degree Course
(With Effective from: June 2018)

Semester – I
General Education Components
Functional Marathi **Code:-CHN101**

1. General Marathi

The students learn to pronounce, read and write. They acquire their knowledge of fundamental grammatical structures and functions (e.g. sentence types, tenses, voice, parts of speech, word order, expressing possibility, obligation, necessity, prohibition, criticism; expressing preferences, making assumptions; asking for/refusing/giving permission; making offers, suggestions, etc.) They acquire their fundamental vocabulary to fulfill the above mentioned functions in roles, topics and discussions.

The students are taught to be able to converse on different topics (people, jobs, places to visit, festivals/celebrations, disasters/accidents, eating habits, sports/hobbies, environment, education, entertainment, transport, crime, etc.).

The students learn to understand spoken language. Listening texts include monologues and interacting speakers. They are taught to focus on understanding the gist, the main points, look for detail or specific information, and deduce the meaning.

The students are offered adapted/instructional reading material and are encouraged to learn to use different strategies for different reading purposes: identifying the main points in a text, looking for detail, locating specific information in a text, understanding a text structure, etc.

The students are expected to learn to produce written texts of various types: formal / informal / transactional letters, argumentative essays (expressing opinions, for and against), narration (story writing), memoranda and notes.

2. Professional Marathi

The purpose of this course is to prepare the students for doing Economics, Mathematics and Statistics in Marathi. Development of the students' restricted knowledge in economic terms and topics includes: different economic systems, central control of economy, labour utilities, demand and supply, money, markets and monopolies, banking.

Reference Books:

संदर्भ ग्रंथ:

१. शास्त्रीय मराठी व्याकरण - मो. के. दामले.
२. सुगम मराठी व्याकरण - मो. रा. वालिंबे
३. वाङ्मयीन निबंधलेखन - रा. ग. जाधव
४. संगणक परिचय - नदकिशोर दायमा
५. नभोवाणी कार्यक्रम : तंत्र-मंत्र - पुष्पा काणे
६. माहिती व तंत्रज्ञान मराठी - संपा. म.रा.मा.व.उ.मा.मं. नाशिक
७. व्यावसायिक व उपयोजित मराठी - प्रकाश मेदककर
- ८ मराठी शुद्धलेखन विषय नियम - मो. रा. वालिंबे
९. वस्तुनिष्ठ आकलन आणि उपयोजित मराठी लेखन - डॉ नरेंद्र मारवाडे
१०. उयोजित मराठी ङ ल. रा.नासिराबादक
११. व्यावहारिक मराठी - स्नेहल तावरे
१२. पत्रकारितेची मुलतत्वे - प्रभाकर पाध्ये
१३. व्यावहारिक मराठी - संपा. दत्तात्रय पुंड

1. General English

The students learn to pronounce, read and write. They acquire their knowledge of fundamental grammatical structures and functions (e.g. sentence types, tenses, voice, parts of speech, word order, expressing possibility, obligation, necessity, prohibition, criticism; expressing preferences, making assumptions; asking for/refusing/giving permission; making offers, suggestions, etc.) They acquire their fundamental vocabulary to fulfill the above mentioned functions in roles, topics and discussions.

The students are taught to be able to converse on different topics (people, jobs, places to visit, festivals/celebrations, disasters/accidents, eating habits, sports/hobbies, environment, education, entertainment, transport, crime, etc.).

The students learn to understand spoken language. Listening texts include monologues and interacting speakers. They are taught to focus on understanding the gist, the main points, look for detail or specific information, deduce the meaning.

The students are offered adapted/instructional reading material and are encouraged to learn to use different strategies for different reading purposes: identifying the main points in a text, looking for detail, locating specific information in a text, understanding a text structure, etc.

The students are expected to learn to produce written texts of various types: formal / informal / transactional letters, argumentative essays (expressing opinions, for and against), narration (story writing), memoranda and notes.

Reference Books

- 1) MSBTE Textbook - MSBTE
- 2) Essential English Grammar – Raymond Murphy
(Cambridge Publication)
- 3) High School English Grammar & Composition – Wren & Martin
(S Chand & Co.)

Professional Work

Computer Fundamentals & MS- Office- I Code:-CHN103

UNIT – 1

1. Fundamentals of Computer System

- Characteristics & features of Computers.
- Components of Computers.
- Organization of Computer.

2. Computer Generation & Classification

- Generation of Computers: First to Fifth

UNIT – II

3. Computer Memory

- Memory Cell & Organization
- Types of Memory (Primary And Secondary) : RAM , ROM , PROM , EPROM
- Secondary Storage Devices (FD, CD, HD, Pen drive, DVD, Tape Drive, DAT)

4. I/O Devices

- Input Devices: Touch screen, OMR, OBR, OCR, Light pen, Scanners
- Output Devices: Digitizers, Plotters, LCD, Plasma Display, Printers

UNIT – III

5 GUI Operating System : Mouse Practice, Starting, Login, Shutdown, Exploring Directories, Resizing, Moving, Minimizing, closing of software windows, familiarization with file icons, Launching Applications, Deleting, Renaming files, Managing Directories, Searching for files, Using Accessories.

UNIT – IV

Ms- Office (Ms- Word)

Word Processing Tool: Menus, Shortcut menus, Toolbars, Customizing toolbars, Creating and opening documents, Saving documents, Renaming documents, Working on multiple documents, Close a document ;

Working With Text: Typing and inserting text, Selecting text, Deleting text, Undo, Formatting toolbar, Format Painter, Formatting Paragraphs: Paragraph attributes, Moving, copying, and pasting text, The clipboard, Columns, Drop caps; **Styles:** Apply a style, Apply a style from the style dialog box, Create a new styles from a model, Create a simple style from the style dialog box, Modify or rename a style, Delete a style;

Lists: Bulleted and numbered lists, Nested lists, Formatting lists

Tables: Insert Table button, Draw a table, Inserting rows and columns, Moving and resizing a table, Tables and Borders toolbar, Table properties

Graphics: Adding clip art, Add an image from a file, editing a graphic, AutoShapes;

Spelling and Grammar: AutoCorrect, Spelling and grammar check, Synonyms, Thesaurus;

Page Formatting: Page margins, Page size and orientation, Headers and footers, Page numbers, Print preview and printing.

Note:

The above practical is to be conducted using the either Microsoft-Office or Open Office.

WWW.tutorialspoint.com

WWW.w3schools.com

Text Books:

1. Fundamentals of Information Technology; By Chetan Srivastava, Kalyani Publishers
2. Fundamentals of Computers: By V.Rajaraman, PHI Publication, IVth Edition.
3. Fundamentals of Programming: By Raj K.Jain, S.Chand Publication

Reference Books:

1. Computer Fundamental By B.Ram, BPB Publication.

Skill Education Components

Fundamentals of Computer Code: CHN 201-T

UNIT– 1

1. Fundamentals of Computer System

Characteristics & features of Computers.

Components of Computers, Organization of Computer.

UNIT2: Essentials of Computers

Functional Block Diagram, History, Evolution.

An Overview of System and Components.

CPU Cabinet: Power supply, SMPS, Motherboard, CPU, Cables and connectors, Main and auxiliary memory, Front and rear panel study.

UNIT 3: Devices & its types

Input devices: wired /wireless Keyboard, Mouse, Joystick, Scanner, Digitizers, Light pen, Touch screen, Barcode Scanner Camcorder.

Output devices: Monitor (CRT, LCD/ LED Panel,)

UNIT4: CPU

Microprocessor as CPU, General block diagram of CPU, CPU bus system, Packing, Cooling, Sockets and slots, Comparative study of Microprocessor's features with evolutions, Microprocessor Operations:- Instruction Cycle, Data fetch, Address Decoding, Classification of Interrupts, Input Output Techniques, Device Controllers(DMA controller , Disk drive controller)

Reference Books:

1. Computer Fundamentals, P. K. Sinha
2. Upgrading and Repairing of PCs, Scott Muller
3. IBM PC and Clones, B. Govindrajalu
4. Microprocessor and Interfacing, D. V. Hall
5. Microprocessor X 86 Programming, Venugopal
6. Computer Motherboard Testing and Fault finding, S. K. Gupta
7. PC Hardware (A+ Certificate guide), Mike Mayer
8. PC Hardware interfaces, Michael Gook

Operating System

Code: CHN 202-T

UNIT1: Operating System

Types and Functions. DOS – Introduction, Versions, DOS Commands, Internal, External, Root Directory. Windows – Introduction, Working with desktop, Control Panel settings. Introduction to RTO.

LINUX: Basic Commands, Introduction to OS: ANDROID OS, IOS

Operating System & types of Operating system.

UNIT2: Computer Memory and Memory Management Techniques

Types and characteristics, Classification, Semiconductor, Magnetic, Optical ROM and its types.

RAM and its types: SDRAM, EDORAM, DDR Series, Flash RAM. Memory modules, SIMM and DIMMs. Secondary Memory: Hard Disc Drive, Floppy Disc, CDROM, CD R/W, DVD, Pen Drive.

Flash memories: Mini/ micro SD Card. Formatting and Utility Tools for drivers.

UNIT3: Process Management

Process & its types, Process States, Process synchronization.

Types of Motherboard & its details.

UNIT4: Computer Structure and Communication

Basic Computer Structure and Communication inside Computer, MAR, MBR and Memory mapping, ALU, Control UNIT (Concept of Micro programmed and Hardwired Control)

Reference Books:

1. Computer Fundamentals, P. K. Sinha
2. Upgrading and Repairing of PCs, Scott Muller
3. IBM PC and Clones, B. Govindrajalu
4. Microprocessor and Interfacing, D. V. Hall
5. Microprocessor X 86 Programming, Venugopal
6. Computer Motherboard Testing and Fault finding, S. K. Gupta
7. PC Hardware (A+ Certificate guide), Mike Mayer
8. PC Hardware interfaces, Michael Gook

Computer Organization & Microprocessor

Code: CHN 203-T

UNIT 1: Introduction and Concepts

Hardware and Software, System Software, Application Software, Firmware, BIOS, POST sequence, Operating Systems, Program, Flow Charts, Loader, assembler, Compiler, Linker, Editor, Simulator, Emulator, Debugger, Device Drivers, Software Packages and Programming Languages

UNIT2: Computer Hardware

Storage Devices:

Magnetic Tape, Floppy Disk, CD/DVD, Hard Disk, SSD (Pen drive) etc.

Types of Card used in Computer System:

Motherboard, Controller card, Display card, Sound card, AGPS, Fax / Modem cards, TV Tuner, Ethernet cards.

UNIT3: Microprocessor Study8086

Architecture, Instruction set, 80286, 80386, and 80486. Introduction to advanced processors- i series

UNIT4: Printer& types of Printer

Dot Matrix, Inkjet, LASER, Thermal, Plotter, and Barcode Printers, Sound devices (Speaker, Headphone, Bluetooth, and dongle)

Details of Printer & Working of Different printer, DVD, CD-ROM & other Hardware Devices.

Reference Books:

1. Computer Fundamentals, P. K. Sinha
2. Upgrading and Repairing of PCs, Scott Muller
3. IBM PC and Clones, B. Govindrajalu
4. Microprocessor and Interfacing, D. V. Hall
5. Microprocessor X 86 Programming, Venugopal
6. Computer Motherboard Testing and Fault finding, S. K. Gupta
7. PC Hardware (A+ Certificate guide), Mike Mayer
8. PC Hardware interfaces, Michael Gook

List of Practical

1. Site Preparation, Electrical Connections and use of Maintenance kit, Cable Maintenance, Connecting Keyboard, Mouse, Printer, Scanner, Multimedia components and make it working.
2. Identification of system, Explanation of system components: Motherboard 1) Onboard controllers, 2) Add on controllers. (Drives, RAM, CMOS battery, SMPS, BIOS RAM, Chipset, Controllers.
3. Identification of cables, connectors and tools.
4. DOS based practical Internal External commands, Directory handling and Practical on AUTOEXEC. BAT and CONFIG.SYS files (Only Demo)
5. Desktop and control panel settings of windows operating system.

Operating System Code: CHN 205-P

List of Practical

1. MS office: 3 practical. (Students are expected to be familiar with MS office.)
2. Practical based on MS Word, Excel.
3. Practical based on Power Point.
4. Study of Power Supply: Types, Concepts of Fuse, MCB, Stabilizer, UPS, SMPS and checking of Different voltages, Power Good Signal
5. Study of BIOS and POST Sequence (Only Demo) and Standard CMOS setup for different configuration
6. Installation of device drivers for Mouse / printer / scanner / pen drive / CD- Combo and Checking hardware and software components and working with multimedia

Computer Organization & Microprocessor

Code: CHN 206-P

List of Practical

1. Assembly and disassembly of computer.
2. Identification and verification and Detailed Study of Disc drives.
3. Study of Formatting, Scheduled Tasks, Defragmentation, Bootable disk.
4. Assembly and maintenance of Dot matrix printer, Hardware study of Inkjet Printer, LASER printer.
5. Use of Internet, search engines and e-mail.

Semester II

General Education Components

Functional Marathi

Code: CHN301

1. Business Marathi

Business Marathi course starts during the first intensive course with the introduction of the students into the world of business.

The course aims to:

- Develop the students' comprehension of business and economic texts
- Develop the students' listening skills in the field of business and economics
- Provide the students with opportunities to express business concepts by reformulating them in their own words while summarizing.

The students' competence in this aspect is measured by their ability to demonstrate their communication skills in the key business areas of meetings, negotiations, telephoning and social Marathi, as well as the ability to write memos, notes.

2. Skills development

Students are taught to develop their skills in:

Reading which includes:

Skimming, scanning, detailed reading, guessing unknown words from context, understanding text organization, recognizing argument and counter-argument; distinguishing between main information and supporting detail, fact and opinion, hypothesis versus evidence; summarizing and note-taking.

Writing includes:

- Essay content and structure (patterns of organization, paragraphing, discussion – argument/counter-argument, advantages and disadvantages, topic sentence and supporting ideas, coherence and cohesion, punctuation).
- Functions (generalization, definitions, exemplification, classification, comparison and contrast, cause and effect, process and procedure, interpretation of data).
- Style (passive constructions, avoiding verbosity)
- Punctuation

Listening includes:

- General comprehension (listening for gist, listening for detailed information, evaluating the importance of information).
- Lectures (identifying the topic and main themes, identifying relationships among major ideas, comprehending key information).

Speaking includes:

- Seminar skills (agreeing and disagreeing, clarifying, questioning, concluding).
- Presentation skills (introductions and stating the purpose, signposting, highlighting key points, summaries, conclusions).

The students' competence in skills development is measured by their ability to understand and produce written and spoken language in an educational context, to perform the following academic tasks:

- reading and understanding written academic language;
- writing assignments in an appropriate style for university study;
- listening to and comprehending spoken language (within the framework of Breakthrough level);
- Speaking to colleagues and lecturers (within the framework of Breakthrough level).

Reference Books:

संदर्भ ग्रंथ:

१. शास्त्रीय मराठी व्याकरण - मो. के. वामले.
२. सुगम मराठी व्याकरण - मो. रा. वाळिंबे
३. वाङ्मयीन निर्बंधलेखन - रा. ग. जाधव
४. संगणक परिचय - नंदकिशोर दायमा
५. नभोयाणी कार्यक्रम : तंत्र-मंत्र - पुष्पा काणे
६. माहिती व तंत्रज्ञान मराठी - संपा. म.रा.मा.व.उ.मा.मं. नाशिक
७. व्यावसायिक व उपयोजित मराठी - प्रकाश मेढकर
८. मराठी शुद्धलेखन विषय नियम - मो. रा. वाळिंबे
९. वस्तुनिष्ठ आकलन आणि उपयोजित मराठी लेखन - डॉ. नरेंद्र मारवाडे
१०. उपयोजित मराठी उल. रा. नासिराबादक
११. व्यावहारिक मराठी - स्नेहल तावरे
१२. पत्रकारितेची मुलतत्वे - प्रभाकर पाध्ये
१३. व्यावहारिक मराठी - संपा. दत्तात्रय पुंड

1. Professional (ESP) English

The purpose of ESP course is to prepare the students for doing Economics, Mathematics and Statistics in English.

Development of the students' restricted knowledge in economic terms and topics includes: different economic systems, central control of economy, labor utilities, demand and supply, money, markets and monopolies, banking.

The students' competence in ESP is measured by their ability to:

understand and interpret information presented in verbal, numerical or graphical form, organize and present ideas and statements in a clear, logical and appropriate form.

Reference Books:-

- 1) MSBTE Textbook - MSBTE
- 2) Essential English Grammar Raymond Murphy (Cambridge publication)
- 3) High School English Grammar & Composition – Wren & Martin
(S Chand & Co.)

Professional Work - II Code: CHN303

Unit 1: MS- Excel

Spreadsheet Basics: Screen elements, Adding and renaming worksheets, The standard toolbar - opening, closing, saving, and more;

Modifying A Worksheet, Moving through cells, Adding worksheets, rows, and columns, Resizing rows and columns, Selecting cells, Moving and copying cells,, Freeze panes;

Formatting Cells: Formatting toolbar, Format Cells dialog box, Dates and times;

Formulas and Functions: Formulas, Linking worksheets, Relative, absolute, and mixed referencing, basic functions, Function Wizard, Auto sum,

Sorting and Filling: Basic ascending and descending sorts, Complex sorts, Autofill; Alternating text and numbers with Auto fill, Auto filling functions; Graphics; Adding clip art; Add an image from a file; Editing a graphics; AutoShapes;

Charts: Chart Wizard; Resizing a chart; Moving a chart, Chart formatting toolbar; **Page Properties and Printing:** Page breaks, Page orientation, Margins, Headers, footers, and page numbers, Print Preview, Print; Keyboard Shortcuts.

Unit 2:MS- PowerPoint

Presentation Tool: AutoContent Wizard, Create a presentation from a template, Create a blank presentation, Open an existing presentation, Auto Layout,

Presentation Screen: Screen layout, Views, Working with Slides: Insert a new slide, Applying a design template, Changing slide layouts, Reordering slides, Hide slides, Create a custom slide show, Edit a custom slide show

Adding Content: Resizing a text box, Text box properties, Delete a text box, Bulleted lists, Numbered lists, Adding notes, Video and Audio

Working with Text: Adding text, Editing options, Formatting text, Replace fonts, Line spacing, Change case Spelling check

Color& Background:Color schemes, Backgrounds, Graphics, Adding clip art, adding an image from a file, editing a graphic, AutoShapes,

WordArt Slide Effects: Action buttons, Slide animation, Animation preview, Slide transitions, Slide show options, Master Slides, Slide master, Header and footer, Slide numbers, Date and time Saving and Printing, Save as a web page, Page setup, Print

Unit 3:

Web Browser: Basic Browsing, Buttons: forward, backward, home, adding to favourites, stop, save, save as, Saving an Image from the Web, printing, Specifying a Home Page

Browsing: Using Web URLs, Anatomy of a URL, Membership Websites: Signing up for email service,

Searching: Academic Search on the web.

Unit 4:

Processor

- Structure of Instruction, Description of Processor, Processor Features

Operating system Concepts

- Why Operating System?, Functions of Operating System , Booting of OS & it's type
- Types of Operating System: Batch O.S. , Multiprogramming O.S., Time Sharing O.S ,Personal Computers O.S., Network O.S.

WWW.tutorialspoint.com

WWW.w3schools.com

Text Books:

1. Fundamentals of Information Technology; By Chetan Srivastava, Kalyani Publishers
2. Fundamentals of Computers: By V.Rajaraman, PHI Publication, IVth Edition.
3. Fundamentals of Programming: By Raj K.Jain, S.Chand Publication

Reference Books:

1. Computer Fundamental By B.Ram, BPB Publication.

Skill Education Components

Microprocessor & Interfacing Techniques I

Code: CHN 401-T

UNIT1: Motherboard Configuration

Motherboard (Installation, Configuration and Troubleshooting): Types of motherboards, History, Parts of Motherboard, Installation of motherboard, Installation of SMPS, Processor, BIOS Setup & information, Diagnosis of motherboard.

UNIT2: Installation

Installation of I/O & Other Devices: Keyboard, Mouse, CD/ DVD drives, HDD, Installation of different types of operating system.

Advanced Technology in Computers: - Server, client, Mainframe, Desktop, Notebook, Tablets etc.

Unit 3: Computer, Microcomputers & Microprocessors

An Introduction & Overview – Structure & Operation, Specification of new processors: Intel Processors: Dual Core, Core i3/i5/i7 Family, Intel 2nd, 3rd & 4th Generation Processors, Xeon Processors.

Non-Intel Processors: Advanced Micro Devices (AMD), ARM based Processors, iMAC, (Apple Macintosh), Advanced Systems BUS Architecture PCI, IDE, USB 2.0 & 3.0, ATA, SATA, eSATA, HDMI

Interrupts & Interrupt Applications of 8086 Processor

Software Interrupt Applications.

Unit 4: Memories and EDA Tools

The 8086 Max Mode, DMA Transfers, Interfacing & Refreshing DRAMs, Cache Memory Concepts, Computer Based design & Development Tools.

Books for References:

1. Assembly Language for PC – John Socha, Peter Norton
2. Microprocessor and Interfacing- D.V. Hall
3. The 8086 Microprocessor Programming and Interfacing the PC –K. Ayala
4. Programming with X86 processor –Venugopal

Microprocessor & Interfacing Techniques II

Code: CHN 402-T

Unit 1: Digital & Analog Interfacing

Programmable parallel Ports & Handshake Input Output.

Interfacing Microprocessors to Keyboard,

Interfacing to Alphanumeric Displays.

Sensors and Transducers.

DAC & ADC Converters: Specifications & Types, Interfacing & Types of Interfacing

Unit 2: New Standards

1. Green PC: Introduction, Advantages, Thick & Thin concept. Introduction to N-Computing Concept and devices,

2. Multimedia PC: Introduction, Minimum Requirements, MPEG Terminology, Enhanced Devices & interfaces, Sound Cards, MIDI Ports.

3. Displays: Display Adaptors, Display Systems

4. Controllers: Peripheral Controllers, System Controllers, Memory Controller, Disk Drive Controller

5. BIOS: Legacy, Flash BIOS,

6. Embedded IO systems – Introduction to win8/Android/IOS

Unit 3: Computer Systems peripherals

1. Micro Computer Displays

2. Input Devices: Keyboards, Mouse, Scanners, Card Readers etc.

3. Output Devices: Printers, Displays, Plotters etc.

4. Storage Devices: Magnetic Disks, Optical Disk Data Storage, Flash Drives etc.

5. Various ADD ON Cards. (Graphics Card, Wireless NIC, Ethernet Card, Audio)

Unit 4: Communications

1. Speech Synthesis and Recognition Concepts.

2. Introduction to Asynchronous Data Communications

3. Serial Data Communication Methods & Standards.

4. Synchronous Serial Data Communication & Protocols

5. Concepts of Personal Area Network (PAN), Local Area network (LAN) & Wide Area Network (WAN)
6. Introduction to Wireless Communication Concepts & Protocols
7. Study of Remote Desktop Sharing Tools

Books for References:

1. Assembly Language for PC – John Socha, Peter Norton
2. Microprocessor and Interfacing- D.V. Hall
3. The 8086 Microprocessor Programming and Interfacing the PC –K. Ayala
4. Programming with X86 processor –Venugopal
5. Information System Control and Audit – Ron Weber.
6. PC Hardware (A+ Certificate guide) by Mike Mayer
7. PC Hardware interfaces by Michael Gook
8. Computer Fundamentals by P. K. Sinha
9. Upgrading and Repairing of PCs by Scott Muller
10. IBM PC and Clones by B. Govindrajalu

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Computer System Management – I

Code: CHN 403-T

Unit1: Preventive Maintenance

Contributors to Failures

Environmental: Heat, Cold, Dust, and Noise Interference

Electrical: Power Line problems, EMI, Corrosion, Magnetism,

Storage Devices:

Hard Disk Drive Maintenance

Floppy Disk Drive Head Cleaning

Flash Drives (USB Pen Drives, MMC cards)

Preventive Maintenance of PC: - (Hardware & System Software)

Power Supply Maintenance: Stabilizers, UPS, SMPS, Cables

Preventive Maintenance of Printers.

Unit 2: Trouble Shooting -I

Introduction to Basic trouble shooting

General Trouble Shooting Rules

Personal Attitude for Trouble Shooting

Need of Situation

Software Interrupt Applications.

Common Troubles with Modern PC

Component Failure Recovery.

Disk Drive Failure

Display Failure

Motherboard & RAM Failure

Port Failures (Parallel, Serial & USB Ports)

Repair Generated Failure

Fault Finding & General Repairs

Unit 3: Trouble Shooting -II

Safety Precautions during trouble shooting & repairs

H/w & S/w fault isolation Techniques

Diagnostic Software Programs & Utilities.

Specific Trouble Shooting & Repairs

Startup Problems

Run Problems

Display Problems: Adaptor Cards (PCI & AGP), Device Driver

Configuration, Graphics Resolution, Graphics Accelerator board.

Disk Drive Problems (HDD, CDROMs, FDD, Writers etc.)

Keyboard & Mouse trouble Shooting.

Printer Problems

Unit4: Introduction to Business Continuity Process &

Disaster Recovery Planning

- Preventive Maintenance Schedules.
- Causes for Incidents & Disaster
- Minimize & Recovery Alternatives

Access Controls: Logical & Physical

i) Backup & Restore Policies, Procedure & Implementations

- Importance of Disaster Recovery Plan

Books for References:

1. Assembly Language for PC – John Socha, Peter Norton
2. Microprocessor and Interfacing- D.V. Hall
3. The 8086 Microprocessor Programming and Interfacing the PC –K. Ayala
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Microprocessor & Interfacing Techniques I

Code: CHN 404-P

List of Practicals:

Practicals should be done with TASM/ NASM

1. Arithmetic Programs
2. Code Conversion Programs
3. Program for strings and arrays
4. Programs with DOS interrupt
5. Program with BIOS interrupt
6. Writing driver programs for mouse operation
7. Writing Com program
8. Interfacing with PC ports
9. Study of USB communication
10. Study of Various Android Applications – Any 10
11. PC to PC communication

Microprocessor & Interfacing Techniques II

Code: CHN 405-P

1. Installation of Operating System – Windows7/Win8 Win2012 / Linux /
2. Installation of Drivers: INF, Graphics, Sound, Ethernet, Modem, etc.
3. Trouble Shooting: Trouble Shoot a PC for No Display, Hard disk Drive Failure
4. Network Sharing: Share a Drive on LAN, Share a Printer on LAN, Share a Folder on LAN
5. Trouble Shoot a Virus infected PC using a Antivirus Program (Free ware: AVAST, Fire Threat)
6. Remote Desktop Sharing – Using Team viewer, ShowmyPC, Ammyy Admin
7. LAN: Site Preparation for Installation of LAN
8. Software Installation: MS-Office, TASM, Tally, Acrobat etc
9. Antivirus: Need, Installation and Updation types

Computer System Management – I

Code: CHN 406 -P

List of Practicals

Introduction to Basic trouble shooting

General Trouble Shooting Rules

Personal Attitude for Trouble Shooting

Need of Situation

Software Interrupt Applications.

Common Troubles with Modern PC

Component Failure Recovery.

Disk Drive Failure

Display Failure

Motherboard & RAM Failure

Port Failures (Parallel, Serial & USB Ports)

Repair Generated Failure

Fault Finding & General Repairs

Safety Precautions during trouble shooting & repairs

H/w & S/w fault isolation Techniques

Diagnostic Software Programs & Utilities.

Specific Trouble Shooting & Repairs

Startup Problems

Run Problems

Display Problems: Adaptor Cards (PCI & AGP), Device Driver

Configuration, Graphics Resolution, Graphics Accelerator board.

Disk Drive Problems (HDD, CDROMs, FDD, Writers etc.)

Keyboard & Mouse trouble Shooting.

Printer Problems