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ಮಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
MANGALORE UNIVERSITY

ಕುಲಸಚಿವರ ಕಛೇರಿ
ಮಂಗಳಗಂಗೋತ್ರಿ - 574199
Office of the Registrar
Mangalagangothri - 574199

ಕ್ರಮಾಂಕ / No. MU/ACC/CR 3/2011-12/A2

ದಿನಾಂಕ / Date : 06.07.2011

NOTIFICATION

Sub: Syllabus of Certificate, Diploma & Advanced Diploma Courses in "Computer Hardware and Networking" under Career Oriented programme.

Ref: Academic Council approval dated 16.06.2011.

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Pursuant to the above, the syllabus of Certificate, Diploma & Advanced Diploma Courses in "Computer Hardware and Networking" under Career Oriented programme is hereby notified for implementation with effect from the academic year 2011-12.

REGISTRAR.

To:

(1) The Principals of the affiliated / constituent Colleges of Mangalore University offering above course.
(2) The Registrar (Evaluation), Mangalore University.
(3) The Director, Computer Centre, Mangalore University.
(4) The Superintendent, Academic Section, O/o the Registrar, Mangalore University.
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PAPER – I: PC Hardware and Operating System

Module-I: Basics Electronic Components

-Features and characteristics of passive Components – resistor, capacitor, inductor, diode
- Features and characteristics of active Components – bipolar and FET Transistor
-Logic gates
-Combinational and Sequential circuits using logic gates
-analog to digital and digital to analog converters
-Integrated Circuits

Module-II: PC Hardware

-Overview of Computer Organisation
-Introduction to Microprocessor - Types of Processors and their specifications (Intel: Celeron, P4 family, Dual core, Core2 duo, Quad core, Xeon, and AMD)
-PC hardware

-Mother Board & Components

Types, Form factor, Different Components of Mother Boards (I/O slots, I/O connectors, CMOS battery, RTC, Memory Socket, BIOS, Front Panel Connectors), Types of Buses, compatibility with the processor, SATA interface

-System Resources

IRQ, DMA, Memory Address, I/O address, Resource Conflict, Plug & Play Concept

-CMOS Utility

Concept, CMOS RAM, CMOS Battery, backup, CMOS Utility Program menu, Clearing CMOS

-Add on Cards, Cables & Connectors

Different latest Add on Cards – (Identification in terms of I/O slot and connectors) (AGP, PCI Express, TV Tuner Card, DVR card, Video Capture, SCSI. USB, NIC, Firewire, Internal Modem, Sound Card)

-Memory

Basics of Semiconductor memories, Volatile memory - DRAM (e.g., DDR SDRAM), SRAM; Non-volatile - ROM, PROM, EPROM, EEPROM, Flash memory

-Display Systems

Types of VDU, (CRT, LCD, TFT), Terms like Resolution, Dot Pitch, Interlaced & Non Interlaced Power Consumption, Durability, Specification, Installation

-Drives

Floppy Disk Drive: Floppy Drive, Components (Read / Write Head, Spindle Motor, Head Actuator, Sensors, Connectors), and Preventive Maintenance, Trouble Shooting

Hard Disk Drive: Types, capacity, Hard Disk Drive Component (Media, R/W Head, Spindle Motor Head Actuator) Connectors, Jumper setting, HDD Specification (Head, Cylinder, Sector, Model Number, Firmware Number), Configuration of HDD in, CMOS/BIOS setup, partitioning, Formatting, Writing Format, File Format (FAT, NTFS, Ext.3 for LINUX), type of interface, Preventive Maintenance (S/W, H/W), trouble Shooting (H/W, S/W Recovery, Zero fill)

Optical Disk Drive: Types (ROM, R/W, DVDROM, DVD R/W), Capacity, Drive Components (Connectors, Motors, Sensors, Lens, Jumper Setting) CD ROM Drive /

Disc. Format (ISO9660, high Sierra), Difference between CD & DVD (Capacity, format), Interface (IDE, SCSI, USB)

Back up Drive: Pen Drive U3 format, Zip Drive, Tape Drive, USB External Drive (HDD, CD/DVD writer), Types, capacity, interface connector, write protection, Trouble Shooting, Introduction of Magneto-Optical Drive, Interface, Installation, casing for external drive

-Assembling a Personal Computer

Module III.Operating System – Windows

-Overview of Operating System

-Features of Windows- Managing user interface, files, programs and other resources

-Installing Windows XP/7 - Pre-installation Checks; Introduction to File system - FAT16, FAT32, NTFS, Hard Disk Partition

Configuring Windows - Configuring DOS Drivers; Configuring Windows 9X Drivers, Requirements for Plug and Play; The Device Manager, Configuring Printing

-Installation of MS Office and other application software packages

- Computer Virus Management-Introduction to viruses, Types of Viruses, how viruses spread, Virus detection programs, Virus prevention and removal using Antivirus tools

List of Practical:

Module I:

1. Using Testing Instruments like multimeter, Oscilloscope.
2. AC / DC Voltage measurement.
3. Identify & test different types of Resistor, Capacitor, Coils & Transformer.
4. Identify & test different types of Diodes, transistors.
5. Transistor as an Oscillator – sine wave/square wave.
6. Verify functioning of ADC/ DAC.

Module II:

1. Draw Layout & understand internal parts of Computers Desktop & Laptop.
2. Identify different types of Processors, Cables, Connectors used in Computer.
3. Verify truth table of Gates, Flip-Flops.
4. Verify functioning of Counters, Registers.
5. Verify functioning of Adder - Half & Subtractor – Half using discrete gates.
6. Draw layout & understand sections of Motherboards & Add on Cards.
7. Configuring important parameters of CMOS Setup utility, BIOS update.
8. Identify different types of Drives & understand internal mechanism of the same (FDD, HDD, CDO, Zip, Pen, SCSI Drive).
9. Study of Monitors, Input units
10. Study of printers, Printer installation
11. Installation of SCSI Drive, Optical Drives (CDR, DVRW).
12. Installation of OS Single, Partitioning, Formatting.
13. Installation of OS Dual.
14. Surveillance using DVR Card, Camera and Accessories – DEMO.
15. General troubleshooting of hardware, Software or OS troubleshooting
16. Troubleshooting printer related problems, RAM related problems
17. Hard disk maintenance, Disk management
18. Data /OS backup and restore