



BANGLADESH TECHNICAL EDUCATION BOARD

Agargoan, Dhaka-1207.

4-YEAR DIPLOMA-IN-ENGINEERING PROGRAM
SYLLABUS (PROBIDHAN-2016)

COMPUTER TECHNOLOGY

TECHNOLOGY CODE: **666**

4th SEMESTER

DIPLOMA IN ENGINEERING
PROBIDHAN-2016

COMPUTER TECHNOLOGY (666)

Sl. No.	Subject Code	Name of the Subject	T P C			Marks				
						Theory		Practical		Total
						Cont. Assess	Final Exam	Cont. Assess	Final Exam	
1	66641	Object Oriented Programming	2	3	3	40	60	25	25	150
2	66642	Data Structure & Algorithm	2	3	3	40	60	25	25	150
3	66643	Web Development	0	6	2	-	-	50	50	100
4	66644	Data Communication System	2	6	4	40	60	50	50	200
5	66645	Computer Peripherals	1	6	3	20	30	50	50	150
6	66842	Principle of Digital Electronics	3	3	4	60	90	25	25	200
7	65841	Business Organization & Communication	2	0	2	40	60	-	-	100
7										
Total			12	27	21	240	360	225	225	1050

AIMS

- To be able to interface and maintain Key-board, Mouse, Monitor, Printer etc. along with the computer system.
- To be able to develop the knowledge & skills regarding working construction and interfacing aspects of peripherals.
- To be able to acquire the knowledge and skills on working principle & operation of peripheral devices.

SHORT DESCRIPTION

Peripheral interface and peripherals; Input-Output devices; Display devices; Special I/O devices; disk drives.

DETAIL DESCRIPTION

Theory:

1. Understand the basics of interfacing.

- 1.1 Define peripheral and interfacing with example.
- 1.2 State the functions and necessity of interfacing.
- 1.3 State the Categories of interface.
- 1.4 Mention the methods of peripheral interfacing.
- 1.5 State the steps of analog and digital interfacing in a computer system.
- 1.6 State the elements of interface.
- 1.7 Describe the function of a general purpose parallel interface with block diagram.

2. Understand the operation of serial interfaces.

- 2.1 State the necessity of serial interfacing.
- 2.2 Mention the asynchronous character and synchronous block data format for a serial interface.
- 2.3 Describe the operation of an USART with block diagram.
- 2.4 Describe the operation of RS232.C/v.24 standard serial interface with block diagram.

3 Understand the operation of keyboard and mouse.

- 3.1 Describe the construction and operation of mechanical, membrane, capacitive and Hall effect key switches.
- 3.2 State the terms: bouncing, de-bouncing, n-key rollover and n-key lockout.
- 3.3 State the function of Keyboard Encoder.
- 3.4 Describe the working principle of an optical and wireless mouse.

4 Understand the basic operation of displays and adapters.

- 4.1 Classify the display devices.
- 4.2 Describe the working principle of LCD and LED display unit using Block diagram.
- 4.3 State the meaning of the terms-pixel, scanning, Horizontal and Vertical scanning, interlace and non-interlace scanning.
- 4.4 Describe the general structure of a modern video display adapter/ graphics adapter.
- 4.5 Prepare the specification of a LCD and LED monitor.

5 Understand the constructional and operational feature of dot matrix printers.

- 5.1 Classify printers (dot-matrix, Inkjet, Laser)
- 5.2 State the feature of a dot-matrix, Inkjet, Laser printer.

- 5.3 Describe the operation of a dot matrix, Inkjet, Laser printer.
- 5.4 List the Major parts and components of a dot matrix, Inkjet, Laser printer.
- 5.5 Prepare the specification of a dot matrix, Inkjet, Laser printer.

6 Understand the characteristics of special type I/O devices.

- 6.1 List the special types of I/O devices.
- 6.2 State the characteristics of Joystick, digitizer, Touch Screen, Plotter, Line Printer and light pen.
- 6.3 Classify and define different type of scanner.
- 6.4 State the use of Multimedia projector.
- 6.5 Define OMR, OCR, ICR and MICR.

7 Understand the operation of Hard disk and Optical disk drives.

- 7.1 List the Types of Hard Disk Drives (EIDE, SATA, SCSI, And SAS External Hard Disk).
- 7.2 Describe the working principle of a Hard disk drive with block diagram.
- 7.3 Describe the recording principle and operation of optical (CD, DVD, Blue Ray) disk drive.
- 7.4 Describe USB flash memory and portable hard disk.

Practical:

1. Identify the external and internal parts and components of a Keyboard and Mouse.
2. Identify the external and internal parts and components of a mouse.
3. Repair and / or replace external and internal parts and components of a scanner.
5. Repair and/or replace the mechanical assembly and the electronic part of a LCD/LED monitor.
6. Install and configure printers.
7. Perform routine maintenance of printers (LASER, DOT and Inkjet).
8. Repair and / or replace the Mechanical Assembly of LASER printer.
9. Repair and /or replace the fixing unit of LASER printer.
10. Repair and /or replace optical/scanning unit of LASER printer.
11. Repair and / or replace power board of printers (LASER, DOT and Inkjet).
12. Repair and /or Replace the formatter System \ Logic Controller Board of printers (LASER, DOT and Inkjet).
13. Repair and /or Replace of Mechanical Assembly of dot matrix printers.
14. Repair and /or Replace of Mechanical Assembly of Inkjet printers.
15. Identify the major parts of a display adapter/ Video graphics adapter.
16. Identify the external and internal parts and components of a plotter.
17. Identify the external and internal parts and component of a Multimedia Projector.
18. Identify the parts and components of a Hard Disk Drive.
19. Identify the parts and components of a DVD drive.
20. Identify the parts and components of a Blue ray drive.

REFERENCE BOOKS

1. Computer Peripherals – Barry Wilkinson and David Horocks.
2. Microprocessors and Interfacing – Douglas V Hall: McGraw Hill
3. Inside the PC by Peter Norton; Tech Media Publication, New Delhi
4. Microprocessors and Interfacing by Uffenbeck.
5. Hardware and Software of Personal Computers by SK Bose; Wiley Eastern Limited, New Delhi.
6. Upgrading and Repairing PCs By Scott Muller