BANGLADESH INSTITUTE OF MANAGEMENT

4 Sobhanbag, Mirpur Road, Dhaka-1207

POST-GRADUATE DIPLOMA IN COMPUTER SCIENCE

SYLLABUS FOR PART-I

Evaluation Criteria :

Class Attendance : 10%
Class Test   : 20%
Final Examination : 70%

Name of Subject:
1. Fundamentals of Computer
2. Data Structure & Algorithm
3. Database Management System-1 (Back End)
4. Programming Language – C
5. Web Development (Client Side Scripting)

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POST-GRADUATE DIPLOMA IN **"COMPUTER SCIENCE"**
SUBJECT**: FUNDAMENTALS OF COMPUTER**
FULL MARKS : 100

Chapter	Topic
01.	**Introduction to Computer** Types of Computer System Functional Units Software Concepts I/O Devices, Storage media
02.	**Micro-Computer & Microprocessors** Micro Computer & Organization Basic of Microprocessor
03.	**Memory Organizations** Main Memory Secondary Memory
04.	**Number System**
05.	**Logic Design** Boolean Algebra Logic gates BCD,ASCII Codes Gate network design Flip flop, Register, Decoder, Encoder
06.	**Operating System** Concept of Operating System Job & Task Management Data Management Management of I/O devices Examples of O/S : DOS, WINDOWS
07.	**Concept of Office Automation** MS-Word MS-Excel Power Point
08.	**Case Study**

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POST-GRADUATE DIPLOMA IN **"COMPUTER SCIENCE"**
SUBJECT: **Data Structure and Algorithm**
FULL MARKS : 100

Chapter	Topic
01.	**Basic concepts (2)** Data Structures notation Notation Search Efficiency
02.	**Elementary data structures (4)** Arrays Records Points
03.	**Lists (3)** Linked lists Stacks Queues
04.	**Trees (3)** Binary trees – array representations Binary trees-record presentations General tree representations
05.	**Introduction to algorithm (2)**
06.	**Introduction and interpolation (2)**
07.	**Recursion (2)**
08.	**Searching (5)** Searching lists Searching arrays Searching trees Hashing
09.	**Sorting (5)** Insertion (sequential) sort Bubble Sort Quick sort
10.	**Class Test (2)**
11.	**Case Study**

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POST-GRADUATE DIPLOMA IN **"COMPUTER SCIENCE"**
SUBJECT: **Database Management System – I (Back End)**
FULL MARKS : 100

Chapter	Topic
01.	**Introduction to Database** a. Data and Information b. Evolution of Database c. RDMS d. Features of RDBMS
02.	**Designing Database** a. ER Model b. Normalization c. Steps in Designing Database d. Integrity constrains
03.	**Relationship Joins and Queries**
04.	**SQL** a. DDL b. DML c. DCL d. TCL
05.	**Transaction Processing**
06.	**Distributed Database**
07.	**Maintaining Database** a. Security b. Backup and Recovery
08.	**Case Study**

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POST-GRADUATE DIPLOMA IN **"COMPUTER SCIENCE"**
SUBJECT: **Programming Language-C**
FULL MARKS : 100

Chapter	Topic
01.	**Introduction** C as General Purpose, Structured, High Level Man Machine Language Structure of a simple C Program Editing and running simple C Program
02.	**Fundamentals** Character Set, Identifiers and Keywords Data Types Constants and Variables Expressions Statements Symbolic Constants
03.	**Operations and Expression** Arithmetic Operations Unary Operators Logical Relational Operators and Connectives Assignment Operators Conditional Operators Bit-wise Operators Library Functions
04.	**Data Input/Output**
05.	**Control Statements** The while statements The do-while statements The for statements Nested loops The if-else statements The break statements The continue statements The switch statements The go to statements The comma operators
06.	**Arrays and Pointers** One-dimensional arrays Two-dimensional arrays Declaration and simple use of Pointers Pointers and Arrays
07.	**Structures** Defining a Structure Manipulating Structures Manipulation of a linked-list

Chapter	Topic
08.	**Functions** General form of a function definition Simple use of functions Public and local function Functions, Arrays and Recursive Procedures Functions, Structures and Pointers
09.	**Data Files** Opening and closing a data files Working with the text files Creating and Displaying data files and structures
10.	**Case Study**

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POST-GRADUATE DIPLOMA IN **"COMPUTER SCIENCE"**
SUBJECT: **Web Development (Client Side Scripting)**
FULL MARKS : 100

Chapter	Topic
01.	**HTML**
02.	**CGI & DHTML**
03.	**Publishing Web Site**
04.	**Java Script**
05.	**Client Development using Java**
06.	**Case Study**

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POST-GRADUATE DIPLOMA IN COMPUTER SCIENCE

SYLLABUS FOR PART-II

Evaluation Criteria :

Class Attendance : 10%
Class Test   : 20%
Final Examination : 70%

Name of Subject:
1. Data Communication & Networking
2. Database Management System-II (Software Development)
3. System Analysis & Design
4. Operating System (Linux)
5. e-Commerce & Web programming (Server Side)
6. Term Paper & Syndicate Presentation
7. Viva-Voce

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POST-GRADUATE DIPLOMA IN **"COMPUTER SCIENCE"**
SUBJECT : **Data Communication and Networking**
FULL MARKS : 100

Chapter	Topic
01.	**Introduction to Data Communication** Evaluation Purpose of data Communication
02.	**Data Communication Systems Operators** Basic Terms and concepts Transmission Characteristics Transmission Models Synchronous and Asynchronous Transmission
03.	**Transmission Media**
04.	**Interfaces and Protocols** Types of Interfaces and Protocol used Concept of MODEM RS232D Communication Interface
05.	**Introduction to Networking** Client/Server Topology LAN/WAN/MAN/Intranet & Internet/Wireless LAN/Blue tooth File System and Disk Management Workgroup/Domain Network Security/Resource Sharing/VPN Email, HTTP, FTP,VOD,VOIP
06.	**Distributed Network Architecture** OSI Model Architecture and Protocols TCP/IP
07.	**Mobile Communication**
08.	**Case Study**

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POST-GRADUATE DIPLOMA IN **"COMPUTER SCIENCE"**
SUBJECT : **Database Management System-II (Software Development)**
FULL MARKS : 100

Chapter	Topic
01.	Introduction to Client-Server Application Development
02.	Principles of Interface Designing
03.	Introduction to Visual Tools
04.	Using labels, Butters, Tex boxes
05.	Variables, Controls and Operators
06.	Looping Arrays and Lists
07.	Functions
08.	Debugging in Visual Tools
09.	File Controls
10.	API
11.	Database
12.	Programming
13.	Application Development
14.	Case Study

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POST-GRADUATE DIPLOMA IN **"COMPUTER SCIENCE"**
SUBJECT: **System Analysis and Design**
FULL MARKS : 100

Chapter	Topic
01.	General concept of formal information systems
02.	Software Development Life Cycle
03.	Requirement Engineering tools
04.	Feasibility Study
05.	Cost Benefit Analysis
06.	Input/Output Form Design
07.	Introduction to OOAD, Iterative Development and Unified Process, Introduction to UML and its different nations, Use Case Modeling, Drawing System Sequence Diagram, Domain Model, Operation contracts, Interaction Diagram, GRASP Patterns and assigning Responsibilities, Use Case realization with GRASP patters, Modeling Generalization, Refining the Domain Model.
08.	Case Study

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POST-GRADUATE DIPLOMA IN **"COMPUTER SCIENCE"**
SUBJECT: **Operating System (Linux)**
FULL MARKS : 100

Chapter	Topic
01.	Introduction to Linux and Linux Files Systems
02.	Installation of Linux and Partitioning
03.	Installation and configuring DNS Serve
04.	Installation and configuring Mail Server
05.	Installation and configuring Web Server
06.	Installation and configuring Proxy Server
07.	Installation and configuring FTP Server
08.	Installation and configuring DHCP Server
09.	Configuring Devices in Linux
10.	Printing with Linux
11.	Linux System Administration
12.	Scripting.
13.	Case Study

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POST-GRADUATE DIPLOMA IN **"COMPUTER SCIENCE"**
SUBJECT: **e-Commerce and Web Programming (Server Side)**
FULL MARKS : 100

Chapter	Topic
01.	Use of Internet
02.	Ethics in Internet
03.	Security in the Internet i. Public Key ii. Private Key iii. Cryptography
04.	E-Governance
05.	VB Script
06.	ASP/PHP
07.	Web Database (MYSQL)
08.	Configuring and Administering Web Server
09.	Case Study

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Marks Distribution of Term Paper, Syndicate Presentation & Viva-Voce for all Diploma Courses

Part-II

Subject	Approved Marks	Remarks
Term Paper	75	
Syndicate Presentation	25	
Viva-Voce	100	