Post Graduate Diploma in Information and Communication Technology

Course Overview/Objective

Post graduate diploma in Information & Communication Technology is designed for

1. To build Smart Bangladesh needs to fulfill four pillars; smart citizen, smart government, smart economy and smart society. To achieve this goal, we need adequate numbers of skilled ICT manpower. This course would play a significant role to develop skill manpower for smart Bangladesh.

2.Those who are interested to be trained in the field of ICT to bring their own work mobility.

3.Those who have completed their education in others discipline rather than ICT but currently interested to choose ICT as a profession with higher deduction.

4.Those who are interested in imparting ICT training/teaching despite having graduation rather than ICT.

5.Manpower employed in various sectors need to acquire ICT related skills for their current activities.

6.Sometimes Government official needs to overcome computer aptitude test for their promotion.

Requirements

Graduate any discipline.

Course Project

Yes

Used Tools

Netbeans,Notepad++

Course Outline

PGDICT-101: Computer Fundamentals

Total Contact 2x26 = 52 Hours (Theory: 60%, Practical: 40%)

Theory Part: 1

Introduction to Computer; History & generation of Computers;, Concept of Computer System Unit; Types of Software; Concepts of Operating Systems and OS function; Programming Languages; Computer Memory Organization: Memory technology and Operation; Types of Memory; Function of ROM, RAM and Cache Memory; Functional mechanism of HDD and CD-ROM; Different type of Monitors & Printer; Type of Software and Utility program; Computer Virus and its types; I/O devices; Network & Internet.

Concept of Data and information; Number Systems; logic gates & functions; Binary Operation; logic gate design; flip-flop; Register.

Practical part: 2

Practice to manage official documentation and executive function using Ms-office 2007 software such as MS-word, MS- Excel, MS-Power Point and Basic Internet, Browsing and Email.

PGDICT-102: Operating System

Total Contact 2x26 = 52 Hours (Theory: 50%, Practical: 50%)

Theory Part: 1

Operating System: Its Role in Computer Systems; Process: Model and Implementation, Inter process Communication; CPU Scheduling, Memory Management, Virtual Memory, File System, Protection and Security, Paging, Segmentation, Remote procedure call, Storage management Logical versus Physical Assess Space, Swapping, Space Management, Real Time Scheduling & Multithreading.

Introduction to LINUX, UNIX, UNIX Kernel, Installation of Linux and Partitioning, UNIX Commands, Services, Device Structure, Memory Structure, Process and Jobs, File System and File Management, vi editor Shell Programming.

Practical part: 2

1. Windows 2008 Server Installation & Administration, Various Server Configuration, Active Directory Domain Services, Network Resource Management using Active Directory Domain Services, Active Directory Design and Security Concepts, Account Management, Configuring Group Policy, Configuring and Marinating the Active directory Infrastructure, Additional Active server Role, Server Management and Monitoring.

2. To Setup and configure their own Linux server, To Configure & manage major services such as web, mail, proxy, DNS and DHCP, Ftp to Secure the server and applications, To Backup important data, To troubleshoot services and network related problems. Configuring Devices in Linux, Linux System Administration.

PGDICT-103: **Programing in C**

Total Contact 2x30 = 60 **Hours (Theory: 50%, Practical: 50%)**

Section-1:

Language overview: Facts about C, What is C program? Why to use C? C environment Setup: Text Editor, The C compiler, Installation on Windows/Mac/Linux C Basic Syntax: Tokens in C, Semicolons, Comments, Identifier, Keywords, White space in C. C Program Structure (Example)

Section-2:

Data Types: Integer, Floating type, Variables: Declaration, Initialization, Lvalues, Rvalues. Constant and Literals: Integer, Operator, relational, Logical, Misc Operators.

Section-3:

Decision Making: if, if ....Else, Nested if, Switch Loops: While loop, for loop, do...while, Nested Loops, Break, continue

Section-4:

Array: Declaration arrays, Initialization, Accessing array elements, two dimensional arrays, initializing two dimensional arrays, Accessing two dimensional array, passing arrays as function arguments.

Section-5:

Strings: Copying Strings, Concatenation strings, comparing strings, searching strings.

Section-6:

Pointer: What are pointers? How to use pointers, Null pointers, Pointer Arithmetic, Incrementing a Pointer, Decrementing a Pointer, Pointer comparison, Link List.

Section-7:

Function: Defining a function (with example),Function Declaration, Calling a function, Function Arguments, Function call by value, Function call by reference .

Section-8: Final project

PGDICT-104: Database Management Systems

Total Contact 2x26 = 52 Hours (Theory: 60%, Practical: 40%)

Concepts of Database: (3X2) = 6 Hrs

File System & Database File System, Concepts Of Database, Database Architecture, Advantage Of A DBMS, Components Of Database, Type Of Database, Advantage And Disadvantage Of Each Type.

The Entity Relationship Model: (8X2) = 16 Hrs

Basic Concepts, Mapping Constraints, Keys, E-R Diagram, Entity Set, Extended E-R Features, Design of A E-R Database Scheme, Reduction Of E-R Scheme To Tables.

Exercise: E-R Model of Corporate Organizations/Banking Institution

Structural Query Language (SQL): (5X2) = 10 Hrs

DDL, DML, DCL; Indexing, Query Development: Basic SELECT, UNION, Relational Algebra and Calculus, Joining operations, Functions, Sub-Queries and Joins, Aggregate operations, NULL values and nested queries, Procedural Language, Data Integrity etc.

Home Exercise: E-R model using table's data Operation from MYSQL databases.

Relational Database Design: (7X2) = 14 Hrs

Pitfalls in Relational Database Design, Functional Dependencies, Database Normalization, Types of Normalization , Schema Refinement in Database Design, Normalization using Join Dependencies, Normalization using Multivalve Dependencies, Domain Key Normal Form, De-normalization.

Database Backup and Maintenance: (3X2) = 6 Hrs

Data Import/Import from External Sources, Backup Planning, Transaction Concurrency Control & Recovery Management.

Assignment: Database Design, Develop & Implementation Database using SQL Server/MS Access/Oracle, Develop Query, Form, & Report using Query/Form/Report Builders.

Book Recommended:

1. A silberschatz : Database System Concepts, McGraw Hill
2. Abay : Orcale Beginners guide, McGraw Hill
3. Steven Feuerstein : Oracle PL/SQL Programming

PGDICT-105: Communicative English

Total Contact 2x20 = 40 Hours

Speaking Skill, Introduction, Ice Breaking; Extempore Speech, Pronunciation Development; Basic Sounds and Common Mistakes; Reading Skill; A Short Orientation to Reading; Skimming, Scanning and other techniques; Reading Skill; reading a short story and discuss, selecting a motion for the next day; Speaking Skill; Debate; Speaking Skill; Presentation Skill Development;

Writing Skill; Comprehensive Peer Group Writing. Writing kill

Ways to apply against a job offer properly, Composing Cover Letter and Curriculum Vitae; Speaking Skill Submission of CV, How to face VIVA; Speaking Skill; Viva Voce; Listening Skill; Appreciative Listening Speaking Skill Dialogue and Role Play; Listening Skill Transactional Listening; Listening Skill

Interactional Listening; Writing Skill; E-mail Etiquettes; Listening Skill; Discriminating Listening (Intonation); Miscellaneous, Feedback Session

PGDICT-106: Web Site Design & Web Application Development

Total Contact 2x30 = 60 Hours (Theory: 40%, Practical: 60%)

HTML/HTML5: 16 Hrs

Used Editor, HTML elements, attributes, comments, heading paragraph, lists, head, Images, Table, form details, layout, Iframe, text field, dropdown list, color, color names, Color values, link, formatting, Div etc. HTML5 introduction, elements, canvas, Video, Audio, Input types, form attributes etc.

Practical: Web site Design using Editors.

CSS/CSS3: 16 Hrs

CSS Syntax, selector, unit, tables, Box model, border, outline, margin, padding, dimension, display, positing, floating, align, pseudo-elements & class, Image gallery, opacity, css ID & class, styling Background, Texts, fonts, links, Lists, Object positioning, CSS3 borders, text effects, 2D & 3D transformations, animations.

Practical: Web site Design using Editors.

JavaScript/JQuery: 18 Hrs

Statement of Javascript, comments, variables, data types, objects & events, functions, operators, comparison, conditional statement, error handling, input validation, array, strings, date & time, DOM (Documents object model), Object-based features, Different built-in objects etc.

How jQuery Works, the jQuery ready Function, What are jQuery Selectors?, Selectors Overview, Basics & Hierarchy, Basic, Content, Visibility, Attribute & Child Filters, Forms & Form Filters, jQuery DOM Traversal & Manipulation, jQuery Event Model, Handling Events with jQuery, Ajax introduction, jQuery Ajax Functions etc.

Practical: Web site Design using Editors.

Drawing: 8 **Hrs**

Basic Image properties and how to set/change them in adobe Photoshop/Paint editors, Concept of layers, Color concepts, text, texture, brightness, contrast, filters and effects etc.

Web Hosting: 2 **Hrs**

Definition of Web Hosting, How will choice a Good Domain, How will choice a good web hosting company, Different types of Web Hosting, File upload/download from Web Hosting Server using FTP method.

Book Recommended:

1. L I Cohen, J I Cohen : The web Programmers Desk References
2. Web References : http://www.w3schools.com
3. Cliff Wootton : JavaScript Programmer's Reference

(Programmer to Programmer)

PGDICT-201: System Analysis & Design

Total Contact 2x26 = 52 Hours (Theory: 80%, Case study: 20%)

System Concept: Definition, Characteristics, Elements of System, Physical and abstract System, Open and closed system, man-made information systems.

System Development life cycle: Various phases of system development, Consideration for system planning and control for system success.

Different Types of Information; Attributes of Information; Roles, Tasks and Attributes of a system Analyst; Sources of Information; Information Gathering Techniques; Handling of Missing Information; Steps of System Analysis; Cost-Benefit Analysis; Design of an information System; Network Models for Project Time Estimation; Estimation of Confidence Levels; Simplex Method for Minimization of Project Time; Project Effort Analysis Methods; Designing of

Inputs and Outputs; Project Team Organization; Database and Files Design; Project Management and Documentation; Analysis of System Maintenance and Upgrading; Ethics and Privacy; Control and Security.

Feasibility study: Determination of feasibility study, Technical, Operational & Economic Feasibilities, System performance constraints, and identification of system objectives, feasibility report.

Tools of Structured Analysis: Logical and physical models, Context Diagram, Data Dictionary, Data Flow Diagram, form driven methodology, IPO and HIPO charts, Gantt Charts, System Model, Pseudo Codes, Flow charts System, Decision Tree, Decision Tables, Data Validation etc.

PGDICT-202: System Maintenance & Troubleshooting

Total Contact 2x27 = 54 Hours (Theory: 30%, Practical: 70%)

Introduction to System: (2X15) = 30 Hrs

Basic Component to System Unit, Component of Motherboard, Processor, Bus Architecture & Interfaces, Installing adapters (Cards) & Peripheral Devices (Printer, Scanner, Webcam etc.), Details Power System and safety, Expansion bus and its types, Memory unit and types, CRT and LCD Monitor, Types of Printer, BIOS and CMOS, Laptop De-assembly and Assembly, PC De-assembly and Assembly, CPU charteristic, COM Port, SATA, IDE, Cable connection, POST and Booting process, troubleshooting booting process

Case study: Hardware Problem & solving technique with explanation.

Network Maintenance and Troubleshooting: (2X5) = 10Hrs

Fundamentals of Networking, Networking Media & Hardware, Storage System & Backup Media, Preparing and Using LAN, Internet Basic, Connecting using MODEM, Video Conferencing, Serial and Parallel Communication, network troubleshooting and Maintenance.

Software Troubleshooting: (2X7) = 14 Hrs

Understanding Operating Systems and Installation (Windows XP/7), Partitioning & Formatting Hard Disk, Dual Booting and multibooting Operating System, Installation and uninstalling software, Device driver software Installation, System Utilities, Virus Protection & Security Issues, Common software problem and its solution, Data Backup and Recovery plan.

PGDICT-203: Advanced Web Technology with Programming

Total Contact 2x30 = 60 Hours (Theory: 40%, Practical: 60%)

PHP/ MYSQL - (30 Hrs)

Basic Concept of Server Site Programming Language, Software Installation and Run, Advantage of using PHP for web development, How Run PHP Code From Server, Syntax, Variables, Data Types, String operations, Operators, Constants, Looping/Conditional Statement, Array, Function, Super Global Variables, $_GET & $_POST Method, Date And Time, Include & Required File, File Upload, Cookies, Session, Error Handling, Mail Function, PHP Built-in-Function.

What is database? Table, Field, View, Basic SQL (Database Connects, Database Create, Table Create, Insert, Delete, Update, and Search), ER Diagram, Develop and Design form with Assignment/Project Works

Used Tools: Notepad++

.Net Framework (C# & MY SQL Server) - 30Hrs

- .NET Executables and the CLR; A .NET Tested for C# Programming; Visual Studio;
- First C# Console Application; Namespaces; Data Types; Conversions; Control Structures; Subroutines and Functions; Parameter Passing; Strings; Arrays; Console I/O; Formatting; Exception Handling
- Classes; Access Control; Methods and Properties; Asymmetric Accessor Accessibility; Static Data and Methods; Inheritance; Overriding Methods; Abstract Classes; Sealed Classes; Access Control and Assemblies.
- Components; Interfaces; System. Object; .NET and COM; Collections;
- Copy Semantics in C#; Generic Types; Type-Safe Collections; Attributes
- Anonymous Methods; Random Number Generation; Events
- Creating Windows Applications Using windows form Application; Partial Classes; Buttons, Labels and Textboxes; Handling Events; List box Controls and other visual tools.
- Using MSSQL Server (Database Connects, Database Create, Table Create, Insert, Delete, Update, and Search etc.)

Used Tools: Visual Studio 2008/2010/2012/2013, MS SqlServer 2012

PGDICT-204: Data Communication & Networks

Total Contact 2x29 = 58 Hours (Theory: 80%, Practical: 20%)

Fundamental and Data Communication: (2X12) = 24 Hrs

Introduction: uses of Computer Networks, A Communication model, Communication & Networks Goal, Protocols, Protocols Architecture & Standard, Standard Organization, Line configuration, Topology, Transmission mode, Synchronous and Asynchronous Transmission, Categories of networks, The OSI model, TCP\IP protocol suite, Comparison of the OSI model & TCP/IP.

Data Communication: Analog & Digital Signal, Analog & Digital Data Transmission, Data Encoding & Modulation, Transmission media Data transition interfaces, Data Link control, multiplexing error Detection & Correction.

Network and Its Technology: (2X12) = 24 Hrs

Local Area Networks: LAN Technology, LAN Systems, Network Addressing- Masking, Sub- netting, Internetworking Routing & Devices, IP Address: IPv4 and IPv6. Wide Area Networks: Circuit Switching, Packet Switching, WAN Protocols & Technology, Address Resolution Protocol (ARP), Carrier sense multiple accesses with collision detection (CSMA/CD), Local Talk, Token Ring, Fiber Distributed Data Interface (FDDI).

Network Applications: (2X5) = 10 Hrs

Design network, cabling, Client-Server model, Dynamic Host control protocol, Domain Name System, Hypertext Transfer protocol. File Transfer protocol, Simple Mail Transfer Protocol, Simple Network Management protocol, World Wide Web, Network Troubleshooting, Network Security, firewall and cryptography, Network security best practices, Elements of Network security, Component of Network Security.

PGDICT-205: Project Works

Total Contact 60 Hrs

Technical English 2X9 = 18 Hours

Bi-directional technical communication demands specific to computer and information systems. Topics are technical research methods and approaches, critical analysis of technical documents, synthesis of data, information and knowledge gained through research and critical analysis, creation of accurate technical documents, and effective delivery of technical material via oral presentations supported by visual media.

Project Works 2X21 = 42 Hours

Project Analysis, Documentation, Preparation, Implementation & Presentation. Every student will select a real life industry based project with proper guide of local supervisor/Industry Supervisor and will complete the project within specified time schedule.

Course Summery

Course Type :

Long Course

Course Duration :

12 Months

Course Hour(s) :

600

Classes :

150

Tuition Fee :

30000.00

Batch:

50

Reg Deadline:

27 Jul 2025

Class Shift:

Evening

Class Start:

27 Jul 2025

APPLY ONLINE

CLASS SCHEDULE

Sunday [5:00 PM-9:00 PM]

Tuesday [5:00 PM-9:00 PM]

Thursday [5:00 PM-9:00 PM]

COURSE CORDINATOR

Debasis Paul

Cordinator

Link

PDF