

International Islamic University Chittagong (IIUC)

Faculty of Modern Sciences

Department of Computer Science and Engineering

Syllabus of

‘Diploma in Computer Science (DCS)’

Detail Syllabus

Semester-I

DCS-101- Computer Basics

Introduction of computer, types, history and generation of computer; Basic organization and functional units of computer, Input and output devices; Binary, decimal, octal and hexadecimal numbers, conversion between different number systems, BCD and ASCII codes; Integer and floating number representation; Different types of gates and their truth tables; Boolean algebra; Types of software and languages; Language translator, interpreter, compiler; Operating Systems: introduction, function and types of operating system; Goals of office automation.

DCS-102-Computer Applications

This Course contents office packages like Word Processing (Microsoft Word 2000/XP), Spreadsheet Analysis (Microsoft Excel 2000/XP), Presentation Software (Microsoft PowerPoint 2000/XP), Database software (Microsoft Access 2000/XP), Norton Utilities and Anti Virus Software, Internet, Basic concept of DOS and other OS.

DCS-103 Microcomputer Troubleshooting

This courses aim is to teach troubleshooting basics, steps, assembling and disassembling, partition and formatting, precautions, preventive maintenance, troubleshooting hardware and software components, functions of different components of microcomputer.

DCS-104 Computer Programming

Programming concepts; Program development stages; Flow charts; Structured programming language: identifiers and keywords, data types, variable declaration, expression, statement, operators; Scope rules and storage classes; Library functions: data input and output; Control statements; Function; Recursion; Array; Pointer; User defined data types: structures, unions, enumerations; Data files; Preprocessors; Command line arguments; Graphics.

Reference Language: C

DCS-105 Database Management System and Oracle

This course includes database fundamentals, database management system, Database system application, Database system versus file system, View of data, Entity relationship data model, Relational data model, Database administration, Database system structure, Data dictionary, Entity sets, Relationship sets, Mapping Cardinalities, Keys, Attributes, Weak entity sets, Database Schema. Relational Algebra and SQL.

Object Relational Database Management System, About PL/SQL and its environments. Writing Basic PL/SQL statements, Single-Row-Functions, Displaying Data from multiple tables, Aggregating data using Group Functions. Sub queries, Manipulating Data, Creating and Managing Tables including constraints. Controlling User Access, Declaring Variables, writing Executable Statements.

DCS-106 Computer Networking

This course includes basic network concept, Network Accessories, Network software, Network Protocol, Network topologies, Types of Network, OSI architecture, routing and IP address, communication by networking and its application.

DLL: Error detection and correction, the channel allocation problem, Multiple Access Protocols, Ethernet, Wireless LANs, Broadband Wireless, Blue tooth etc. Routing Algorithms, Congestion Control Algorithms, Quality of service, Internetworking, Network Security: Cryptography, Symmetric-key Algorithm, Digital signature, Communication Security, Web security etc.

Semester-II

DCS-201 Internet & Web Programming

Introduction, Internet services, Impacts of internet, Internet structure protocols and access overview, Internet protocol model overview, Internet addresses, Internet protocols, Transport layer, Upper layer protocols, Internet access & applications; Router technology: introduction, network fundamentals, internet routing & new developments, router market, Web server, from internet, intranet to extranet; How WWW Works: Hyper Text Transfer Protocol (HTTP); Web Servers; Web access; Related Web capabilities; WWW proxies; Future of the web; WWW technology - virtual reality and the VRML, intranet and firewalls.

Introduction to web and DHTML, Basic DHTML tags, Uploading web pages to the web server, XML, Introduction to PHP, Variable, Data types and Control structures, Functions etc. Java Scripts and a Project of web page design.

DCS-202 Operating System

This course is designed for learning about computer organization, hardware assembling, familiar with hardware Peripherals, concept on operating system, designing and application of operating system, memory and storage management, File management, distributed system structure and coordination and related case studies on respective operating system.

DCS- 203 Server and Router Configuration

The course has been developed for information technology (IT) professionals so that they can design, configure, plan, implement, and support both Microsoft Windows 2003 Server and Linux Server.

The course has been developed for Network Administrator so that they can install, configure, administer, monitor, and troubleshoot Cisco Router.

DCS-204 Visual Basic

Introduction to Visual Basic programming, Data types, Scope and lifetime of variables, Constants, Arrays, Statements and library functions, Conditional statements, Looping statements, Introduction to procedures, Arguments and parameters, Introduction to controls, Forms, Button, Text Box, Combo Box, List, Menu etc. Setting properties of objects, Showing and hiding forms, Order of events, Multiple forms, MDI form, Startup and end of applications, An introduction to error handlers, debugger, The Package and Deployment Wizard, Application Wizard, Data access using the Data Form Wizard and the data control, Classes, An introduction to ActiveX controls within Visual Basic, Report generation.

DCS-205 Multimedia System and Video Editing

This course includes introduction to Multimedia, Products and Evaluation, Hardware, Operating system and Software, Graphics designing, Digital Audio, Video, Animation, Product Design, Authoring Tools and Multimedia the Internet. This course is also contents Introduction to web, HTML and Basic HTML tags.

Conventional and computer assisted animation languages, methods of controlling animation, basic rules of animation, problems peculiar of animation, video editing tools and techniques i.e. MAYA and 3D Studio.

DCS-206 Project

Project in Networking: A comprehensive project work is assign to each of the student they have to analyze the requirements to establish a complete network of any organization, design the network practically, configure the routers if necessary and submit a complete project report.

Project in Database: A comprehensive project work of DBMS is assigned to each of the student, they have to analyze the systems and design the software for any industry/organization/institute based on Visual Basic and Oracle. They also submit a complete project report.

Project in Graphics & Web Designing: A comprehensive web based project work is assigned to each of the student, they have to analyze and develop a web page of industry/organization/institute, which is capable to maintain web database. They also submit a complete project report.