

UNIVERSITY OF CALICUT



IT MISSION PROGRAMME

Regulations, Scheme of Evaluation Course, Structure Syllabus for

DIPLOMA IN COMPUTER APPLICATIONS

(Fast track Scheme - with effect from 2013 Admission)

REGULATIONS

1. **Duration** of the course shall be 6 months (One Semester) conducted in fast track scheme. Four theory papers, one practical paper and a project work, shall be the course requirements in the semester.
2. **Selection and Eligibility for Admission:** Candidates who have passed Higher Secondary Examination or equivalent are eligible for admission.
3. **Evaluation** of all theory papers and practical examination/project work will be on the basis of existing University norms. The Grade range shall be Grade A- 60% and above, Grade B- 50%-59%, Grade C- 40%-49%, below 40% FAILD.
4. **Project Work & Viva:** The Project work should be carried out during the period of the course in the Institution. Every student should do the Project individually and no grouping is allowed. All the candidates are required to get the approval of their synopsis and the guide before commencement of the project from the Institution and the matter may be intimated to the University by the Institution. The project will be reviewed periodically every month by the Institution. At the end of the programme the candidate shall submit the Project report (one bound copy and one soft copy) duly approved by the guide. Evaluation of the project should be conducted by a board of examiners appointed by the University. (Mark Distribution: Content 30% + Methodology 30 % + Presentation 20 %, and Via- voce 20 %). If project work and the report are found to be not up to the expected standard, the examiners can ask the candidate to modify and resubmit the project report after incorporating the suggestions of the examiners. Such reports shall be resubmitted within the stipulated period suggested by the examiner(s)

COURSE STRUCTURE AND SCHEME OF EVALUATION

Semester 1

Sl.No	Course Code	Course	Number of Contact Hours	Duration of examination (Hrs)		Marks
				Theory	Practical	External
1	DCA1C01	Fundamentals of Computers and Office Automation	75	3		100
2	DCA1C02	Object Oriented Programming in Java	75	3		100
3	DCA1C03	Database Management Systems	75	3		100
4	DCA1C04	Introduction to Internet and Web Programming	75	3		100
5	DCA1C05	Practical 1	75	-	3	100
6	DCA1C06	Project Work & Viva-voce	50	Dissertation (150 Marks)	Viva-voce (50 Marks)	20
		Total	425		-	700

SYLLABUS

DCA1C01 – Fundamentals of Computers and Office Automation

Unit - 1

Introduction to Computers, generations of computer, Classification of Computers based on Purpose, Operation & Size, Anatomy of Computers, Basic I/O Devices, Block Diagram of CPU, Memory units- Primary and Auxiliary memory, Storage Devices, System Software, Operating Systems, Programming Languages, Application Softwares.

Unit - 2

Overview of Operating Systems, function and its types, features of Windows and Linux, Meaning of Multitasking, File system, desktop components, control panel, Device managers, File Manager and Program Manager, Display properties, taskbar properties.

Unit - 3

Documentation Using a Word Processor (Open office writer or MS-Word), Creating and Editing Documents, Formatting Document, Spelling and Grammar Tools, Document Dictionary, Page Formatting, Bookmarking, Advance Features : Mail Merge, Macros, Tables, File Management, Printing, Styles, Linking and embedding object, use of Templates.

Unit - 4

Electronic Spread Sheet (Open Office Calc or MS-Excel) - Introduction to Spread Sheet, Creating and Editing Worksheet, Formatting and Essential Operations, Formulas and Functions, Charts, Advanced features: Pivot table & Pivot Chart, Linking and Consolidation.

Unit - 5

Presentation using (Open Office Impress or MS-Power Point): Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Charts, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effects.

REFECENCES:

1. Fundamentals of Computer by V Rajaraman; Prentice Hall of India Pvt. Ltd., Computer Fundamentals, PK Sinha, BPB Publications, 2004
2. Fundamentals of Information Technology, S. Jaiswal, Galgotia Publication, New Delhi, 1999.
3. Professional Office Procedure, Susan H Cooperman, Printice Hall.
4. Information Technology: Principles, Practices and Opportunities, James A Senn, Printice Hall.

DCA1C02 – Object Oriented Programming in Java

Unit - 1

Problem analysis and logic development, Concept of Algorithm & Flow chart development, Symbol used to draw flow chart, Typical examples of flow chart and algorithms. Principles & Concepts of Object Orientation programming, Abstraction, Encapsulation, Modularity, Hierarchy, Basic Concepts of Object, Class, Attribute, Operation, State, Behaviour, Identity, Relationships/Association, Polymorphism, Message Passing.

Unit - 2

Introduction to Java : History, Versioning, Java Virtual Machine, Packages, Primitive Data Types, Comments, Operators and Expressions, Decision making, Branching and Looping, for Statement, if Statement, while and do while Statements, switch Statement, break, continue Statement, Operators - Casts and Conversions, Keywords, Simple Java Programs.

Unit - 3

Classes, Objects and Methods, Arrays, Strings and Vectors, Interfaces, Packages, Multi threaded programming, Exceptions.

Unit – 4

Applet Programming, Introduction to AWT, Graphic Programming, Drawing Lines, Rectangles.

Unit – 5

Managing Input / Output files, Java Collection, JDBC, Concepts of J2EE.

REFECENCES

1. Programming With Java - a Primer, E Balagruswami, Third Edition, Tata McGrawHill, 2008.
2. Java 2- Fast and easy Web development, Andy Harris, Prentice Hall
3. Java – Server and Servlets, Peter Rossbach & Hendrisk Schereliber, Person Education
4. Developing E Commerce Sites, Vivek Sharma & Rajiv Sharma, Person Education
5. Web Programming with ASP, Matt J Crouch, Person education.

DCA1C03 – Database Management Systems

Unit - 1

Introduction to data bases, File Systems Versus DBMS, Advantages and Disadvantages of using DBMS, Database administration and users. Data Models, Schemas, and Instances, Types of Data Models, Three Schema Architecture and Data Independence, Database Languages and Interfaces, Conceptual Data Models for Database Design: Entity Relationship Models, Concept of Entity, Attributes, Domains, Constraints, Keys.

Unit - 2

Relational database design: Relations, Domains and Attributes records, Tuples, Keys, Normal forms: First, second and third normal forms, Concept of relations with more than one Candidate key.

Unit – 3

Introduction to Structured Query Language (SQL), Data Definition Language (DDL), data types, creation, insertion, viewing, updation and deletion of tables, modifying the structure of the tables, renaming, dropping of tables.

Unit – 4

Data Manipulation Language (DML): Select commands, Logical operators, SQL Operator, BETWEEN, AND IN, LIKE, IS NULL.

Unit – 5

SQL Functions: Number, Character, Date, Conversion, Group Functions, Group by & Having Clause, Joins: joining multiple tables and joining a table to itself, SQL Queries, Reports.

REFECENCES:

1. Database Concepts & Systems, 2/ed – Bayross, O'Reilly, Shroff Publishers & Distributors Pvt. Ltd.
2. Database Management System - Date ,C.J., Galgotia Publications
3. Fundamentals of Database System - Elmasri, R.A.,Navathe, Shyam B. Narosa Publishing House
5. Learning SQL (2nd ed.), Alan Beaulieu, Mary E. Treseler. ed., O'Reilly, 2009.

DCA1C04 – Introduction to Internet and Web Programming

Unit - 1

Introduction to Computer networks, Networks - LAN, WAN - Client – Server, Topology, categories of networks, Network Models, Layered model, OSI and TCP/IP models, Transmission media, Wired and unwired media, Web fundamentals: History of internet, basic services, search engines, web browsers, web servers, Configuring network host - setting hostname - assigning IP address, File Transfer Protocol(FTP), Simple Mail Transfer Protocol(SMTP) and Post Office Protocol(POP), Setting up Intranet Services.

Unit – 2

WWW, W3C, Web Browser, Web server, Web hosting, Web Pages, DNS,URL, Web programming - client-side scripting and server-side scripting, Introduction to HTML, Basic formatting tags: heading, paragraph, underline break, bold, italic, underline, superscript, subscript, font and image. Di_erent attributes like align, color, bgcolor, font face, border, size. Navigation Links using anchor tag: internal, external, Table tag, HTML Form controls: form, text, password, textarea, button, checkbox, radio button, select box, hidden controls, Frameset and frames.

Unit - 3

CSS: Introduction to Cascading Style Sheet (CSS), CSS Syntax, Comments, Id and Class, Background - Background Color, Background Image - Text - Text Colour, Text Alignment, Text Decoration, Text Transformation, Text Indentation - CSS Font - Font Families, Font Style, Font Size - Setting Text Size - CSS Lists Different List Item Markers, Unordered List, Ordered List, Marker - CSS Tables - Table Borders, Collapse Borders, Table Width and Height, Table Text Alignment, Table Padding, Table Colour.

Unit – 4

Javascript: Introduction, Client side programming, script tag, comments, variables, Document Methods: write and writeln methods, alert, Operators: Arithmetic, Assignment, Relational, Logical, Javascript Functions, Conditional Statements, Loops, break and continue. Events Familiarization: onLoad, onClick, onBlur, onSubmit, onChange

Unit – 5

PHP: Introduction to PHP, Role of Web Server software, including files, comments, variables and scope, echo and print, Operators: Logical, Comparison and Conditional operators, Branching statements, Loops, break and continue, PHP functions, Working with PHP: Passing information between pages, HTTP GET and POST method, String functions: strlen, stripslashes, strpos, strcmp, substr, str_replace, strtolower, Array constructs: array(),list() and foreach(),

REFECENCES

1. Data Communications and Networking, Fourth Edition by Behrou A Forouzan, McGraw-Hill reprint, 2011.
2. Linux Administration - A Beginners Guide, Third Edition, Steven Graham and Steve Shah, Dreamtech, 2003.

DCA1C05 – Practical 1

List of experiments

Experiments should include but not limited to:

A. Office Automation

1. Word processing

- a. Creating and formatting a document
- b. Prepare a notice
- c. Draft a letter and perform mail merge

3. Presentation

- a. Prepare a presentation for a given topic – include image, audio and video objects

4. Spread sheet

- a. Use spread sheet to create a rank list for admission to a course with various options.

B. JAVA Programming

1. Write algorithm and Draw flow chart to solve basic problems like
 - a. Find the sum of first N natural numbers
 - b. Find the mean and median of a set of given numbers
 - c. Find the solution for a quadratic equation
2. Write a program in Java to implement the formula ($\text{Area} = \text{Height} * \text{Width}$) to find the area of a rectangle.
3. Write a program in Java to find product of two matrices A and B. Take the size and values of the matrixes from the user.
4. Write a JAVA program to compute the sum of the digits of a given integer.
5. Write Java programmes to familiarise the following
 - a. Freehand Drawing
 - b. Illustrate Mouse Events
 - c. Creating Menu Bar
 - d. Package example
 - e. Exception handling example

C. DBMS

In this session you need to create database for an Employee management system of an organisation.

Create tables using MySQL and enter a few sets of meaningful data and answer the following queries.

1. List the department wise details of all the employees.
2. Find out all those departments that are located in more than one location.
3. Find out the list of employees working on a project.
4. List the personal details of the employee whose employee id is 101

D. Internet and Web Programming

- a. IP address - configuring.
- b. Configuring network host - setting hostname - assigning IP address.
- c. Creating an e-mail account
- d. Creating a web page using HTML
- e. Create simple HTML web page having the background in a particular colour and title and content in different colours.
- f. Create a sample web page with Javascript
- g. Use of CSS in web page development, Table and List creation
- h. Create an HTML document giving details of your name, age, address, mobile number with proper alignment.

General Pattern of Question Paper

Code:

**Reg. No:
Name :**

DIPLOMA IN COMPUTER APPLICATIONS

Month &Year of Examination

(with effect from 2013 Admission)

Course Code: Course Name :

Time: 3 Hours

Total Marks: 100

PART A

(15 Questions; Answer any 10; Each Question carries 3 marks)

PART B

(15 Questions; Answer any 10; Each Question carries 5 marks)

PART C

(4 Questions; Answer any 2; Each Question carries 10 marks)
