BON SECOURS COLLEGE FOR WOMEN
Nationally Accredited with 'A' Grade by NAAC
UGC Recognized 2(f) and 12(B) Institution
VILAR BYPASS, THANJAVUR - 613 006

DEPARTMENT OF COMPUTER APPLICATIONS

PROGRAMME OUTCOMES

PO1.Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

PO2.Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

PO3. Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.

PO4. Effective Citizenship: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO5. Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

PO6. Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.

PO7. Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes

PROGRAM SPECIFIC OUTCOME:

PSO1: Understanding the principles of Computer Applications and its connections with other disciplines.

PSO2: Procedural knowledge that creates different types of professionals related to Computer applications, including research and development, teaching and industry, government and public service.

PSO3: Skills and tools in areas related to computer applications and current developments in the academic field of study.

PSO4: Use knowledge, understanding and skills required for identifying problems and issues, collection of relevant quantitative and/or qualitative data drawing on a wide range of sources, and their application, analysis and evaluation using methodologies as appropriate to Computer Applications for formulating solutions.

PSO5: Apply Computer Applications knowledge and transferable skills to new/unfamiliar contexts.

PSO6: Demonstrate subject-related and transferable skills that are relevant to industry and employment opportunities.

COURSE OUTCOMES

Programming in C - 16SCCCA1

1. Define structure and terminology used in C Programming (L1)
2. Identify data types, constants, variables, identifiers, operators, type conversion and other building blocks of C Language.(L1)
3. Learn syntax and semantics of control structures and looping(L3)
4. Illustrate the concepts of arrays and strings(L4)
5. Develop the knowledge about dynamic memory allocations and pre-processor(L6)

Programming in C (P) - 16SCCCA1P

1. Define and formulate a program's requirements(L1)
2. Demonstrate an understanding of computer programming language concepts(L3)
3. Identify the correct and efficient ways of solving problems(L1)
4. Implement the algorithms and analyze their complexity of real time applications using the power of C language features(L3)
5. Differentiate the process of compiling, linking, and running a program(L4)
6. Enable effective usage of arrays, structures, functions, pointers, files and command line arguments(L6)
7. Develop programs that perform operations using user defined data types, union and enumeration.(L6)

Programming in C++ - 16SCCCA2

1. Remember the characteristics of Procedure and Object Oriented Programming Languages(L1)
2. Understand the fundamentals of C++ programming structure, function overloading and constructors. (L1)

3. Evaluate C++ features such as composition of objects, Operator overloading, inheritance, Polymorphism etc. (L5)

4. Implement Object Oriented Programs using templates and exceptional handling concepts.(L3)

5. Analyze the strengths and applications of standard template library in C++ language.(L4)

6. Apply the concepts in object oriented programming in terms of software reuse and managing complexity to solve real-world problems.(L3)

Programming in C++(P) - 16SCCCA2P

1. Designing programs using appropriate predefined functions and classes in C++.(L6)

2. Develop applications using Friend functions, Inheritance and polymorphism.(L6)

3. Demonstrate the use of inheritance and pointers when creating or using classes and create templates (L3)

4. Examine a C++ application using the concepts of Templates(L4)

5. Implementing stream I/O, Files and usage of the available classes to handle stream objects.(L3)

6. Evaluate the ability to understand and use exception handling and file handling mechanism.(L5)

7. Apply the concepts and principles of the programming language to the real-world problems and solve the problems through project-based learning.(L3)

Programming in Java - 16SCCCA3

1. Understand the concept of OOP and how it differs from procedure oriented paradigm.(L1)

2. Classify classes, objects, members of a class and the relationships among them needed for a specific problem. (L2)

3. Implement Java applications using packages and interfaces.(L3)

4. Solve run time errors by learning exception handling mechanisms.(L3)

5. Illustrate multi threading concepts and its applications.(L4)

6. Develop applications using stream I/O and applets.(L6)

Programming in Java (P) - 16SCCCA3P

1. Recognize stand-alone and web based applications(L1)

2. Identify the execution of programs written in Java language.(L1)

3. Apply object-oriented programming features to program design and implementation.(L3)

4. Relate multithreading concepts and its applications.(L3)

5. Evaluate programming skills by applying constructors and command-line arguments.(L5)

6. Demonstrate the usage of packages, interfaces and multi threads.(L3)

7. Create GUI based applications using Applets and AWT controls.(L6)

Working Principles of Internet - 16SNMECA1

1. Understand the basics of internet and its architecture.(L1)
2. Know about how to establish connection and communication on the internet.(L1)
3. Understand how the WWW works and able to use internetworking devices.(L1)
4. Aware of online shopping, games and entertainment.(L3)
5. Able to know network protection mechanism and security issues. (L4)
6. Identify virus and anti-virus software.(L1)

Database Systems - 16SCCCA4

1. Define basic concepts and understand applications of database systems.(L1)
2. Execute unary/binary/set/aggregate queries in Relational Algebra and Calculus.(L3)
3. Interpret SQL queries to perform CRUD operations on database. (Create, Retrieve, Update, Delete) (L2)
4. Execute Insert, update and delete data into the existing tables.(L3)
5. Organize Entity-Relationship (E-R) model from specifications and transform to relational model(L3)
6. Understand principles of database transaction management, database recovery and security. Develop Normalization and design database which possess no anomalies.(L1)

Database Systems (P) - 16SCCCA4P

1. Understand basic concepts of database(L1)
2. Identify the database design methodology.(L1)
3. Compare SQL syntax used with MYSQL.(L2)
4. Demonstrate how to retrieve and manipulate data from one or more tables.(L3)
5. Execute MYSQL statement to perform set operations and join operations..(L3)
6. Create MYSQL queries to implement aggregate functions..(L6)
7. Execute nested sub queries and create views in database.(L3)

Computer Applications in Business - 16SACAOB2

1. Identify the fundamental hardware components that make up a computer's hardware and the role of each of these components(L1)
2. Pivot Create, edit, save, and print documents to include documents with lists and tables Manipulate documents using functions such as find and replace; cut, copy, replace..(L1)
3. Extract basic worksheets by entering text, numbers, and formulas.(L2)
4. Generating pie and column charts by using the chart wizard.(L4)
5. Summarize of basic Accounting concepts and principles.(L2)
6. Transfer Accounting and Inventory Masters, Vouchers and BasicReports in Tally(L3)

Computer Applications in Business (P) - 16SACAOB2(P)

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Fundamentals of Information Technology- 16SNMECA2

1. Understand basics of computer, its generation and classification and anatomy of the digital computer.(L1)
2. Know the fundamental hardware components that make up a computer's hardware, the role of each of these components and various input and output Devices. (L1)
3. Understand the basics of computer software and the programming languages, various operating systems and its classification and the concepts of database management systems.(L1)
4. Learn the basics of computer networks, email, World Wide Web and the concepts of web design.(L2)
5. Aware how computers used in home, education, entertainment, science and medicine. (L2)
6. Able to understand the concepts of internet security and computer viruses.(L3)

Page Maker - 16RSBE4:1

1. Understand marketable desktop publishing skills.(L1)
2. Understand modifying text in multiple pages(L1)
3. Implement Documents and Templates, add text into documents using various methods, and apply different formatting styles to characters and paragraphs. (L3)
4. Locate graphics, create objects using various tools, and add effects to objects.(L2)
5. Applying color to Text and Graphics and using Mail merge (L3)
6. Identify a publication and export it into PDF file.(L1)

Data Structures and Algorithms - 16SCCCA5

1. Able to Interpret how data organized in the computer memory.Understand the elementary data structure, implementation and application.(L2)
2. Demonstrate advantages and disadvantages of specific algorithms and data structures.Use the appropriate data structure in context of solution of given problem.(L3)

3. Understand the structure of tree and graph representation.Able to apply the sorting and searching algorithms for real world problem.(L1)
4. Understand the concepts of Greedy method and its applications.(L1)
5. Understand the concepts of back tracking method and its applications.(L1)
6. Demonstrate a familiarity with major algorithms and data structures.(L3)

Operating Systems - 16SCCCA6

1. Classify the main responsibilities of a contemporary operating system (OS) and to explain the history leading to their current form(L2)
2. Explain the important computer system resources and the system in their management policies and algorithms. (L2)
3. Discover and analyse the memory management and its allocation policies. (L3)
4. Compare the process management policies and scheduling of processes by CPU(L4)
5. Identify use and evaluate the storage management policies with respect to different storage management technologies. (L1)
6. Identify the role of file manager and file management policies.(L1)

Digital Computer Fundamentals - 16SCCCA7

1. Perform Number Conversions from one System to another System (L3)
2. Learn microprocessor with the help of basic knowledge of digital electronics.(L1)
3. Identify the logic gates and their functionality (L1)
4. Apply Boolean laws and rules to simplify simple expressions. (L3)
5. Experiment combinational and sequential circuits. (L4)
6. Understand how logic circuits and Boolean algebra forms as the basics of digital computer. Demonstrate the building up of Sequential and combinational logic from basic gates. (L1)

Computer Graphics - 16SMBECA1:1

1. State the uses of hardware devices and understand the structure of modern computer graphics systems (L1)
2. Describe the basic principles of implementing computer graphics primitives and Familiarity with key algorithms for modeling and rendering graphical data.(L2)
3. Implement the algorithms to scan, convert the basic geometrical primitives, transformations, area filling, clipping. (L3)
4. Demonstrate the idea to communicate with graphical systems using UI and interpret the methods for 3D display.(L3)
5. Understand the principles of 3D transformation and its methods.(L1)

6. Differentiate the working principles of visible surface detection methods.(L4)

Computer Graphics and Animation (P) - 16SCCCA5(P)

1. State practical knowledge in computer graphics and animation related problems.(L1)
2. Identify basic selection tools and edge refinement to isolate and edit parts of an image.(L1)
3. Define composite images that demonstrate advanced selection and layering techniques(L1)
4. Execute layers through ordering, positioning, scaling, rotation, and adjustments.(L3)
5. Apply painted masks, selection-based masks, gradient masks, and blend modes to create sophisticated image effects.(L3)
6. Use preset brushes and custom brushes to colorize images, enhance images, and build illustrations.(L3)
7. Use basic tools in Flash and make simple drawing and painting.Select an image with customized colors and apply transformation on objects.(L3)
8. Demonstrate the ability to effectively utilize the timeline and motion tween effects to produce animation.(L3)

Corel Draw - 16RSBE4:2

1. Understand the basics of Corel Draw, such as creating and saving documents, using fonts, resizing, rotating and moving documents and getting help.(L1)
2. Understand practical proficiency(L1)
3. Discuss a publication using logo and content with graphics.(L2)
4. Understand logos, various types of print designs,Pamphlets, Posters, Invitation cards, Greeting cards, Wrappers, Advertisements, Banners and Package.(L1)
5. Implement their ideas in Poster Presentations and apply bitmap and vector effects, layers, lenses and masks(L3)
6. Relate an existing template file, modify it and create their templates. (L4)

Dream Weaver - 16RSBE4:3

1. Understand personal and/or business websites following current professional and/or industry standards.(L1)
2. Understand audio, video, flash, java applets and images (L1)
3. Classify Forms, Frames, Tables (L2)
4. Implement Cascading Styles Sheets (L3)
5. Use Adobe Dreamweaver and a stand-alone FTP program to upload files to a web server.(L2)
6. Develop Well Structured Scripted Web Pages.(L6)

Computer Networks - 16SCCCA8

1. Understand computer network basics, network architecture, TCP/IP and OSI reference models(L1)
2. Identify the basic protocols of compruter networks, and how they can be used to assist in network design and implementation.(L1)
3. Identify and understand various techniques and modes of transmission.(L1)
4. Describe data link protocols, multi-channel access protocols and IEEE 802 standards for LAN(L2)
5. Describe routing and congestion in network layer with routing algorithms and classify IPV4 addressing scheme.(L2)
6. Discuss the elements and protocols of transport layer.Analyze and understand the various protocols such as FTP, HTTP, Telnet, DNS, SSH, and SMTP.(L2)

Programming in PHP - 16SCCCA9

1. Recognize how server-side programming works on the web and describe the basic building blocks of PHP, arrays and strings.(L2)
2. Execute functions with correct syntax and classify browser to run web applications.(L3)
3. Demonstrate knowledge to develop PHP applications using Object Oriented Programming concepts.(L3)
4. Implement the idea to connect and communicate with PHP and MySQL databases.(L3)
5. Interpret web applications using sessions, cookies and FTP.(L3)
6. Examine the AJAX concepts and relate functions to draw images on the server.(L4)

Programming in PHP (P) - 16SCCCA6(P)

1. State practical knowledge in PHP programming language.(L1)
2. Define syntax and semantics of PHP statements and functions.(L1)
3. Use the concepts of cookies and sessions to trace live connection of web applications.(L3)
4. Describe stand-alone applications for solving mathematical problems.(L2)
5. Implement, Test, debug, and deploy web pages containing PHP and MySQL.(L3)
6. Interpret PHP programs that use various PHP library functions, and that manipulate files and directories.(L3)
7. Analyze and solve common Web application tasks by writing PHP programs.(L4)

Cloud Computing - 16SMBECA2:1

1. Describe the main concepts, key technologies, strengths, and limitations of cloud computing. Understand the concepts of data storage, cloud storage and cloud services(L2)
2. Identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud, etc. (L1)

3. Classify the underlying principle of cloud virtualization, cloud storage, data management and data visualization and cloud architecture.(L2)

4. Articulate the appropriate cloud computing solutions and recommendations according to the applications used. (L4)

5. Explain the core issues of cloud computing such as security, privacy, and interoperability. Understand different cloud programming platforms and tools. (L4)

6. Correlate the components of open stack & Google Cloud platform and understand Mobile Cloud Computing (L4)

Mini Project - 16SMBECAPW

1. Able to develop practice acquired knowledge within the chosen area of technology for project development. (L6)

2. Identify, discuss and justify the technical aspects of the chosen project with a comprehensive and systematic approach.(L2)

3. Reproduce, improve and refine technical aspects for engineering projects.(L2)

4. Work as an individual or in a team in development of technical projects.(L3)

5. Communicate and report effectively project related activities and finding.(L4)

6. Plan and Reframe as an Evaluating and Testing task based on the software.(L4)

7. Apply standard software engineering practices and strategies in software project development using project environment to deliver a quality project.(L3)

8. Appraise as an individual, and as a member or leader or project manager in project team. (L5)