ARUMUGAM PILLAI SEETHAI AMMAL COLLEGE

(Re-accredited with B+ Grade by NAAC)
Tiruppattur – 630 211.

B.Sc. INFORMATION TECHNOLOGY

Programme Outcome (POs):

PO1. Students will have the sound knowledge in theory and practical in the discipline of Information Technology. They have the critical thinking skills by doing the programming exercises throughout Information Technology curriculum. Graduates will have the ability to identify, formulate and design solutions in the areas of information technology.

PO2. Students will be able to Use contemporary techniques, skills and tools necessary for integrated solutions.

PO3. Students Function effectively as a team member or a leader to accomplish a common goal in a multidisciplinary team.

PO4. Students will demonstrate knowledge related to social, ethical, health and safety, sustainability and environmental dimensions.

PO5. Students understand the issues of environmental contexts and sustainable development.

PO6. Students obtain familiarity on computer hardware concepts, networks and its utility.

PO7. Students Augment the recent developments in the field of IT and relevant fields of Research and Development.

Programme Specific Outcome (PPOs):

Ppo1: Focuses on preparing student for roles pertaining IT industry.

Ppo2: Start from the basics and in every semester learns each and everything about computers.

Ppo3: Develop programming skills, networking skills, learn applications, packages, Programming languages and modern techniques of IT.

Ppo4: Get skill and info not only about computer and information technology but also in common, organization and management.

Ppo5: Learn programming language such as C++, Java, Visual Basic, HTML, PHP, SQL, etc…

Ppo6: Information about various computer applications and latest development in IT and communication system is also provided.

Ppo7: Gives overview of the topics in IT like networking, computer graphics, web development, trouble shooting, and hardware and software skills.

Ppo8: Bachelor of Information Technology gives a number of opportunities to individuals to go ahead and shine in their lives.

Ppo9: A few of them being like software programmer, system and network administrator, web designer faculty for Information Technology, computer science and computer applications.

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B.Sc. Information Technology

22BIT1C1: Principles of Information Technology

Course Description:

This course is an introductory course to computers and information technology. It includes computer and information literacy, with the main emphasis on competency with software through hands-on practice. Candidates should know that the OS is software that controls all operations.

Course Objectives

- Define the basic components of a computer system; Understand the basic characteristics of a typical microprocessor; Be aware of the principal input devices, main storage devices, main output devices currently in use;
- Discuss about communication, MODEM, process management ,internet and surfing of data
- They will also learn to solve problems using various programming logic and various file types.

Course Outcome (CO)

Students completing the course will be able to

CO 1: Define the basic components of a computer system; Understand the basic characteristics of a typical microprocessor; Be aware of the principal input devices, main storage devices, main output devices currently in use;

CO 2: Determine the roles for IT in organizations and how IT policies are developed and fit within the organization's objectives and mission statement, while balancing the role of team player and independent technician.

CO 3:Discuss about communication, MODEM, process management ,internet and surfing of data

CO 4: Components of OS. Kernel (supervisor or control program), memory manager, input/output manager, backing store manager, resource allocation and scheduler, accounting, error handling and security, interface between hardware and user.

CO 5: Types of operating systems. Single program OS, multitasking, multiprogramming and networked. Command line interface and GUI interface. Candidates are expected to be aware of different types of operating systems.

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B.Sc. Information Technology

22BCAA1:Programming in C and Data Structures

Course Description:

- **C is a powerful general purpose programming language used for creating a wide variety of system programs and applications. It is one of the most preferred programming languages amongstsoftware programmers. It can be used on a broad range of hardware and operating system platforms. This intermediatelevel language offers imperative, objectoriented and generic programming features.**

- **Data structure is a specific method of storing and organizing system data in order to use it efficiently. Large amounts of data including internet indexing services and large databases can beefficiently managed with the implementation of data structures. It also has a major role to play indesigning efficient algorithms and system software programs.**

Course Objectives

- **Enhance your Programming Skills by Learning C with Data Structures**

- **C is a powerful general purpose programming language used for creating a wide variety of system programs and applications. It is one of the most preferred programming languages amongst software programmers. It can be used on a broad range of hardware and operating system platforms. This intermediatelevel language offers imperative, objectoriented and generic programming features.**

- **Data structure is a specific method of storing and organizing system data in order to use itefficiently. Large amounts of data including internet indexing services and large databases can be efficiently managed with the implementation of data structures. It also has a major role to play in designing efficient algorithms and system software programs.**

- **Provide an overview of programming languages and problem**

solving techniques.

- Develop programming skills with the understanding of the fundamentals and basics of C Language. Give complete information about control structures, arrays, strings, functions, structures, and pointers.
- Enable the uses the memory management concepts. Provide understanding about the issuesregarding file organization and the implementation of file systems.
- Impart knowledge about data structures including linked lists, stacks & queues, and binarytree.

Course Outcome (CO)

CO 1: Understanding about C Basics

• History of C,Characteristics of C,C Program Structure, Variables, Defining Global Variables, Printing Out and Inputting Variables,Constants,Arithmetic Operations, Comparison Operations, Logical Operators, Order of Precedence

Conditionals

• Conditionals, The if statement, The? Operator, The switch Statement, Looping and Iteration, The for statement, The while statement, The dowhile statement, Break and continue

CO 2: Understanding about Arrays and Strings

• Defining, initializing and using arrays, Single and Multidimensional Arrays, Arrays of Characters and Strings, Arrays and pointers, Strings Functions

• Role of Functions, Passing arguments to functions, Returning values from functions, Recursive functions, Call back functions, Implications on Stack, Pass by value / reference,Passing Arrays to functions
String Handling : <string.h>

• Basic String handling functions, String Searching, Character Conversions and testing :
<ctype.h>, Memory Operations: <memory.h>

CO 3: Understanding about Structures and Unions

• Structures, Nested Structures, Array of Structures, Allocation of memory and holes, UnionsFurther Data Types
• Coercion or TypeCasting, Enumerated Types, Static VariablesDynamic Memory Allocation & Dynamic Structures

• Malloc, Sized, and Free, Calloc and ReallocAdvanced Pointer Topics
• The purpose of pointers, Defining pointers, The & and * Operators, Pointer, Assignment, Pointers with functions, Pointer Arithmetic, Advanced pointer types, Pointers to functions,Pointers to String, Pointers and Dynamic memory, Pointers and Structures, Common Pointer Pitfalls, Not assigning a pointer to memory address before

using it Illegal indirection.

Storage Classes

- **Scope, Internal,External,Automatic,Static,Scope and extent of parametersLow Level Operators and Bit Fields**
- **Bitwise Operators, Bit Fields, Bit Fields: Practical Example, A note of Caution: Portability**

CO 4 : Understanding about The C Processor

- **#define,#undef,#include,#if – conditional inclusion,Preprocessor Compiler Control, Other Preprocessor Commands, Integer Functions, Random Number, String Conversion :**

<stdlib.h>,Arithmetic Functions, Random Numbers, String ConversionMathematics: <math.h>

- **Math Functions, Math Constants Input and Output (I/O) : <stdio.h>**

- **Reporting Errors, perror(),errno,exit(),Streams,Predefined Streams, Redirection,Basic I/O,Formatted I/O, Printf,Scanf,Files, Reading and writing files,Sprintf and sscanf Stream Status Enquiries**

CO 5: Understanding about Data Structures

- **Linked Lists, Stacks & Queues, Binary**

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B.Sc. Information Technology

22BIT2C1: JAVA PROGRAMMING

Course Description:

- **Java Programming is intended for software engineers, systems analysts, programmanagers and user support personnel who wish to learn the Java programming language.**

Course Objectives

- **Understand the basic oops concept. Java evaluation and implementation overview of java. Explain about basic Java language, concepts of variables, syntax and semantics to write Java programs.**
- **Know operators and expressions, decision making and branching, Decision making and looping. Able to understand classes and methods, array strings and vectors, inheritance, interface concept instead of multiple inheritances.**
- **Packages of java, multithreaded programming contains synchronization, managing errors and exceptions handling.**

Course Outcome (CO)

CO 1: Understand the basic oops concept. Java evaluation and implementation overview of java. Explain about basic Java language, concepts of variables, syntax and semantics to write Java programs.

CO 2: Know operators and expressions, decision making and branching, Decision making and looping.

CO 3: Able to understand classes and methods, array strings and vectors, inheritance, interface concept instead of multiple inheritances.

CO 4: Packages of java, multithreaded programming contains synchronization, managing errors and exceptions handling.

CO 5: Able to perform applet programming designing HTML, graphic programming.

22BIT2P1: JAVA PROGRAMMING LAB

Course Description:

- **Java Programming is intended for software engineers, systems analysts, programmanagers and user support personnel who wish to learn the Java programming language.**

Course Objectives

- **Understand the basic oops concept. Java evaluation and implementation overview of java .Explain about basic Java language, concepts of variables, syntax and semantics to writeJava programs.**

Course Outcome (CO)

CO1 Explain the programming language design, syntax and semantics.

CO2. Describe the critical thinking skills through solving programmingproblems.

CO3 Explain the standard syntax for java programs and otherprogramming Tools.

CO4. Describe the animation and events based advanced java program concepts (Applet)

CO5. Explain the java programs using object oriented class with parameters, constructors,utility, calculations, and methods including inheritance, test classes and exception handling.

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B.Sc. Information Technology

22BCAA2 : Desktop Publishing:

Course Description:

This course offers a wide range of features and tools that can help students to work with different design approaches. Students will be exposed to CorelDraw and Photoshop.

Course Objectives

- **CorelDraw is getting started to help to speed quickly with CorelDraw and its new features. This class begins with an overview of the application, including a tour of the interface and a guide to the basic drawing tools, then moves on to more advanced topics, such as adding text, controlling page layout, publishing, and printing final documents.**
- **The CorelDraw software is designed for graphic designers, fashion designers, textiles designers, print professionals, packaging firms, and aspiring designers. Adobe Photoshop enables individuals to create and design digital images and illustrations for print and Web publication.**
- **Adobe's Photoshop program has become a mainstay with graphics designers, professional photographers, and even hobbyists to edit graphics as well as create and manipulate images. Students will also learn to use this software.**

Course Outcome (CO)

The students will develop their desktop needs using Corel draw and Photoshop. Students completing the course will have the ability

CO1. To create and edit desktop publishing with CorelDraw and Photoshop.

CO2. To use the Corel Draw Objects- Creation and Manipulation Drawing and Shaping objects.

CO3. To work with text special effects.

CO4. To work with bit map commands.

CO5. To work with images using Photoshop.

CO6. To work with tools and filters.

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B.Sc. Information Technology

22BCAAP2 : Desktop Publishing: Lab

Course Description:

This course offers a wide range of features and tools that can help students to work with different design approaches. Students will be exposed to CorelDraw and Photoshop.

Course Objectives

- CorelDraw is getting started to help to speed quickly with CorelDraw and its new features. This class begins with an overview of the application, including a tour of the interface and a guide to the basic drawing tools, then moves on to more advanced topics, such as adding text, controlling page layout, publishing, and printing final documents.
- The CorelDraw software is designed for graphic designers, fashion designers, textiles designers, print professionals, packaging firms, and aspiring designers. Adobe Photoshop enables individuals to create and design digital images and illustrations for print and Web publication.
- Adobe's Photoshop program has become a mainstay with graphics designers, professional photographers, and even hobbyists to edit graphics as well as create and manipulate images. Students will also learn to use this software.

Course Outcome (CO)

The students will develop their desktop needs using Corel draw and Photoshop. Students completing the course will have the ability

CO1. To create and edit desktop publishing with CorelDraw and Photoshop.
CO2. To use the Corel Draw Objects- Creation and Manipulation Drawing and Shaping objects.
CO3. To work with text special effects.
CO4. To work with bit map commands.
CO5. To work with images using Photoshop.
CO6. To work with tools and filters.

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B.Sc. Information Technology

22BES2 : Environmental Studies:

Course Description:

Creating awareness among students about the importance of environment, the effect of technology on the environment and ecological balance is the prime aim of the course.

Course Objectives

- This course gives a brief introduction about the importance of environment and nature. This also describes abut renewable and non-renewable resources,

ECOystems, Bio-diversity and its conservation and pollution.

Course Outcome (CO)

Upon successful completion of this course, students will be able to

CO1. Know the importance of environmental studies and methods of conservation of natural resources.

CO2. Describe the structure and function of an eCOystem.

CO3. Identity the values and conservation of bio-diversity.

CO4. Explain the causes, effects and control measures of various types of pollutions.

CO5. Select the appropriate methods for waste management.

CO6. Get knowledge about various disaster management methods.

CO7. Recall social issues and legal provision.

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B.Sc. Information Technology

22BIT3C1 : PHP PROGRAMMING

Course Description:

To provide the necessary knowledge on basics of PHP.

Course Objectives

- To design and develop dynamic web applications using PHP.
- To learn the necessary concepts for working with the files using PHP

Course Outcome (CO)

CO1 To implement PHP script using Decisions and Loops
CO2 To develop PHP applications using Arrays & Strings
CO3 Manipulate files and directories.
CO4 To implement PHP script using Exception Handling and oops
CO5 To develop PHP applications using Session and Cookie

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B.Sc. Information Technology

22BIT3P1 – PHP PROGRAMMING LAB

Course Description:

- In this course you will learn modular web development using open source tools, frameworks and methodologies.

Course Objectives

- To design and develop web applications using PHP elements.
- To become proficient in dynamic page creation & redirecting a page and form values after submission

Course Outcome (CO)

- On successful completion of this course the student should be able to:

CO1 Demonstrate simple programs using PHP script-To implement using Decisions and Loops
CO2 To develop PHP applications using Arrays& Strings
CO3 To develop PHP applications using Functions,f ile and Directories
CO4 To implement PHP script using Exception Handling and oops
CO5 To develop PHP web applications using Session and Cookie

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B.Sc. Information Technology

22BCEA3 – OPERATING SYSTEMS

Course Description:

Covers the classical internal algorithms and structures of operating systems, including CPU scheduling, memory management, and device management. Considers the unifying concept of the operating system as a collection of cooperating sequential processes. Covers topics including file systems, virtual memory, disk request scheduling, concurrent processes, deadlocks, security, and integrity.

Course Objectives

- **To understand the services provided by and the design of an operating system.**
- **To understand the structure and organization of the file system.**
- **To understand what a process is and how processes are synchronized and scheduled.**
- **To understand different approaches to memory management.**
- **Students should be able to use system calls for managing processes, memory and the file system.**
- **Students should understand the data structures and algorithms used to implement an OS.**

Course Outcome (CO)

Upon successful completion of this course, students will be able

CO 1: Understands the different services provided by Operating System at different level.

CO 2: They learn real life applications of Operating System in every field.

CO 3: Understands the use of different process scheduling algorithm and synchronization techniques to avoid deadlock.

CO 4: They will learn different memory management techniques like paging, segmentation and demand paging etc.

CO 5: They will learn different Disk management and other issues

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B.Sc. Information Technology

22BIT3C2 : Database Management Systems:

Course Description:

The Relational Database Management Systems (RDBMS) course is to educate students with fundamental concepts of File processing and database processing system, the various data model and its application, the various normal forms and its role in DBMS. The students will also learn the concepts to learn SQL programs, function, procedure, package, trigger and exception handling.

Course Objectives

- **The RDBMS course provides an introduction to Database System, Entity-Relationship Model, designs of Database System, an overview of the architecture, functions, and benefits of a database management system and discusses various database models.**
- **The course describes the data structure of a relational database model in detail. This course provides to use Triggers, Package, Cursors, and Transaction in PL/SQL.**

Course Outcome (CO)

Upon successful completion of this course, students will be able to

CO1. Master the basic concepts and appreciate the applications of database systems.

CO2. Master the basics of SQL and construct queries using SQL.

CO3. Familiar with a commercial relational database system (Oracle) by writing SQL using the system.

CO4. Familiar with the relational database theory and be able to write relational algebra expressions for queries.

CO5. Mater sound design principles for logical design of databases, including the ER method and normalization approach.

CO6. Be familiar with the basic issues of transaction processing.

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B.Sc. Information Technology

22BIT4C1:PYTHON PROGRAMMING

Course Description:

This course provides an outline about python programming

Course Objectives

- Understand the concepts of Python programming.
- Illustrate the process of structuring the data using lists, dictionaries, tuples and sets.
- To apply the file concept in Python programming

Course Outcome (CO)

CO1	Outline the basic concepts in python language. Interpret different looping and conditional Statements in python language.
CO2	Work with List, tuples and dictionary, Write program using list, tuples and dictionary.
CO3	Concept of function, Implementing the concept strings in various application, Significance of Modules, Concept of reading and writing files.
CO4	To implement Exception Handling and oops.
CO5	To develop GUI applications using Tkinter, Turtle.

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22BIT4P1:PYTHON PROGRAMMING LAB

Course Description:

This course provides an outline about python programming

Course Objectives

- Understand the fundamentals of programming using Python, such as variables, data
- types, control structures, and functions.
- Learn how to use Python libraries and modules to solve problems.

Course Outcome (CO)

CO1	Understand the significance of control statements, loops and functions in creating Simple programs.
CO2	Interpret the core data structures available in python to store, process and sort the data.
CO3	Develop the real time applications using python programming language.
CO4	Analyse the real time problem using suitable python concepts.
CO5	Assess the GUI application using appropriate concepts in python.

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22BCEA4: INTERNET AND WEB DESIGN

Course Description:

This course provides an outline about Knowledge of Internet medium Internet as a mass medium

Course Objectives

- **Features of Internet Technology,**
- **Internet as source of infotainment**
- **Study of internet audiences and about cybercrime**

Course Outcome (CO)

CO1	**To appreciate the use of internet and design of web pages**
CO2	**To be able to use all the basic HTML tags used to design web content with multimedia elements**
CO3	**To be able to create and format different types of lists and tables**
CO4	**To be able to specify styles for web pages and dynamically change the appearance of web pages and manage screen space by defining multiple frames**
CO5	**To be able to design web forms for data capture and transmit to the server**

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22BCEAP4: WEB DESIGN LAB

Course Description:

This course provides an outline about Knowledge of Internet medium Internet as a mass medium

Course Objectives

- **Learn web page implementation using basic and advanced HTML**
- **Learn Forms on the webpage and form validation using client-side**
- **scripting**

Course Outcome (CO)

CO1	**Be able to appreciate the use and necessity of internet and websites**
CO2	**Be able to master the HTML tags and display text and multimedia contents on web pages**
CO3	**Be able to design lists and display them on web pages**
CO4	**Be able to design tables and display colourful and hypertext leading to other pages**
CO5	**Be able to manage screen space effectively with multiple frames and design web forms**

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B.Sc. Information Technology

22BIT4C2:COMPUTER NETWORK

Course Description:

This course provides about network and its types and also layers.

Course Objectives

- **To develop an understanding of computer networking basics.**
- **To develop an understanding of different components of computer networks, various protocols, modern technologies and their applications.**

Course Outcome (CO)

Students will able to recognize the technological trends of Computer Networking
Students will gain knowledge about technological components of the Network

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B.Sc. Information Technology

22BIT5P1 : VISUAL PROGRAMMING LAB

Course Description:

: This lab course instructs to familiarise the student with the Introduction to computer programming using VB.NET. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes language syntax, data and file structures, input/output devices, and files.

Course Objectives

- **This course introduces computer programming using the Visual BASIC programming language with object-oriented programming principles. Emphasis is on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test and debug at a beginning level.**
- **This course introduces computer programming using the Visual**
- **Programming language with object-oriented programming principles.**
- **Emphasis is on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test and debug at a beginning level.**
- **This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.**

Course Outcome (CO)

After undergoing this laboratory module, the student will be able to:

CO 1.Understanding Simple application using web controls

CO 2.Working in various States of ASP.NET Pages
CO 3.Experiment about Ad-rotator Control
CO 4.Understanding about Calendar control
CO 5.Experiment of Tree view control, Validation controls, Data list link control, Data grid hyperlink

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B.Sc. Information Technology

22BIT5C1 : VISUAL PROGRAMMING :

Course Description:

Introduction to computer programming using VB.NET. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes language syntax, data and file structures, input/output devices, and files.

Course Objectives

- Design, formulate, and construct applications with VB.NET
- Integrate variables and constants into calculations applying VB.NET
- Determine logical alternatives with VB.NET decision structures
- Implement lists and loops with VB.NET controls and iteration
- Separate operations into appropriate VB.NET procedures and functions
- Assemble multiple forms, modules, and menus into working VB.NET solutions
- Create VB.NET programs using multiple array techniques
- Build integrated VB.NET solutions using files and structures with printing capabilities
- Translate general requirements into data-related solutions using database concepts

Course Outcome (CO)

- CO 1: Know the working environment of visual basics using a control structure. Explain the basic Concepts of Program building block control statements and the basic concepts of function and procedure.
- CO 2: Understand the module, components and menu editor and its concept in a simple manner. Describe the functionality and properties of GUI based ActiveX Control with example programs.
- CO 3: Analyze a controls such text box, rich text box and etc…write coding easily. Discuss aboutgraphics handling related control and properties.
- CO 4: Develop the project with database using ODBC, DAO, ADO and visual data manager.
- CO 5: Understand the MFC, Include the active controls and other control to perform particular task.

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22BIT5C3 : MULTIMEDIA AND ITS APPLICATIONS

Course Description:

This course aims to introduce the basic multimedia elements namely text, sound, image, video, animation, and to show how to sew these elements together to produce a multimedia project using the current computer technology. It is also designed to provide students with the knowledge of the hardware/software and file types involved in multimedia technology. Upon successful completion of the course, students should be able to understand the major media elements in detail; gain experience of some commercially used multimedia software; and develop good-quality multimedia products.

Course Objectives

- **This course aims to introduce the fundamental elements of multimedia. It will provide an understanding of the fundamental elements in multimedia. The emphasis will be on learning the representations, perceptions and applications of multimedia. Software skills and hands on work on digital media will also be emphasized. On completion of the subject,**
- **The students will understand the technologies behind multimedia applications and master the skills for developing multimedia projects. After successfully completing the module student should be able to:**
- **Summarize the key concepts in current multimedia technology.**
- **Create quality multimedia software titles.**

Course Outcome (CO)

Upon successful completion of this course, students will be able

CO 1. Learn how learning theories influence the development of multimedia product

CO 2. Explore a brief history of multimedia in education; Develop competencies in designing and creating interactive multimedia applications by explaining how elements of these applications reflect a theory of how learning will occur;

CO 3. Work with all aspects of text, audio, images and video; Learn the phases involved in multimedia planning, design and production; Be able to use various multimedia authoring tools

CO 4. Be able to design and create interactive multimedia products develop competencies in designing and producing instructional multimedia 10. Apply contemporary theories of multimedia learning to the development of multimedia products.

CO 5.Evaluate existing multimedia products that can be used to design instructional and informational material.Analyze instructional and informational media (print materials, audio/visual materials and/or web-based materials, games/simulations, etc.)

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22BIT5C3:INTERNET OF THINGS

Course Description:

This course provides to gain knowledge on Industry Internet of Things

Course Objectives

- **Learn about the privacy and Security issues in IoT**
- **To Implement basic IoT applications**

Course Outcome (CO)

CO1	**Understand the basics of IoT.**
CO2	**Interpret the impact and challenges by IoT.**
CO3	**Compare different Application protocols for IoT.**
CO4	**Analyse applications of IoT in real time scenario.**
CO5	**Understand the Privacy and Security Issues.**

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22BIT5C4:FUNDAMENTALS OF DIGITAL IMAGE PROCESSING

Course Description:

This course provides to study the image fundamentals and mathematical transforms necessary for image processing.

Course Objectives

- **To study the image enhancement techniques**
- **To study image restoration procedures.**
- **To study the image compression procedures.**

Course Outcome (CO)

CO1: Review the fundamental concepts of a digital image processing system.
CO2: Analyse images in the frequency domain using various transforms.
CO3: Evaluate the techniques for image enhancement and image restoration.
CO4: Categorize various compression techniques.
CO5: Interpret Image compression standards.Interpret image segmentation and representation techniques.

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22BIT6E5 : Software Engineering:

Course Description:

This course is to gain a detailed understanding of the phases of the software development lifecycle; appreciate the problems that are associated with each of the phases, and be able to identify best practice for their solution. This course is to understand the issues surrounding the project management activities required for the development of a significant piece of software within a team environment and gain an appreciation of the complexities and impact of legislation on the professional work environment.

Course Objectives

- **Software development practices: development models including plan driven; software reuse; configuration management, maintenance and evolution of large software systems. Requirements discovery and analysis: discovery techniques and identification of stakeholder; types of requirements, systems modelling; requirements validation. Software Design: design representation forms; system architectures; design patterns; Software Testing: unit, integration and systems testing, reviews and inspections. Software Quality and Process: software standards, process maturity models; COt estimation techniques; Measurement and Evaluation: Understanding the provenance of software engineering knowledge through measurement, metrics and empirical evaluation. Project Management: preparing to be a manager; effective teamwork and leadership; team development.**

Course Outcome (CO)

Upon successful completion of this course, students will be able to

CO1. Have knowledge of current software development practices that is relevant and applicable to software development in industry

CO2. An appreciation of the challenges facing the software development industry in terms of the software development practices and processes

CO3. Have an appreciation of the challenges facing the software development industry in terms of the software development process and general project management

CO4. Have an understanding of project management theory and techniques

CO5. Be able to describe and analyse how each of the issues within software engineering Interrelate

CO6. Have gained additional knowledge of the problems faced in 'real world computing' from representatives of industrial software development companies

CO7. Have a detailed understanding of the important legal, ethical and moral issues relating to the building and use of computer applications

CO8. An ability to describe and analyse the different core facets of software engineering and how they interrelate

CO9. An ability to critically analyse systems with regard to the principles of software engineering so that this analysis aids the production and maintenance of software applications

ARUMUGAM PILLAI SEETHAI AMMAL COLLEGE

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Tiruppattur – 630 211.

B.Sc. Information Technology

22BIT6PR : Project Work & Viva-Voce:

Course Description:

The final year project is one of the most important aspects of the B.Sc. computer science degree. The B.Sc. Computer Science curriculum is based on theoretical and laboratory. Besides that students complete a software project in the final year of the program.

Course Objectives

- **The students are prepared to serve as project leaders and team members who add value through the project course. To expose student to industry-standard project practices, through a real-life project work under time and deliverable constraints, applying the knowledge acquired through various courses.**
- **1. The students will be allowed to work on any project based on the concepts studied in core/elective courses.**
- **2. The project work should be compulsorily done in the college only under the supervision of the department staffs.**
- **3. The combined project shall be undertaken by the students as a team of two.**
- **4. The number of teams should be equally assigned to existing Staff members.**
- **5. The following list of parameters taken into account for the evaluation of Project work and Viva-voce.**

Course Outcome (CO)

Upon successful completion of this course, students will be able

CO1. To provide an opportunity to apply the knowledge gained through various courses in solving a real life problem.

CO2. To provide an opportunity to practice different phases of software/system development life cycle.

CO3. To introduce the student to a professional environment and/or style typical of a global IT industry,

CO4. To provide an opportunity for structured team work and project management.

CO5. To provide an opportunity for effective, real-life, technical documentation.

CO6. To provide an opportunity to practice time, resource and person management.

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B.Sc. Information Technology

22BIT6E6-Cloud Computing

Course Description:

This course aims to teach the students how to Identify the technical foundations of cloud systems architectures.

Course Objectives

- Analyse the problems and solutions to cloud application problems.
- Apply principles of best practice in cloud application design and management.
- Identify and define technical challenges for cloud applications and assess their importance

Course Outcome (CO)

Upon successful completion of this course, students will be able

CO1: Understand the fundamental principles of distributed computing.

CO2: Understand how the distributed computing environments known as Grids can be built from lower level services.

CO3: Understand the importance of virtualization in distributed computing and how this has enabled the development of Cloud Computing.

CO4: Analyse the performance of Cloud Computing.

CO5: Understand the concept of Cloud Security.Learn the Concept of Cloud Infrastructure Model.

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B.Sc. Information Technology

22BIT6E7-Data Mining

Course Description:

This course aims to teach the students It is an introduction to the field of data mining (also known as knowledge discovery from data, or KDD for short).

Course Objectives

- It focuses on fundamental data mining concepts and techniques for discovering interesting patterns
- from data in various applications
- It emphasizes techniques for developing effective, efficient, and scalable data mining tools.

Course Outcome (CO)

Upon successful completion of this course, students will be able

CO 1: Understand what Is Data Mining, what kinds of data can be mined, what kinds of patterns can be mined, and what kinds of applications are targeted.

CO 2: Apply machine learning, pattern recognition, statistics, visualization, algorithm, database technology and high-performance computing in data mining applications.

CO 3: Identify what kinds of technologies are used for different application.

CO 4: Manipulate data pre-processing, data Warehouse and OLAP technology, data cube technology; mining frequent patterns and association, classification, clustering, and outlier detection.

CO 5: Explain major Issues in data mining.