மனோன்மணியம் சுந்தரனார் பல்கலைக்கழகம்

MANONMANIAM SUNDARANAR UNIVERSITY

SYLLABUS FOR ADVANCED DIPLOMA IN SOFTWARE ENGINEERING PROGRAM OFFERED THROUGH DIRECTORATE OF VOCATIONAL EDUCATION (COMMUNITY COLLEGES AND VOCATIONAL SKILL DEVELOPMENT CENTRES) FROM 2019 - 2020

கல்விசார் நிலைக்குழுக் கூட்டம்

MEETING OF THE STANDING COMMITTEE ON ACADEMIC AFFAIRS HELD ON WEDNESDAY THE 22nd JANUARY 2020

Program Code: 5130

ADVANCED DIPLOMA IN SOFTWARE ENGINEERING

மேம்பட்ட மென்பொருள் பொறியியல் பட்டயம்

SCHEME OF EXAMINATION

Subject Code	Title of the Course	Credit	Hours	Passing Minimum
Semester I				
C19SO11/ E19SO01	Computer Fundamentals	6	90	40/100
C19SO12 /E19SO02	Fundamentals of Software Engineering	6	90	40/100
C19SO13 /E19SO03	Programming with C and C++	6	90	40/100
C19CE10/E19CE10	Communicative English	6	90	40/100
C19SOP1/E19SOP1	Practical I- C and C++ Programming Lab	4	120	40/100
Semester II				
C19SO21/E19SO04	Data Structures	6	90	40/100
C19SO22/E19SO05	Java Programming	6	90	40/100
C19LS23/E19LS05	Life Skill	6	90	40/100
C19SO24/E19SO06	Python Programming	6	90	40/100
C19SOP2/E19SOP2	Practical II-Python Programming Lab.	4	120	40/100
Semester III				
C19SO31/E19SO07	Computer Networks	6	90	40/100
C19SO32/E19SO08	Web Programming	6	90	40/100
C19SO33/E19SO09	Software Testing	6	90	40/100
C19SOP3/E19SOP3	Practical III- Web Programming Lab	4	120	40/100
C19SOIP/E19SOIP	Industrial Visit/ Internship	10	150	40/100
Semester IV				
C19SO41/E19SO10	Relational Database Management Systems	6	90	40/100
C19SO42/E19SO11	Programming with ASP. Net	6	90	40/100
C19SO43/E19SO12	Software Project Management	6	90	40/100
C19SOP4/E19SOP4	Practical IV-ASP.Net lab	4	120	40/100
C19SOPW/E19SOPW	Project Work	10	150	40/100

Eligibility for admission: Pass in 10thstd examination conducted by the Govt. of Tamil Nadu Board of Secondary Education, Government of Tamil Nadu or any other equivalent examination.

Examination: Passing Minimum for each Course is 40%. Classification will be done on the basis of percentage marks of the total marks obtained in all the Courses and as given below:

40 % but less than 50 % - Third class
50 % but less than 60 % - Second class
60 % and above - First class

Theory Paper

Internal Marks-25
External Marks-75

Syllabus

First Semester:-

Course I - Computer Fundamentals
Course II - Fundamentals of Software Engineering
Course III - Programming with C and C++
Course IV - Communicative English
Course V - Practical I - C and C++ Programming Lab

Second Semester:-

Course VI - Data Structures
Course VII - Java Programming
Course VIII - Life Skill
Course IX - Python Programming
Course X - Practical II–Python Programming Lab.

Third Semester:-

Course XI - Computer Networks
Course XII - Web Programming
Course XIII - Software Testing
Course XIV - Practical III-Web Programming Lab
Course XV - Industrial Visit/ Internship

Fourth Semester:-

Course XVI - Relational Database Management Systems
Course XVII - Programming with ASP.Net
Course XVIII - Software Project Management
Course XIX - Practical IV-ASP.Net Lab
Course XX - Project Work

***(Semester Pattern for Community College Only)**

Program Objective:

- To understand the fundamental of software engineering concepts.
- To learn the programming languages that are useful in developing software applications and to develop the communication skill

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SEMESTER I

Course I

(C19SO11/ E19SO01)COMPUTER FUNDAMENTALS

Objective:

- To learn about the computer organization and number system
- To gain knowledge on storage devices, processor and memory of computer

Unit I **18 Hrs**

Introduction

Introduction of computer-characteristics of computers-computer's evolution to their present form- computer generations -characteristic features of each computer generation

Unit II **18 Hrs**

Basic computer organization

Basic operations of computer system- input- storage- output- processing-control-basic organization of a computer system-input unit-output unit - storage unit-processing unit

Unit III **18 Hrs**

Numbers and Data

Non-positional number system-positional number system-decimal number system-binary number system-octal number system- hexadecimal number system-data types-alphabetic data-alphanumeric data-numeric data- computer codes: representation of data in binary- american standard code for information interchange (ASCII)-binary coded decimal (BCD) code

Unit IV **18 Hrs**

Processors and Memory

Basic processor & memory architecture - central processing unit (CPU)- control unit (CU) -arithmetic logic unit (ALU) -instruction set-registers- processors-types- processor speed- main memory- RAM-ROM- cache

Unit V **18 Hrs**

Storage devices

Primary storages- secondary storages-sequential access device- direct access devices-magnetic disks --hard-disks-zip disk -Winchester disk-optical disks-CD-rw- DVD-memory storage-devices-flash-drive-memory-card

Outcome:

After undergoing this course the students:

- ✓ Will be having thorough knowledge on digital computer fundamentals
- ✓ Can able to solve problems in number systems

Reference Books:

1. Computer Fundamentals, Pradeep K. Sinha & Priti Sinha, BPB Publications, Sixth Edition, 2017
2. Computer Fundamentals, Anita Goel, Pearson publishers, 2012
3. Fundamentals of Computers - Rajaraman V , Neeharika Adabala - Prentice Hall India Learning Private Limited; 6th edition (2014)

Course II

(C19SO12/ E19SO02)Fundamentals of software Engineering

Objective:

- To learn the software life models and phases
- To learn about project planning and management techniques
- To study the types of software testing

Unit I **18 Hrs**

Introduction

The software engineering discipline- evaluation and impact- software development projects-program versus products- emergence of software engineering- early computing programming- high level language programming.

Unit II **18 Hrs**

Software life cycle models

Classical waterfall model- iterative waterfall model-prototyping model-evolutionary model-spiral model

Unit III **18 Hrs**

Software project management

Project planning- Software Project Management Plan (SPMP)-metrics for project size estimation- Lines of Code (LoC) - project estimation techniques

Unit IV **18 Hrs**

Software design

Design process - approaches to software design- function oriented- structured analysis- data flow diagram- structured design-object oriented-concepts- UML-use case- class-interaction-activity-state chart

Unit V **18 Hrs**

Coding and testing

Coding- coding review- software documentation-testing-unit testing- black box testing- white box testing- integration testing- system testing

Outcome:

After undergoing this course the students:

- ✓ Can understand the software life models and phases
- ✓ Can perform project planning and management
- ✓ Can understand the types of software testing

Reference Books:

1. Fundamentals of software engineering, Rajib Mall, PHI Learning; Fifth edition (2018)
2. Software Engineering, A practitioner ‘s approach, Roger S.Pressman, McGraw Hill Education- 7th edition (2017)

Course III

(C19SO13/E19SO03)Programming with C and C++

Objective:

- To enable the students to understand the programming concepts of C and C++ Language
- To enable the students to solve the problems using C and C++

Unit- I **18 Hrs**

Introduction to C Programming

Introduction to the Course-Overview to C Programming -A Brief History of C- Running C Programs-The Edit-Compile-Link-Execute Process-Structure of C Programs-C's Character Set-The form of a C Program-The layout of C Programs-Pre-processor Directives-Your First Program-Add Comments to a Program

Unit-II **18 Hrs**

Data Types in C

Data Types-Integer Number Variables-Decimal Number Variables-Character Variables-Assignment Statement-Arithmetic Ordering- Initializing Variables-Input and Output Functions- %Format -Formatting Your Output

Unit – III **18 Hrs**

Arrays in C

Arrays- Pointers- Strings- Defining A New Type-Structures and Functions-Pointers to Structures-Malloc- Structures and C++-Header Files

Unit- IV **18 Hrs**

Programming in C++

Fundamentals - Structure of Simple C++ Program- Fundamental Types, Constants, and Variables- Escape Sequences-Names- Variables- Keywords -Operators -Binary Arithmetic Operators-Unary Operators-Assignments-Relational Operators-Logical Operators.

Unit- V **18 Hrs**

Storage Classes and Namespaces in C++

Storage Classes of Objects- The Storage Class extern-The Storage Class static-The Specifiers auto and register-The Storage Classes of Functions -Methods-Arrays-Inheritance -Polymorphism

Outcomes:

After learning this course, the students:

- ✓ Can able to understand the programming techniques of C and C++
- ✓ Can able to solve the problems using C and C++

Reference Books:

1. Introduction to C Programming – Second Edition - Oxford University Press – 2015
2. Programming in ANSI C - Balagurusamy- Tata McGraw-Hill Education, 2008

Course IV

(C19CE10/E19CE10)COMMUNICATIVE ENGLISH

1. **Basic Grammar**:
   a. Review of grammar
   b. Remedial study of grammar
   c. Simple sentence
   d. Word passive voice etc.

2. **Bubbling Vocabulary**:
   a. Synonyms
   b. Antonyms
   c. One – work Institution

3. **Reading and Understanding English**
   a. Comprehension passage
   b. Précis – writing
   c. Developing a story from hints.

4. **Writing English**
   a. Writing Business letters.
   b. Paragraph writing
   c. Essay writing
   d. Dialogue writing

5. **Speaking English**
   a. Expressions used under different circumstances
   b. Phonetics

Reference :

1. V.H.Baskaran – "English Made Easy"
2. V.H.Baskaran – "English Composition Made Easy"

   (Shakespeare Institute of English Studies, Chennai)
3. N.Krishnaswamy – "Teaching English Grammar"

   (T.R.Publication, Chennai)
4. "Life Skill" – P.Ravi, S.Prabakar and T.Tamzil Chelvam,

   M. S. University, Tirunelveli.

Course V

(C19SOP1/E19SOP1)Practical- I

C and C++ Programming lab

1. Write a C++ program to display the multiplication table.
2. Write a C++ program to find the sum of individual digits of a positive integer.
3. Write a C++ program to print whether a given number is prime or not
4. Write a C++ program to sort the names in ascending order
5. Write a C++ program to perform matrix addition, subtraction
6. Write a C++ program to solve a quadratic equation
7. Write a C++ program to find both the largest and smallest number in a list of integers.
8. Write a C++ program to construct of pyramid of numbers.
9. Write a C++ program that converts Roman numeral into an Arabic integer.
10. Write a C++ program to generate a Fibonacci series using copy constructor
11. Using overloading function write a C++ program to find the area of triangle and square
12. Write a C++ program, which overloads the binary operators so that two strings can be concatenated, and display the resultant string.

Semester II
Course VI
(C19SO21/ E19SO04)Data structures

Objective

- To understand the various data types
- To understand the data handling mechanisms of different data structures

Unit-I **18 Hrs**

Basic Concepts

Overview: System Life Cycle- Algorithm Specification- Introduction- Recursive Algorithms- Data Abstraction-Performance Analysis

Unit-II **18 Hrs**

Data types

The Array as an Abstract Data Type-The Polynomial Abstract Data Type-The Sparse Matrix Abstract Data Type-Introduction-Matrix Multiplication-The Representation of Multidimensional Arrays-The String Abstract Data Type-Introduction- Pattern Matching

Unit-III **18 Hrs**

STACKS AND QUEUES, LINKED LISTS

The Stack Abstract Data Type-The Queue Abstract Data Type- Evaluation of Expressions-Evaluating Postfix Expressions- Infix to Postfix-Dynamically Linked Stacks and Queue -Polynomials-Representing Polynomials.

Unit-IV **18 Hrs**

TREES and HEAP

Introduction-Representation of Trees-Binary Trees-The Abstract Data Type-Properties of Binary Trees-Binary Tree Representation-Binary Tree Traversals-Heaps-The Heap-Insertion into a max heap-Deletion from a max heap

Unit-V **18 Hrs**

GRAPHS

The Graph Abstract Data Type-Introduction- Definitions- Graph Representations- Elementary Graph Operations- Depth First Search-Breadth First Search- Connected Components- Spanning Trees.

Outcome:

After completing this course, students will

- ✓ Understand the various data structures
- ✓ Understand how the data is handled in various data structures

Reference Books

1. Fundamentals of data structures in C - Ellis Horowitz, Sartaj Sahni, Susan Anderson Freed- Publisher: Silicon Pr; Second Edition (2007)

2.Data Structures and Algorithms Made Easy, Data Structures and Algorithmic Puzzles, Narasimha Karumanchi, Publisher: Career Monk Publications; Fifth edition (2016).

Course VII

(C19SO22/E19SO05)Java Programming

Objective:

- To enable the students to understand the basics of Java programming

Unit - I **18 Hrs**

The Mental Landscape- The Fetch-and-Execute Cycle: Machine Language- Asynchronous Events: Polling Loops and Interrupts- Objects and Object-oriented Programming- The Modern User Interface-The Internet and World Wide Web

Unit - II **18 Hrs**

Names and Things

The Basic Java Application-Variables and the Primitive Types- Strings, Objects, and Subroutines- Text Input and Output- Control-Blocks, Loops, and Branches- The while and do-while Statements- The for Statement-The if Statement- The switch Statement

Unit- III **18 Hrs**

Objects and Classes

Objects, Instance Variables, and Instance Methods-Constructors and Object Initialization- Programming with Objects- Inheritance, Polymorphism, and Abstract Classes

Unit IV **18 Hrs**

GUI programming

Applets, HTML, and GUI's: The Basic Java Apple- HTML Basics and the Web-Graphics and the Paint Method- Mouse Events- Keyboard Events.

Unit- V **18 Hrs**

Advanced GUI Programming

More about Graphics- More about Layouts and Components- Standard Components and Their Events-Programming with Components- Threads, Synchronization, and Animation - Frames and Dialogs.

Outcome :

After completing this course, students will

- Understand the basics of Java programming

Reference Books :

1. Java programming - David J.Eck ,2009
2 Java 2 Complete Reference, Herbert Schildt , 2011.

Course VIII

(C19LS23/E19LS05)Life Skill

Objective:

- To understand the skills that are required for human life
- To develop the technical skills for employability

I Life Coping or adjustment

(a) External and internal influence in one's life
(b) Process of coping or adjustment
(c) Coping with physical change and sexuality
(d) Coping with stress, shyness, fear, anger far live and criticism.

II Attitude

(a) Attitude
(b) Self acceptance, self – esteem and self actualization
(c) Positive thinking

III Problem Solving

(a) Goal Setting
(b) Decision Making
(c) Time Management and stress Management.

IV Computers

(a) Introduction to Computers
(b) M.S.Office
(c) Power Point

V Internet

(a) Introduction to internet
(b) E – mail
(c) Browsing

References:

1) Life Skill Programme course I & II by Dr. Xavier Alphona MCRDCE Publications. R.K.Mutt Road, Chennai – 28
2) ஆளுமை பண்பு வளர்த்தல் மற்றும் தகவல் தொடர்பு by M.Selvaraj Community College,Palayamkottai
3) "Life Skill" –P.Ravi, S.Prabahar & T.Tamil Chelvam, M.S. University, Tirunelveli

Course IX

(C19SO24/E19SO06)Python Programming

Objective:

- To learn the basics of Python Programming language

UNIT – I **18 Hrs**

Fundamentals

Fundamentals: Python character set, Tokens, variables and assignments, input output statements – Data Handling: Data types , operators, expressions.

UNIT- II **18 Hrs**

Conditional and Looping Statements

Conditional and Iterative Statements: If statement , if-else, if-elif and nested if statement – Looping statement : for loop, while loop, loop else, break and continue statement , nested loops.

UNIT-III **18 Hrs**

List and Tuples

List Creation and Access – List operations: Joining list, Repeating or Replicating List, Slicing the List, List functions and methods. Tuples: Tuple Creation and Access – Tuple Operations : Joining and Slicing the Tuples.

UNIT-IV **18 Hrs**

String and Dictionary

String Manipulation : - String operators : Basic operators , Membership Operators, Comparison operators , String Slices , string functions and methods. Dictionary - Creating, Accessing elements , characteristics. Working with Dictionaries: Adding elements, updating, deleting elements, Checking for existence of a key, Printing a Dictionary, Counting frequency of elements.

UNIT –V **18 Hrs**

Program Execution and Debugging

Basic flow of compilation , Understanding Translation Process – Role of Operating System in running a program – Debugging Techniques– Using Debugger Tool : Working with Integrated Debugger tool of Spider IDE- Working with Python Debugger-pdb- Errors and Exceptions.

Outcomes:

After completing this course, students

- ✓ Will understand the basics of Python
- ✓ Can able to solve problems using Python scripting

Reference books:

1. Computer Science with Python By Sumita Arora, Publisher LDHANPAT RAI & Co. Ltd., Educational and Technical Publisher,2018.
2. Python Programming An Introduction to Computer Science , Second Edition, JOHN ZELLE

Course X

(C19SOP2/E19SOP2)Practical II

Python Programming Lab.

1. Write a python program to swap two numbers without using third variable
2. Write a python program to read two numbers and find the sum of their cubes
3. Write a python program to read three numbers and if any two variables are equal , print that number
4. Write a python program to read three numbers and find the smallest among them
5. Write a python program to read radius of a circle and print the area
6. Write a Python program to find the sum of all numbers in a list
7. Write a Python program to find the sum of all numbers in a list
8. Write a Python program to find the common numbers from two lists
9. Write a Python program to print all even numbers and another list of odd numbers from a given list
10. Write a Python program to remove repeated elements from a given list without using built-in methods.
11. Write a Python program to find the longest word in a given sentence.
12. Write a Python program to find the number of occurrences of all vowels present in a string.
13. Write a Python program to sort a given list of numbers without using sort() function.
14. Write a Python program to check whether the given string is palindrome or not.
15. Write a Python program to read a date (dd-mm-yyyy) and print the month name according to month number.
16. Write a Python program to find the factorial of a number using recursive function call.

Semester III
Course XI
(C19SO31/E19SO07) COMPUTER NETWORKS

Objective:

- ✓ To learn the network fundamentals and architecture of network

UNIT I **18 Hrs**

INTRODUCTION

Building a network – Requirements – Network Architecture – OSI – Internet – Direct Link Networks – Hardware building blocks – Framing – Error detection – Reliable transmission.

UNIT II **18 Hrs**

NETWORK FUNDAMENTALS

LAN Technology – LAN Architecture – BUS/Tree – Ring – Star – Ethernet – Token Rings – Wireless.

UNIT III **18 Hrs**

NETWORK LAYER

Packet Switching – Switching and Forwarding – Bridges and LAN switches – Internetworking – Simple Internetworking – Routing.

UNIT IV **18 Hrs**

TRANSPORT LAYER

Reliable Byte Stream (TCP) – Simple Demultiplexer (UDP) – TCP Congestion Control – Congestion Avoidance Mechanisms.

UNIT V **18 Hrs**

PRESENTATION LAYER and APPLICATIONS

Presentation formatting – Data compression – Cryptographic Algorithms: RSA - DES — Applications – Domain Name Service – Email - SMTP – MIME – HTTP – SNMP.

Outcome:

After completing this course, students will

- ✓ understand the network fundamentals and types of network
- ✓ understand the architecture of network

Reference Books:

1. Computer Networks - A systems Approach- Larry L. Peterson & Bruce S. Davie Harcourt Asia/Morgan Kaufmann,2013
2. Computer Networks, Andrew Tanenbaum,2013.

Course XII
(C19SO32/E19SO08) Web Programming

Objective

- To learn Hyper Text Markup Language
- To create website using HTML

Unit-I **18 Hrs**

Introduction

Designing Web Pages with HTML-The HyperText Markup Language - Steps to Publish a Document on the Web -Create the Document -Put the Document on the Web -Validate the Document - The Basic Structure of HTML Document

Unit- II **18 Hrs**

Block-Level Elements in HTML

Headings -Basic Text Elements -Basic Paragraphs -Paragraphs with White Space -Numbered, Bulleted, and Indented Lists-Numbered Lists- Bulleted Lists -Definition Lists -Tables -The Basic Table Structure -Defining Table Rows-Table Headings and Data Cells -Grouping Table Contents

Unit - III **18 Hrs**

Text-Level Elements in HTML

Physical Character Styles -Logical Character Styles - Specifying Hypertext Links -Embedded Images -Animated GIFs The IMG Element -Embedding Other Objects in -Embedded Scrolling Text Banners .

Unit -IV **18 Hrs**

Frames

Frame Document Template -Specifying Frame Layout -Specifying the Content of Frame Cells -Examples -Targeting Frame Cells -Predefined Frame Names -Printing Frames -Updating Multiple Frame Cells Simultaneously -Creating Empty Frame Cells.

Unit - V **18 Hrs**

Cascading Style Sheets

Specifying Style Rules -Using External and Local Style Sheets-External Style Sheets -The STYLE Element and JavaScript Style Sheets-Inline Style Specification-Selectors -- Layers-Specifying Layers with the LAYER Element -Specifying Layers with Style Sheets

Outcome

After learning this course, students will

- understand the elements of Hyper Text Markup Language
- create website using HTML

Reference Books

1. Core Web Programming - Second Edition by Marty Hall and Larry Brown , Sun Microsystems Press/Prentice Hall
2. Web Programming Building internet Applications ,Chris Bates,2006.

Course XIII
(C19SO33/E19SO09) SOFTWARE TESTING

Objective

- To understand the types of software testing
- To gain knowledge on test planning, test Management and test automation

Unit - I **18 Hrs**

Types of Testing

Static Testing-Structural Testing - Block box testing- Requirements based testing-Positive and Negative testing -Decision tables- Domain testing-Integration testing

Unit - II **18 Hrs**

System and Acceptance Testing

System testing overview-Functional System Testing -Design/Architecture verification-Business vertical testing-Deployment testing-Beta testing-Non Functional Testing-Scalability testing-Reliability testing-Stress testing-Performance testing

Unit - III **18 Hrs**

Regression Testing

Types of Regression testing - Methodology for selecting test cases -Concluding the results of regression testing-Internationalization testing -Fake language testing- Localization testing.

Unit - IV **18 Hrs**

Test Planning, Management, Execution and Reporting

Introduction - Test Planning-preparing a test plan- Identifying Responsibilities, staffing and Training Needs-Identifying Resource Requirements-Test Management-Test Reporting.

Unit - V **18 Hrs**

Software Test Automation

Test Automation-Terms used in Automation-Design and Architecture for Automation-Test Metrics and Measurements-What are Metrics and Measurements- Metrics in testing-Types of metrics-Project Metrics-Progress metrics.

Outcome:

After undergoing this course the students:

- ✓ Can understand the types of software testing
- ✓ Can perform project planning and management
- ✓ Can able to understand the behavior of automation tool

Reference Books

1.“Software Testing – Principles and Practice- Srinivasan Desikan and Gopalaswamy Ramesh,-Pearson Education

2. Ron Patton, “Software Testing, Sams Publishing, Pearson Education,2016.

Course XIV

(C19SOP3/C19SOP3)Practical III

Web Programming Lab

1. Practicing elements, Tags and basic structure of HTML
2. Practicing basic and advanced text formatting.
3. Designing of webpage-Working with List.
4. Designing of webpage-Working with Tables.
5. Practicing Hyper linking of webpages.
6. Designing of webpage- working with Frames.
7. Designing of webpage- working with Forms and Controls.
8. Practicing creation of style sheets, CSS properties and styling.
9. Working with Background, Text and Font properties.
10. Working with list properties
11. Designing with cascading style sheet-Internal and external style sheets

Course XV

(C19SOIP/E19SOIP)Industrial visit/Internship

Attend 10-15 days of internship training at small scale software industry and participate in application development. Produce a certificate for attending internship training.

Semester IV
Course XVI
(C19SO41/E19SO10)Relational database Management Systems

Objective:

- To understand the relational database management system and design techniques
- To learn Structure Query Language (SQL) and gain knowledge on Web database

UNIT – I: AN OVERVIEW OF DBMS 18 Hrs

Introduction – Data – Information – Database – Goals of DBMS – Characteristics of DBMS – Types of DBMS – Advantages and Disadvantages of DBMS.

UNIT – II: RELATIONAL DATABASE MANAGEMENT SYSTEM 18 Hrs

Introduction to RDBMS –Terminology – Relational Data Structure – Data Integrity – Design Constraints – Primary Key – Foreign Key and its Constraints.

UNIT – III: ER MODELLING 18 Hrs

Introduction to Entity Relationship Modeling – ER Model – Entities – Attributes – Types of Attributes – ERD Conventions – Relationships – Degree – Connectivity – Cardinality – Dependency – Participation.

UNIT – IV: STRUCTURED QUERY LANGUAGE 18 Hrs

Introduction to SQL – Characteristics of SQL – Data types – Types of SQL Commands – Data Definition Language (DDL) – Data Manipulation Language (DML) – Data Control Language (DCL) - SQL Operators (Arithmetic Operator – Comparison Operator – Logical Operators and Set Operators).

UNIT – V: WEB DATABASE 18 Hrs

Introduction to Internet – E-Com – Web Browser – Accessing Database on the Web Browser – Tools required for Web Database – Internet Information Server (IIS) – Object Linking Embedding Data Base (OLEDB) provider – ActiveX Database (ADO) Connection.

Outcomes:

After undergoing this course the students:

- ✓ Will understand the Database Management Systems characteristics and types
- ✓ Can able to design the data oriented problems using

Reference books:

1. Database System Concepts- Abraham Silberschatz, Henry Korth, and S. Sudarshan.
2. Oracle PL/SQL Programming, 6th Edition, Steven Feuerstein, Bill Pribyl, O'Reilly Media Publisher, 2014
3. Database Systems using Oracle by Nilesh Shah , Second Edition, PHI Publisher

Course XVII

(C19SO42/E19SO11)Programming with ASP.Net

Objective:

- To learn dot net programming concepts
- To learn to design web applications

Unit - I ASP.NET and the .NET Framework 18 Hrs

The .NET Framework-ASP.NET-Hello World- Visual Studio .NET-Start Page-projects and Solutions-The Integrated Development Environment (IDE)-Building and Running- Events-Event Model-ASP Versus ASP.NET Events-Event Arguments-Application and Session Events-Page and Control Events.

Unit - II Controls 18 Hrs

HTML Server Controls-ASP (Web Server) Controls- ASP Control Details-Label Control-Text Box Control-Button Controls-Hyper Link Control-Selecting Values-Selecting from a List-Tables-Panel Control-Images-Calendar.

Unit - III Programming Web Forms 18 Hrs

Code-Behind-Creating the Sample Application- Debugging-Error Handling-Validation-The Required Field Validator-The Summary Validator-The Compare Validator-Range Checking-Regular Expressions-Custom Validation.

Unit - IV Data Binding 18 Hrs

Array List-Data Binding and Post back-Binding to a Class-Binding to Other Simple Controls-Binding Radio Buttons and Checkboxes- List-Bound Controls-The Data Grid Control.

Unit -V Accessing Data with ADO.NET 18 Hrs

Getting started with ADO.NET -Creating a Data Grid-Creating Data Objects by Hand-Stored Procedures- ADO Data Updates-Updating with SQL-Updating Data with Transactions-Updating Data Using Datasets

Outcome: After learning this course, the students

- ✓ will understand the dot net programming concepts
- ✓ can able to design web applications

Reference Books

1.ASP.NET in simple steps- Kogent Learning Solutions –Dream Press Tech.

2.The Complete Reference, Matthew MacDonald,2002.

Course XVII

(C19SO43/E19SO12)SOFTWARE PROJECT MANAGEMENT

Objective:

- To understand the software project management techniques and the issues related with project management
- To gain knowledge on project estimation and management of human resources.

Unit I **18 Hrs**

Conventional Methods and Economics

The waterfall model, conventional software Management performance. Evolution of Software Economics : Software Economics, pragmatic software cost estimation. Improving Software Economics : Reducing Software product size, improving software processes, improving team effectiveness, improving automation, Achieving required quality, peer inspections.

Unit II **18 Hrs**

Principles of Software Engineering

The principles of conventional software Engineering, principles of modern software management, transitioning to an iterative process. Life cycle phases : Engineering and production stages, inception, Elaboration, construction, transition phases. Artifacts of the process : The artifact sets, Management artifacts, Engineering artifacts, programmatic artifacts. Model based software architectures : A Management perspective and technical perspective.

Unit III **18 Hrs**

Work Flow of the process and Planning

Software process workflows, Iteration workflows. Checkpoints of the process: Major mile stones, Minor Milestones, Periodic status assessments. Iterative Process Planning: Work breakdown structures, planning guidelines, cost and schedule estimating, Iteration planning process, Pragmatic planning.

Unit IV **18 Hrs**

Project Organizations and Responsibilities

Line-of-Business Organizations, Project Organizations, evolution of Organizations. Process Automation: Automation Building blocks, The Project Environment.

Unit V **18 Hrs**

Project Control and Process instrumentation:

The seven core Metrics, Management indicators, quality indicators, life cycle expectations, pragmatic Software Metrics, Metrics automation.Tailoring the Process: Process discriminants.

Outcome:

After undergoing this course the students:

- ✓ Will be having thorough knowledge on Project Management
- ✓ Can able to control the software process and understand the metrics of software.

References

1. Software Project Management, Walker Royce: Pearson Education, 2005.
2. Information Technology Project management (4th Edition) – Kathy Schwalbe (Centgage Learning – Indian Edition)
3. Project Management Core Textbook – Mantel Jr., Meredith, Shafer, Sutton with Gopalan (Wiley India Edition)
4. Information Technology project Management,: a concise study, (3rd ed.) by S A Kelkar (PHI)
5. Project Management- A systems Approach to planning, scheduling and controlling - Harold Kerzner (John Wiley & Sons, Inc)
6. A Guide to the Project Management Body of Knowledge (3rd Edition)- Newtown Square, PA, Project Management Institute, 2005.

Course XIX

(C19SOP4/E19SOP4)Practical IV

ASP.NET Lab

List Of Ex.

1. Create a simple ASP.NET page to Output Text with a form, two HTML text boxes, an HTML button, and an HTML element. Create an event procedure for the button.

2. Create a web application in ASP.NET using three different controls to the ASP.NET page for reserving rooms in hotel. The three controls are a button control, a label control, and a drop-down list control.

3. Develop a ASP.Net application using Datagrid to display records.

4. Develop a database application using ADO.NET to insert, modify, update and delete operations.

5. Develop a ASP.Net application to perform timer based quiz of 10 questions.

6. Write a program to implement a calculator with memory and recall operations.

7. Write a VB.Net program to accept a string and convert the case of the characters.

8. Create a application for Accessing a SQL Database by Using ADO.NET by connecting to the SQL Server database and call a stored procedure. You then display the data in a Repeater control

9. Develop a database application to store the details of students using ADO.NET

10. Develop a menu based ASP.Net application to implement a text editor with cut, copy, paste, save and close operations.

Course XX

(C19SOPW/E19SOPW)Project work

Project Details

The candidate is expected to develop application software using any system software and expected to perform requirement gathering, analysis, design using design notations, implementation and testing.
