SEMESTER- IV			
Allied - Practical– IV – Web designing Lab			
Code: 18UCSAR4	**Hrs / week :3**	**Hrs / Semester: 45**	**Credits :2**

List of Practicals :

1. Create a web page of your College.
2. Create a web page to display your marks in the following table format.

Reg No.	Name	SEMESTER I							
		Language		English		C		HTML	
		Int	Ext	Int	Ext	Int	Ext	Int	Ext

3. Write an HTML code to display a list of five cars in a frame, Link each one to a brief description in second frame. The left frame should display the list and the right frame should display the paragraph about the frame.
4. Write HTML program to create E-Mail registration form.
5. Design a Web page using CSS which includes the following:
    i. Use Different fonts and styles
    ii. Set the background image
    iii. Define styles for links as A: link, A: visited , A: active and A: hover
6. Write a VB Script to prepare EB Bill.
7. Write a VB Script to prepare Pay Bill for an Organization.
8. Write a Java Script to design a simple calculator to perform sum, product, difference and quotient operations.
9. Write a JavaScript to validate the following fields:
    i. Name (should contain alphabet and the length should not be less than 6 characters)
    ii. Password (should not be less than 6 characters length)
    iii. Email id (must follow the pattern)
    iv. Mobile No (should contain 10 digits)

SEMESTER- IV			
Core V– Python Programming			
Code: 18UCSC41	**Hrs / week :5**	**Hrs / Semester: 75**	**Credits :4**

Unit I:

Introduction and overview :

Introduction, What is Python, Origin, Comparison, Comments, Operators, Variables and Assignment, Numbers, Strings, Lists and Tuples, Dictionaries, if Statement, while Loop, for Loop and the range() Built-in Function, Files and the open() Built-in Function, Errors and Exceptions, Functions, Classes, Modules.

Syntax and Style:

Statements and Syntax, Variable Assignment, Identifiers, Basic Style Guidelines, Memory Management, Python Application Examples.

Unit II:

Python Objects

Python Objects, Standard Types, Other Built-in Types, Internal Types, Standard Type Operators, Standard Type Built-in Functions, Categorizing the Standard Types, Unsupported Types.

Numbers and Strings :

Introduction to Numbers, Integers, Floating Point Real Numbers, Complex Numbers, Operators, Built-in Functions. Sequences: Strings, Lists, and Tuples, Sequences, Strings, Strings and Operators, String-only Operators, Built-in Functions, String Built-in Methods, Special Features of Strings.

Unit III:

Lists :

Operators, Built-in Functions, List Type Built-in Methods, Special Features of Lists, Tuples, Tuple Operators and Built-in Functions, Special Features of Tuples.

Conditionals and Loops:

if statement, else Statement, else if Statement, while Statement, for Statement, break Statement, continue Statement, pass Statement, else Statement.

Unit IV:

Files and Input/output: File Objects, File Built-in Function, File Built-in Methods, File Built-in Attributes, Standard Files, Command-line Arguments, File System, File Execution, Persistent Storage Modules

Unit V:

Regular Expressions :

Introduction/Motivation, Special Symbols and Characters for REs, REs and Python.

Programming Exercise: Check for data error in CSV files: Numeric Check, Alphanumeric Check, Email Check, Date Check.

Text Book:

1. Chun, J Wesley, Core Python Programming, 2nd Edition, Pearson, 2007 Reprint 2010.

Books for Reference:

1. Barry, Paul, Head First Python, 2nd Edition, O Rielly, 2010.
2. Lutz, Mark, Learning Python, 4th Edition, O Rielly, 2009.

SEMESTER- IV			
Core – VI – RDBMS			
Code: 18UCSC42	**Hrs / week :6**	**Hrs / Semester: 90**	**Credits :4**

Unit I:

Introduction:

Database System Applications-Purpose of Database Systems-View of Data-Database Languages-Relational Databases-Database Design-Data Storage and Querying-Transaction Management-Database Architecture-Data Mining and Information Retrieval-Specialty Databases-Database Users and Administrations-History of database Systems

Introduction to Relational Model:

Structure of Relational Databases-Database Schema-Keys-Schema Diagrams-Relational Query Language

Formal Relational Query Language-Relational Operations

Unit II:

Formal Relational Query Languages:

The Relational Algebra-The Tuple Relational Calculus-The Domain Relational Calculus

Database Design And The E-R Model:

Overview of the Design process-The entity Relationship Model-Constraits-Removing Redundant Attributes-Entity Sets-Entity Relationship Diagrams-Reduction to Relational Schemas-Entity Relationship Issues-Extended E-R Features-Alternative Notations for Modeling data-Other Aspects of Database Design

Unit III:

Relational Database Design:

Features of Good Relational-Designs-Atomic Domains and First Normal Form-Decomposition using Functional dependencies-Functional-Dependency Theory-Algorithms for Decomposition-Decomposition Using Multivalued Dependencies-More Normal Forms-Database Design Process-Modelling Temporal Data

Storage and File Structure:

Overview of Physical Storage Media-Magnetic Disk and Flash Storage-RAID-Tertiary Storage-File Organization-Organization of Records in Files-Data Dictionary Storage-Database Buffer

Unit IV:

Transactions:

Transaction Concept-A Simple Transaction Model-Storage Structure-Transaction Atomicity and Durability-Transaction Isolation-Serialzability

Concurrency Control:

Lock base Protocols-Deadlocks Handling-Multiple Granularity-Timestamp Based protocols-Validation Based Protocols-Multiversion Schemas-Shapshot Isolation

Unit-V:

Database System Architectures:

Centralized and Client-Server Architectures-Server System Architecture-Parallel Systems-Disturbuted Systems

Parallel Databases:

Introduction0I/O Parallelism-Interquery Parallelism- Intraquery Parallelism

Distributed Databases:

Homogeneous and Heterogeneous databases-Distributed Data Storage-Distributed Tranasctions

Text Books:

1. Abraham Silberschatz, Henry F. Korth, S. Sudharshan, ―Database System Concepts‖, Sixth Edition, Tata McGraw Hill, 2011.
2. RamezElmasri, Shamkant B. Navathe, ―Fundamentals of Database Systems‖, Sixth Edition, Pearson Education, 2011.

Books for References:

1. C.J.Date, A.Kannan, S.Swamynathan, ―An Introduction to Database Systems‖, Eighth Edition, Pearson Education, 2006.
2. Raghu Ramakrishnan, ―Database Management Systems‖, Fourth Edition, McGraw-Hill College Publications, 2015.
3. G.K.Gupta,"Database Management Systems‖, Tata McGraw Hill, 2011.

SEMESTER- IV			
Core – Practical IV – Python Programming Lab			
Code: 18UCSCR4	**Hrs / week :6**	**Hrs / Semester: 90**	**Credits :4**

List of Practicals :

1. Write a Python program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon user's choice.
2. Write a Python Program to calculate total marks, percentage and grade of a student. Marks obtained in each of the three subjects are to be input by the user. Assign grades according to the following criteria:
    a. Grade A: Percentage >=80
    b. Grade B: Percentage>=70 and <80
    c. Grade C: Percentage>=60 and <70
    d. Grade D: Percentage>=40 and <60
    e. Grade E: Percentage<40
3. Write a Python Program using user-defined functions to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user.
4. Write a Python Program to display the first n terms of Fibonacci series.
5. Write a Python Program to find factorial of the given number.
6. Write a Python Program to find sum of the following series for n terms: 1 – 2/2! + 3/3! - - - - - - n/n!
7. Write a Python programs using String functions.
8. Write a Python program to count the number of strings where the string length is 2 or more and the first and last character are same from a given list of strings.
9. Write a Python program to get the largest number from a list.
10. Write a Python program to get a list, sorted in increasing order by the last element in each tuple from a given list of non-empty tuples.
11. Write a Python program to remove duplicates from a list.
12. Write a Python program to create a CSV File based on user input.
13. Write a Python program to read a CSV File already created and display the contents

SEMESTER IV			
Core Skill Based – Web Technology			
Code: 18UCSS41	**Hrs / week :4**	**Hrs / Semester: 60**	**Credits :4**

Unit I:

Introduction:

What is Internet? History of Internet, Internet Services and Accessibility, Uses of Internet, Protocols, Web Concepts, Internet Standards

Internet protocols:

Introduction, Internet Protocols, Host Names, Internet Applications and Application Protocols

Unit II:

Java network programming:

Introduction, UDP/IP and TCP/IP Communications, I/O Streams, Sockets, Multicast Sockets, Remote Method Invocation, Protocol Handler, Content Handlers

Javascript:

Introduction, Language Elements, Objects of Javascript, Other Objects, Arrays

Unit III:

Vbscript:

Introduction, Embedding VBScript Code in an HTML Document, Comments, Variables, Operators, Procedures, Conditional Statements, Looping Constructs, Objects and VB Script, Cookies.

Dynamic Html (DHTML):

Introduction, Cascading Style Sheets (CSS), DHTML Document Object Model and Collections, Event Handling, Filters and Transactions, Data Binding

Unit IV:

Extensible Mark-Up Language (XML):

Introduction, HTML vs XML, Syntax of the XML Document, XML Attributes, XML Validation, XML DTD, The Building Blocks of XML Documents, DTD Elements, DTD Attributes, DTD Entities, DTD Validation, XSL, XSL Transformation, XML Namespaces, XML Schema

Common Gateway Interface (CGI):

Introduction, Server – Browser Interaction, CGI Scripts Structure, The CGI.pm Module, Perl Variables, CGI Environment Variables, Processing Forms, Sending Mail, Validating the Form Data, Handling Checkboxes, Server Side Includes (SSI), CGI Server Side and Client Side Applets, CGI Security Issues

Unit V:

Servlets:

Introduction, Advantages of Servlets over CGI, Installing Servlets, The Servlet Life Cycle, Servlet API, A Simple Servlet, Handling HTTP GET Requests, Handling HTTP POST Requests, Cookies, Session Tracking, Multi – tier Application Using Database Connectivity, Servlet Chaining

Java Server Pages: (JSP)Introduction, Advantages of JSP, Developing First JSP, Components of JSP, Reading Request Information, Retrieving the Data Posted from a HTML File to a JSP File, JSP Sessions, Cookies, Disabling Sessions

Text Book:

1. N.P.Gopalan, J.Akilandeseswari, Web Technology – A Developer's Perspective, PHI,2007

Books for Reference :

1. Achyut S Godbole, AtulKahate, Web Technologies - TCP / IP To Internet Application Architectures, Tata McGraw - Hill Education,2008.
2. Vipin Kumar, Web Technologies, A.B. Publication publisher, 2008
3. Jeffry C. Jakson, Web Technologies by Computer Science Perspective, pearson publication, 2005

SEMESTER –IV	
Self Study Course II - Mathematical Reasoning	
Code: 18UCSSS2	**Credits: 2**

Unit I :

Simplification, Averages.

Unit II :

Ratio and Proportion, Partnership.

Unit III :

Percentage , profit and loss.

Unit IV :

Simple interest , Compound interest.

Unit V :

Time and work , Time and distance.

TextBook :

Objective Arithmetic – R.S.Agarwaal. (chapters 4,6,12,13,10,11,21,22,15,17)