

**SARDAR PATEL UNIVERSITY**  
**Bachelor of Vocation (Software Development)**  
**Semester: III**  
**Syllabus with effect from: June 2022**

Course Type	New Course Code	TITLE	T/P	Credit	Exam Duration in Hrs	Contact Hrs Per Week	Component of Marks			Evaluation Responsibility
							Internal	External	Total	
							Total/Passing	Total/Passing	Total/Passing	
<b>General Component</b>	US03FBVS51	Computer Based Numerical and Statistical Methods	T	3	3	3	30/12	70/28	100/40	University/ College
	US03FBVS52	Web Designing	T	3	3	3	30/12	70/28	100/40	University/ College
	US03FBVS53	Object Oriented Programming with C++	T	3	3	3	30/12	70/28	100/40	University/ College
	US03FBVS54	Environment Studies-I	T	3	3	3	30/12	70/28	100/40	University/ College
<b>Skill Component</b>	<b>Lab/Practical</b>									
	US03CBVS51	Web Designing Practical Lab	P	3	3	3	30/12	70/28	100/40	University/ College
	US03CBVS52	Object Oriented Programming with C++ Practical Lab	P	3	3	3	30/12	70/28	100/40	University/ College
	<b>On-Job-Training/Qualification Packs</b>									
	US03CBVS53	Practical Training-II	P	12	-	-	-	-	-	University / College

**SARDAR PATEL UNIVERSITY**  
**B.Voc (Software development)**  
**Semester: III**  
**Syllabus with effect from: June 2022**

<b>Paper Code: US03FBVS51</b>	<b>Total Credits:3</b>
<b>Title Of Paper: : Computer Based Numerical and Statistical Methods</b>	

Unit	Description in detail	Weightage (%)
<b>1</b>	<b>Computer Arithmetic &amp; Iterative Methods</b> <ul style="list-style-type: none"> <li>- Absolute, Relative and Percentage error</li> <li>- The method of successive bisection, an algorithm of bisection method to find a root and examples</li> <li>- The method of false position</li> <li>- The method of iterative procedure</li> <li>- Secant method, illustration and algorithm</li> <li>- The method of successive approximations, illustrations and algorithm</li> </ul>	<b>25%</b>
<b>2</b>	<b>Interpolation with Equal and Unequal Intervals</b> <ul style="list-style-type: none"> <li>- Interpolation with equal intervals-finite difference table</li> <li>- The Gregory- Newton formula for forward and backward interpolation corresponding algorithms and examples</li> <li>- Interpolation for unequal intervals using Newton's formula for divided differences</li> <li>- Lagrange interpolation</li> <li>- Central difference formulae</li> <li>- Extrapolation and corresponding examples</li> </ul>	<b>25%</b>
<b>3</b>	<b>Differentiation and Solution of Simultaneous Linear Equations</b> <ul style="list-style-type: none"> <li>- Definition and examples of differentiation</li> <li>- Higher order derivative of standard functions up to second order</li> <li>- The Matrix inversion method</li> <li>- The Gauss-Seidel iterative method</li> <li>- Comparison of direct and iterative methods</li> </ul>	<b>25%</b>
<b>4</b>	<b>. Time Series</b> <ul style="list-style-type: none"> <li>- Meaning, Analysis and Utility of Time Series</li> <li>- Components of Time Series</li> <li>- Moving average method to find secular trend</li> <li>- Simple average method to find seasonal variation</li> </ul>	<b>25%</b>
<b>Practical:</b>		
The students are required to do Dictation, Narration, Listening Comprehension, Note Making/Note Taking as given by concerned faculty		

**MAIN REFERENCE BOOKS :**

1. Sastry S. S. : Introductory Methods of Numerical Analysis, Prentice Hall of India Pvt. Ltd., 1986(2)
2. Salaria R S : Computer Oriented Numerical Methods, Khanna Book Publishing Co. Ltd., 2000(3)
3. Fundamentals of statistics by S.C. Gupta, Himalaya Publishing House.(6)

**OTHER REFERENCE BOOKS :**

1. Rajaraman V. : Computer Oriented Numerical Methods, Prentice Hall of India Pvt. Ltd., 1983
2. Murray R Spiegel : Theory and Problem of Statistics, McGraw-Hill Schaum's Outline Series, 1981.

**SARDAR PATEL UNIVERSITY**  
**B.Voc (Software development)**  
**Semester: III**  
**Syllabus with effect from: June 2022**

<b>Paper Code: US03FBVS52</b>	<b>Total Credits:3</b>
<b>Title Of Paper: Web Designing</b>	

Unit	Description in detail	Weightage (%)
1	<b>Web Design Principles :-</b> Basic principles involved in developing a web site, Planning process, rules of web designing aviation bar, Page design, Home Page Layout, Design Concept, Brief History of Internet, what is World Wide Web, Why create a website, Web Standards	25%
2	<b>Introduction to HTML:-</b> What is HTML, HTML Documents, Basic structure of an HTML document, Creating an HTML document, Markup Tags, Heading-Paragraphs, Line Breaks, Introduction to elements of HTML, Working with Text, Working with Lists, Tables and Frames, Working with Hyperlinks, Images and Multimedia, Working with Forms and controls.	25%
3	<b>Introduction to Cascading Style Sheets and Java Script:-</b> Concept of CSS, Creating Style Sheet, CSS Properties, CSS Styling (Background, Text Format ,Controlling Fonts), Working with block elements and objects, Working with Lists and Tables, CSS Id and Class, CSS Color , Java script Basics, Java script Events, Java script conditions and loop control structures, Alert, Prompt and Confirm statements, Java script validation	25%
4	<b>Introduction to Web Publishing or Hosting And Introduction to Bootstrap:-</b> Creating the Web Site, Saving the site, Working on the website, Creating web site structure, Themes-Publishing web sites. History, Fundamentals of Bootstrap, Bootstrap Grid System, Bootstrap Form and Form Components, Introduction JQuery, Element Selector, Document ready function, Events, Event handling with Html or Bootstrap components	25%
<b>Practical:</b>		
The students are required to do Dictation, Narration, Listening Comprehension, Note Making/Note Taking as given by concerned faculty		

**MAIN REFERENCE BOOKS :**

1. Ivan Bayross, "Web Enabled Commercial Applications Development using HTML, DHTML, Javascript, Perl CGI"
2. Xavier C : World Wide Web Design With HTML, Tata McGraw Hill Publication, 2000
3. Wilton P. : Beginning JavaScript, 2nd Edition, Wiley DreamTech, 2004

**SARDAR PATEL UNIVERSITY**  
**B.Voc (Software development)**  
**Semester: III**  
**Syllabus with effect from: June 2022**

<b>Paper Code: US03FBVS53</b>		<b>Total Credits:3</b>
<b>Title Of Paper: Object Oriented Programming with C++</b>		
Unit	Description in detail	Weightage (%)
<b>1</b>	<b>Object Oriented Programming (OOP) Concepts and Introduction to C++</b> <ul style="list-style-type: none"> <li>- Structured programming vs. object oriented programming</li> <li>- Basic OOP concepts : objects , classes , encapsulation , data hiding , inheritance, polymorphism</li> <li>- Introduction to C++: structure of a C++ program , data types , variables, constants, expressions, statements and operators, Usage of header files</li> <li>- Control flow statements : if else, for loop, while loop, do while loop, switch, break and continue</li> </ul>	<b>25%</b>
<b>2</b>	<b>Input/Output, Arrays and Working with Classes</b> <ul style="list-style-type: none"> <li>- Basic I/O in C++</li> <li>- Arrays in C++ : introduction, declaration, initialization of one , two and multi-dimensional arrays, operations on arrays</li> <li>- Working with strings : introduction, declaration, string manipulation and arrays of string</li> <li>- Classes and objects in C++</li> <li>- Constructors : default, parameterized, copy, constructor overloading and destructor</li> <li>- Access specifiers, implementing and accessing class members</li> <li>- Working with objects : constant objects, nameless objects, live objects, arrays of objects</li> </ul>	<b>25%</b>
<b>3</b>	<b>Functions, Function Overloading and Inheritance</b> <ul style="list-style-type: none"> <li>- Introduction to functions, library and user-defined functions, parameters passing, default arguments</li> <li>- Functions overloading , inline functions, friend functions and virtual functions</li> <li>- Inheritance: Introduction , derived class declaration, forms of inheritance</li> <li>- Inheritance and member access ability, constructor and destructor in derived class, construction invocation and data member initialization.</li> </ul>	<b>25%</b>
<b>4</b>	<b>Operator Overloading, Pointers and Files</b> <ul style="list-style-type: none"> <li>- Operator overloading : Introduction, overloaded operators, unary operator overloading, operator keyword, operator return values, binary operators overloading, overloading with friend function</li> <li>- Usages of Pointers in C++ : basic overview</li> <li>- Dynamic memory allocation</li> </ul>	<b>25%</b>
<b>Practical:</b>		
The students are required to do Dictation, Narration, Listening Comprehension, Note Making/Note Taking as given by concerned faculty		

**MAIN REFERENCE BOOKS :**

1. E Balagurusamy : Object Oriented Programming in C++, Tata McGraw-Hill Publishing Co. Ltd.
2. Robert Lafore : Object Oriented Programming in Turbo C++, Guide, Galgotia Pub. (P) Ltd.
3. Schaum's Outline of Programming with C++ by John Hubbard, McGraw-Hill Education; 2nd edition (June 6, 2000)

**BOOKS FOR ADDITIONAL READING :**

1. Barkakati N. : Object Oriented Programming in C++, PHI.
2. OOP's using C++ for Dummies.

**SARDAR PATEL UNIVERSITY**  
**B.Voc (Software development)**  
**Semester: III**  
**Syllabus with effect from: June 2022**

<b>Paper Code: US03FBVS54</b>	<b>Total Credits:3</b>
<b>Title Of Paper: Environmental Studies</b>	

Unit	Description in detail	Weightage (%)
<b>1</b>	<b>Overview of Environmental Studies</b> <ul style="list-style-type: none"> <li>- Definition, Scope, Importance.</li> <li>- Renewable and Non Renewable Resources</li> <li>- Equitable use of resources for sustainable lifestyles</li> </ul>	<b>25%</b>
<b>2</b>	<b>Natural Resources and Associated Problems</b> <ul style="list-style-type: none"> <li>- Forest Resources, Water Resources, Mineral Resources, Energy Resources, Land Resources.</li> <li>- Role of Individual in conservation of Natural Resources</li> <li>- Case Study on various resources</li> </ul>	<b>25%</b>
<b>3</b>	<b>Ecosystems</b> <ul style="list-style-type: none"> <li>- Concept, Structure, Function.</li> <li>- Types, Characteristics</li> <li>- Threats of following ecosystems Forest, Grassland, Desert and Aquatic Ecosystem</li> <li>- Role of Individuals in sustaining the above types of Ecosystems</li> </ul>	<b>25%</b>
<b>4</b>	<b>Biodiversity</b> <ul style="list-style-type: none"> <li>- Introduction, Types – Genetic, Species, Ecosystem</li> <li>- Biodiversity at Global National and Local Levels</li> <li>- India as a mega diversity nation</li> <li>- Threats &amp; conservation of Biodiversity.</li> </ul>	<b>25%</b>
<b>Practical:</b>		
The students are required to do Dictation, Narration, Listening Comprehension, Note Making/Note Taking as given by concerned faculty		

**Basic Text & Reference Books:**

1. Text book of Environmental Studies for undergraduate Courses: Erach Barucha, PublisherUniversity Press, University Grants Commission.
2. Brunner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p Mckinney, M.L. & School, R.M. 1996.
3. Environmental Science systems & Solutions, Web enhanced edition. 639p. Jadhav, H &Bhosale, V.M. 1995.
4. Environmental Protectionand Laws. Himalaya Pub. House, Delhi 284 p

Note: Latest Edition of Text books may be used.

**SARDAR PATEL UNIVERSITY**  
**B.Voc (Software development)**  
**Semester: III**  
**Syllabus with effect from: June 2022**

<b>Paper Code: Code: US03CBVS51</b>	<b>Total Credits:3</b>
<b>Title Of Paper:</b> Web Development using PHP Practical Lab	

<b>Part</b>	<b>Description in detail</b>	<b>Weightage (%)</b>
<b>1</b>	<ul style="list-style-type: none"><li>• Practical based on Web Development using PHP Practical Lab</li></ul>	<b>50%</b>
<b>2</b>	<ul style="list-style-type: none"><li>• Practical based on Graphics Design Practical Lab</li></ul>	<b>50%</b>

**SARDAR PATEL UNIVERSITY**  
**B.Voc (Software development)**  
**Semester: III**  
**Syllabus with effect from: June 2022**

<b>Paper Code: US03CBVS52</b>	<b>Total Credits:3</b>
<b>Title Of Paper:</b> Object Oriented Programming with C++ Practical Lab	

<b>Part</b>	<b>Description in detail</b>	<b>Weightage (%)</b>
<b>1</b>	<ul style="list-style-type: none"><li>• Practical based on Object Oriented Programming with C++ Practical Lab</li></ul>	<b>100%</b>

**SARDAR PATEL UNIVERSITY**  
**B.Voc (Software development)**  
**Semester: III**  
**Syllabus with effect from: June 2022**

<b>Paper Code: US03CBVS53</b>	<b>Total Credits:12</b>
<b>Title Of Paper: Practical Training –II</b>	

<b>Part</b>	<b>Description in detail</b>	<b>Weightage (%)</b>
<b>1</b>	<ul style="list-style-type: none"><li>● Practical Training on C++</li><li>● Practical Training on php</li><li>● Practical Training on Java Script</li><li>● Practical Training on Designing tools</li><li>● Practical Training on Framework(Bootstrap)</li><li>● Practical Training on SQL</li></ul> <p>➤ <b>The students have to undergone for internship/ on the job training under any Concerned Organization in the areas of QP/NOS</b></p> <p>➤ <b>A presentation as well as report has to prepared and presented for the viva-voce and submit it to the concerned faculty.</b></p>	<b>100%</b>