

Second Year Structure and Syllabus
for
B.Voc. in
Software Development
WEF A.Y. 2021-22



Dr. Babasaheb Ambedkar Technological University,
Lonere 402103 Taluka - Managaon, Dist. Raigad (M.S.)

Semester III (Revised syllabus 2021-22)

Sr. No.	Course Code	Name of the Course	Teaching scheme			Evaluation Scheme			Credits	Total Marks
			L	T	P	IA	MSE	ESE		
General Education										
			Theory							
1	BVSWC301	Software Engineering	3	0	0	25	0	25	3	50
2	BVSWC302	Relational Database Management System	3	0	0	25	0	25	3	50
3	BVSWC303	Advanced Java Programming	3	0	0	25	0	25	3	50
4	BVSWC304	Window Configuration and Server Administration	3	0	0	25	0	25	3	50
			Total						12	200
Skill Components										
			Lab/Practical							
4	BVSWL305	Relational Database Management System Lab	0	0	1	25	0	25	1.5	50
5	BVSWL306	Advanced Java Programming Lab	0	0	1	25	0	25	1.5	50
On-Job-Training (OJT)/Qualification Packs (Any One)										
			IA			EA				
7	BVSWE317	Test Engineer (SSC/Q1301)	50			150			15	200
8	BVSWE328	Master Trainer for Software Developer (SSC/Q0509)								
			Total						18	300

Semester IV (Revised Syllabus 2021-22)

Sr. No.	Course Code	Name of the Course	Teaching scheme			Evaluation Scheme			Credits	Total Marks
			L	T	P	IA	MSE	ESE		
General Education										
			Theory							
1	BVSWC401	Software Testing and Project Management	3	0	0	25	0	25	3	50
2	BVSWC402	Android Application Development	3	0	0	25	0	25	3	50
3	BVSWC403	Web Development using PHP	3	0	0	25	0	25	3	50
4	BVSWC404	Cyber Security	3	0	0	25	0	25	3	50
Total									12	200
Skill Components										
			Lab/Practical							
5	BVSWL405	Android Application Development Lab	0	0	1	25	0	25	1.5	50
6	BVSWL406	Web Development using PHP Lab	0	0	1	25	0	25	1.5	50
On-Job-Training (OJT)/Qualification Packs (Any One)										
			IA			EA				
7	BVSWE417	QA Engineer (SSC/Q1302)	50			150			15	200
8	BVSWE428	Associate-Recruitment (SSC/Q2501)								
Total									18	300

Semester
III
Syllabus

Subject Name : Software Engineering		
Course Code :BVSWC301		Semester: III
Weekly Teaching Hours: TH: 03 Tut: 00		Scheme of Marking TH: 25 IA: 25 Total: 50
TH Exam Duration: 01 Hours		Scheme of Marking PR: --
Credit:3		
Content		Hours
Unit – I	Software	
	Software Characteristics, Components & Applications, Software Engineering - A Layered Technology, Software Process Models - Linear Sequential Model, Prototype & Rad Model. Evolutionary Software Process Model – Incremental Model and Spiral Model.	9
Unit – II	Software Project Management	
	Project Management Concepts – People Problem and Process S/W process and Project Metrics: Metrics in The Process and Project Domains. Software Measurement fundamental concepts –Size Oriented, Function Oriented Metrics, Extended Function.	6
Unit –III	Software Project Planning	
	Objectives, Scope, Project Estimation, Project Decompositions, and Empirical Estimation Models. Software Project Estimation: Work Breakdown structure (WBS), steps in WBS, Measuring efforts for a project, techniques for estimation – SLOC, FP, COCOMO and Delphi methods.	9
Unit – IV	Analysis Concept And Principles	
	Requirement Analysis, Communication Techniques, Analysis Principles, Software Prototyping, Specifications. Analysis Modelling: Elements of the Analysis Modelling, Data Modelling, Functional Modelling and Information Flow, Behavioral Modeling, Data Dictionary.	9
Unit – V	Design Concepts And Principles	
	Design Process, Design Concepts, Design Principles, Effective Modular Design. Design Methods: Architectural Design Process, Transform Mapping and Transaction Mapping, Interface Design, - Internal and External Design, Human Computer Interface Design, Interface Design Guidelines, Procedural Design.	9

Text Books		
Name of Authors	Title of the Book	Publisher
Rogger S. Pressman	Software Engineering: A Practitioner’s Approach	McGraw Hill Publication
N.S. Gill	Software Engineering	Khanna Publishing House
R.P. Mahapatra	Software Engineering	Khanna Publishing House

Subject Name: Relational Database Management System		
Course Code :BVSWC302	Semester: III	
Weekly Teaching Hours: TH: 03 Tut: 00	Scheme of Marking TH: 25 IA: 25 Total: 50	
TH Exam Duration: 01 Hours	Scheme of Marking PR: --	
Credit :03		
Content		Hours
Unit – I	Database System Concept	09
	An Introduction to database - Data, DBMS , Application of database. Introduction to RDBMS, Characteristics of RDBMS , DBMS Vs. File System Advantages and Disadvantages of RDBMS, Data abstraction Database languages, Introduction to client server architecture, Two/Three tier Architecture, Database Users Functions of Database Administrator	
Unit – II	Relational Data Model , Security And Integrity Specification	09
	Data Model- Network Model, Hierarchical Model and Relational Model. Relational Model: - Basic Concepts Attributes and Domains. Key Concepts: - Candidate key, Primary key, Foreign key and Super key. E-R model, Types of attributes. Integrity Constraints-Domain Integrity Constraints, Entity integrity Constraints, Referential Integrity Constraints. Database Security. Database Design: Relational database, Normal forms: 1NF, 2NF, 3NF, BCNF.	
Unit – III	Query Processing and Optimization	08
	Query Processing and Optimization: Evaluation of Relational Algebra Expressions, Query Equivalence, Join strategies, Query Optimization Algorithms.	
Unit – IV	Introduction to SQL	08
	Introduction to SQL, Data Types in SQL, DDL Commands, DML Commands. SQL Operators Aggregate Functions DCL Commands: GRANT and REVOKE TCL Commands: COMMIT, SAVEPOINT and ROLLBACK Sub queries and Joins. Concept of Views and Indexes. Triggers	
Unit – V	Transaction Management	08
	The concept of Transaction ACID properties, States of Transaction. Concurrency Control Concepts. Concept of Deadlocks	

Text Books		
Name of Authors	Title of the Book	Publisher
Silberschatz, Korth, Sudershan	Database System Concepts	McGraw-Hill Education
Elmasari & Navathe	Fundamentals of Database System	Pearson Education
Reference Books		
Bipin Desai	An introduction to Database System	Galgotia Publications
Ivan Bayross	SQL/PLSQL the programming language of oracle	BPB Publications

Subject Name: Advanced Java Programming		
Course Code: BVSWC303	Semester: III	
Weekly Teaching Hours: TH: 03 Tut: 00	Scheme of Marking TH: 25 IA: 25 Total: 50	
TH Exam Duration: 01 Hours	Scheme of Marking PR: --	
Credit :03		
Content		Hours
Unit – I	Introduction To Abstract Windowing Toolkit (AWT) & Swing	08
	Component, container, window, frame, panel. AWT controls & layout managers:- Understanding the use of AWT controls. Introduction to swing :- Swing features, MVC Architecture.	
Unit – II	Event Handling	09
	The delegation Event Model Event sources, Event listeners, Event classes. The Action Event class, The Component Event class, the Container Event class. Event listener interfaces The Action Listener Interface, the Component Listener Interface, the Container Listener Interface, the Focus Listener Interface.	
Unit – III	Serialization and Collection	08
	Object Serialization Basics, Deserialization of the Java object, transient Keyword, Collection framework, Collection interfaces and classes.	
Unit – IV	Networking & Security	08
	Basics of Networking - Socket, IP, TCP, UDP, Proxy Server and Internet Addressing. The InetAddress Class - Factory methods, Instance methods, TCP/IP Sockets, URL Connection, http, URL Connection methods, creating & using TCP/IP client & server. Security with Java: Package, Permission class and Policy class	
Unit – V	Servlets & JSP	09
	Servlets: Web terminologies, Web Application Basics, Brief HTML review, Servlet Overview, Servlet Life Cycle, Handling GET and POST requests, RequestDispatcher interface, Session Management JSP : JSP expression, directives& declarations, Life cycle of a JSP page TLD & JSTL, Java beans	

Text Books		
Name of Authors	Title of the Book	Publisher
Joshua Bloch	<u>Effective Java</u>	Addison Wesley
Herbert Schildt	<u>Java: A Beginner's Guide</u>	McGraw-Hill Education
Kathy Sierra & Bert Bates	<u>Head First Java</u>	Shroff/O'Reilly
Herbert Schildt	<u>Java - The Complete Reference</u>	McGraw Hill Education

Subject Name: Window Configuration and Server Administration		
Course Code :BVSWC304	Semester: III	
Weekly Teaching Hours: TH: 03 Tut: 00	Scheme of Marking TH: 25 IA: 25 Total: 50	
TH Exam Duration: 01 Hours	Scheme of Marking PR: --	
Credit :03		
Content		Hours
Unit – I	Windows Services	06
	Understand windows application deployment methods. Integrating data	
Unit – II	Windows Application	09
	Windows 10: Installing, upgrading and migrating to Window 10 Deploying Windows 10, Configuring disk and device drivers Configuring, file access and printers on Window 10 client.	
Unit – III	Network basics	09
	Transmission media, Install UTP(Straight, Cross, Rollover Cables) IP Addressing, Subletting, Wireless Network, Network Devices. Server Installation Drivers, Working with windows server Devices, Troubleshooting Devices & Drivers, Managing system updates.	
Unit – IV	Working With Disk Storage	06
	Type of Disk Storage, Type of volumes Implementing fault tolerance, Use disk management tools Disk Quota, Troubleshooting disk management, Shadow copy. Domain Controller: Install Active Directory Manage Active Directory Component Working with OU Structure, Working	
Unit – V	DNS & DHCP	06
	Define Name resolution Install DNS, Configure DNS Client , Manage and Troubleshoot DNS Configure DNS Server , Working With Super Scope Configure DHCP Client , Manage and Troubleshoot DHCP Server.	
Unit – VI	Backup and Restore	06
	Requirement for Backup and Recovery AD, Issue for AD Backup and Recovery, Steps for Backup and Recovery AD.	

Text Books		
Name of Authors	Title of the Book	Publisher
Mike Halsey	Windows 10 Trobleshooting	Apress
Andrew Bettany, Andrew Warren	Installing and Configuring Windows 10	Pearson Education
Joan Lambert, Steve Lambert	Windows 10 Step by Step	Pearson Education

Lab - Relational Database Management System Lab	
Course Code :BVSWL305	Semester:III
Weekly Practicals: PR: 01 Tut: 00	Scheme of Marking TH: --
TH Exam Duration:--	Scheme of Marking PR: 25, IA: 25, Total: 50
Credit:1.5	
Contents	
<ol style="list-style-type: none"> 1. Create minimum set of six tables using following constraints: a) Primary key b) Foreign key c) Not Null d) Check e) Unique f) On delete/update cascade g) Default 2. Use Alter, drop and truncate command on above created table 3. Insert minimum ten records in each of the above created tables and comment on the constraints specified. Use delete, update and select commands on created records. 4. Execute Grant and Revoke commands on created tables. 5. Execute SQL queries using Aggregate functions on above tables a) count b) sum c) min d) max e) avg . Use group by and having clause 6. SQL Queries based on joins (on above created tables):a) Natural Join b) Left Outer Join c) Right Outer Join d) Full Outer Join 7. SQL Queries based on Nested Queries 8. SQL Queries based on Views 9. Indexing : <ol style="list-style-type: none"> a. Insert large number of records in the above created schema. Then record the time taken by the Query to insert the data. b. Find the Query plan for any two queries which have where clause. c. Now create index on un-indexed attribute. 10. Assignment based on Triggers 	

Lab- Advanced Java Programming Lab

Course Code :BVSWL306	Semester:III
Weekly Practicals: PR: 01 Tut: 00	Scheme of Marking TH: --
TH Exam Duration:--	Scheme of Marking PR: 25, IA: 25, Total: 50
Credit:1.5	

Content

1. Develop a program to create resizable frame with the label "Login ID " and a frame with title, Login Page.
2. Develop a program to create three Radio button once user click on button background color will change such as "red","green","blue".
3. Develop a program of Event Handling .
4. Develop a program to serialize and deserialize the object
5. Write program to implement ArrayList and LinkedList by implementing Collection framework.
6. Develop a program to retrieve IP Address of Local machine with Host name
7. Write program to create own servlet by implementing Servlet interface.
8. Write program to create servlet by inheriting HttpServlet class.
9. Write program to create login and logout form by using JSP.
10. Mini Project Work

Semester III - On-Job-Training (OJT)/Qualification Packs (Any One)

Group GEM3 of Qualification Packs

Subject Name: Test Engineer (SSC/Q1301)	
Course Code : BVSWE317	Semester: III
Weekly Skilling Hours: PR: 24 Tut: 00	Scheme of Marking TH: 00 , IA: 00 , Total: 00
PR Exam Duration: 06 Hours	Scheme of Marking PR: 150 , IA: 50 , Total: 200
Credit: 15	Choose any one from specified Group GEM3 of Qualification Packs
Syllabus for this qualifier Pack is available on http://www.sscnasscom.com/qualification-pack/SSC/Q1301/	

Subject Name: Master Trainer for Software Developer (SSC/Q0509)	
Course Code : BVSWE328	Semester: III
Weekly Skilling Hours: PR: 24 Tut: 00	Scheme of Marking TH: 00 , IA: 00 , Total: 00
PR Exam Duration: 06 Hours	Scheme of Marking PR: 150 , IA: 50 , Total: 200
Credit: 15	Choose any one from specified Group GEM3 of Qualification Packs
Syllabus for this qualifier Pack is available on http://www.sscnasscom.com/qualification-pack/SSC/Q0509/	

***Skill Practical assessment will be done rules/ procedure of respective Skill Sector Council of India.**

Semester
IV
Syllabus

Subject Name: Software Testing and Project Management		
Course Code :BVSWC401		Semester: IV
Weekly Teaching Hours: TH: 03 Tut: 00		Scheme of Marking TH: 25 IA: 25 Total: 50
TH Exam Duration: 01 Hours		Scheme of Marking PR: --
Credit :03		
Content		Hours
Unit – I	Testing basics and Development Models	09
	Principals and context of testing in software production, Usability and Accessibility Testing, Phases of Software Project, Process models to represents different phases, Software Quality Control and its relation with testing, validating and verification.	
Unit – II	White and Black Box Testing	08
	White Box Testing: White Box Testing - Static Testing, Structural Testing-Unit code functional testing, Code coverage testing, code complexity testing, Black Box Testing- What? Why and when to do Black box testing, Requirements based testing, Positive and Negative Testing, Boundary value testing, Decision Tables, Equivalence Partitioning, State Based or Graph Based Testing, Compatibility Testing	
Unit – III	Integration, System and Acceptance Testing	09
	Integration Testing: Introduction and types of integration testing, Scenario testing, defect bash. System and Acceptance Testing- Overview, functional and non-functional testing, Acceptance testing. Overview of some software testing tools: WinRunner, LoadRunner, Test Director. (Some practical should be conducted using these tools)	
Unit – IV	Performance and Adhoc Testing	09
	Performance Testing- Introduction, factors related to performance testing, methodology for performing testing, Regression Testing, Ad hoc Testing- Overview, Buddy & pair testing, Exploratory testing, Interactive testing, Agile and extreme testing. Testing of Object OrientedTesting – Introduction, Differences in OO testing.	
Unit – V	Software Project Management	07
	Software Project Management: Overview, Software Project Management Framework, Software Development life cycle, Organization Issues and Project Management, Managing Processes, Project Execution, Problems in Software Projects, Project Management Myths and its clarifications. Project Scheduling: Scheduling and its need, scheduling basics, Gant Chart, Network scheduling techniques, PERT and CPM	

Text Books		
Name of Authors	Title of the Book	Publisher
Boris Bezier	Software testing tools	Dreamtech Publication
Ron Patton	Software testing	Tech Publications
Rogger S. Pressman	Software Engineering: A Practitioner’s Approach	McGraw Hill Publication.
CemKener	Testing Computer Software	Van Nostrand Publications

Subject Name: Android Application Development		
Course Code :BVSWC402		Semester: IV
Weekly Teaching Hours: TH: 03 Tut: 00		Scheme of Marking TH: 25 IA: 25 Total: 50
TH Exam Duration: 01 Hours		Scheme of Marking PR: --
Credit :03		
Content		Hours
Unit – I	Introduction to Android	09
	Introduction to Android, Smartphone's features, Preparing the Environment, Installing the SDK, Creating Android Emulator, Installing Android Development Tools, Android versions, Android Architecture, Android Stack, Android applications structure.	
Unit – II	Android Interface	06
	Creating a project, working with the AndroidManifest.xml, Using the log system Activities. Introduction to UI – Layouts, Fragments, Adapters, Action bar, Dialogs, Notifications, UI best practices UI Architecture, Application context, Intents, Activity life cycle, supporting multiple screen sizes.	
Unit – III	Android Controls	09
	Designing User Interface Using Views – Basic Views- Text View, Button, Image Button, Check Box, Toggle Button, Radio Button etc., Progress Bar View and Auto Complete Text View, Time Picker and Date Picker View, List View, Image View, Image Switcher and Grid View, Digital Clock & Analog Clock Views Notification and Toast, Parameters, on Intents, Pending intents, Status bar notifications, Toast notifications.	
Unit – IV	Android Components	06
	Menus, Localization, Options menu, Context menu Dialogs-Alert dialog, Custom dialog, Dialog as Activity Orientation and Movement- Pitch, roll and yaw, Natural device orientation, working with Media –Playing audio and video, Recording audio and video.	
Unit – V	Android Location & Maps	06
	Location and Maps - Google maps, Using GPS to find current location Working with data storage - Shared preferences, Preferences activity, Files access, Using External storage, SQLite database.	
Unit – VI	Working with Sensors	06
	Animation-View animation, Drawable animation. Working with Sensors - Accelerometers, Gyroscopes and other types Working with Camera – Controlling the camera, Preview and overlays and taking pictures.	

Text Books		
Name of Authors	Title of the Book	Publisher
John Horton	Android Programming for Beginners	Packt Publishing
Michael Burton	Android App Development for Dummies	Wiley Publication
Ramesh Bangia	Learning Android	Khanna Publishing House

Subject Name : Web Development Using PHP		
Course Code :BVSWC403	Semester: IV	
Weekly Teaching Hours: TH: 03 Tut: 00	Scheme of Marking TH: 25 IA: 25 Total: 50	
TH Exam Duration: 01 Hours	Scheme of Marking PR: --	
Credit:3		
Content		Hours
Unit - I	Introduction to PHP	06
	Overview of PHP, Advantages of PHP, Evaluation of PHP, Basic Syntax, Defining variable and constant, PHP Data types, Operators and Expressions.	
Unit - II	Handling HTML Form With PHP	09
	Working with forms, form elements (Text Box, Text Area, Password, Radio Button, Checkbox, The Combo Box, Hidden Field and image etc.), Capturing Form Data, Dealing with Multi-value filed, Generating File uploaded form, Redirecting a form after submission.	
Unit-III	Decisions and loop	09
	Decision Making, Repetitive task with looping, Combining Decision making and looping with HTML.	
Unit- IV	Function and Array	09
	What is a function, Define a function, Call by value and Call by reference, Recursive function. Introduction to Array, Creating index based and Associative array, Accessing array Element Looping with Index based array, Looping with associative array using each() and foreach()	
Unit - V	Database Connectivity with MySql	05
	Introduction to RDBMS, Connection with MySql Database, Performing basic database operation(DML) (Insert, Delete, Update, Select), Setting query parameter, Executing query, JOIN(Cross joins, Inner joins, Outer Joins, Self joins.)	
Unit- VI	Cookies and Sessions	04
	Handling cookies with PHP, Handling session with PHP	

Reference Books		
Name of Authors	Title of the Book	Publisher
Web Tech Solutions	Mastering PHP	Khanna Publishing House
Ramesh Bangia	Learning PHP	Khanna Publishing House

Subject Name : Cyber Security		
Course Code :BVSWC404		Semester: IV
Weekly Teaching Hours: TH: 03 Tut: 00		Scheme of Marking TH: 25 IA: 25 Total: 50
TH Exam Duration: 01 Hours		Scheme of Marking PR: --
Credit :03		
Content		Hours
Unit – I	Basics of Network	08
	Internet, Web, Types of web - Surface web, deep web and dark web OSI Model and TCP/IP Model Network Devices - Router, Brouter, Switch, Hub, Bridge, Repeater, Gateway and NIC Network terminologies - IP IPv4 and IPv6, MAC address, Address mapping (ARP, RARP), DNS and DHCP	
Unit – II	Introduction to Cyber Security	06
	Cyber Security- Introduction, Importance, Types - Network security, Application security, Information security, Mobile Security and Cloud Security CIA Model	
Unit – III	Cyber Threats	08
	Cyber Threats - Social engineering, Password Cracking, Malware - Virus, Worm, Spyware, Adware, Key logger; Ransomware, Botnet, DoS attack, DDoS attack, spoofing, Phishing, Pharming attack, SQL Injection, Buffer Over Flow, Man-in-the-middle attack, format string attacks, Cross site Scripting(XSS) and Identity Theft	
Unit – IV	Cyber Security Tools	06
	Cyber Security Tools - Firewall, Antivirus, VPN, Routine Updates PKI Services, Managed Detection and Response Service, Penetration Testing and Awareness	
Unit – V	Ethical Hacking	08
	Hacking, Ethical Hacking, Phases of Ethical Hacking - Reconnaissance, Scanning, Gaining Access, Maintaining Access and Clearing Track Hacker, Types of hacker - white hat hacker, gray hat hacker and black hat hacker Skills Required to Become an Ethical Hacker Ethical hacking tools - NMAP, Metasploit, Burp Suit, Angry IP Scanner, Cain & Abel, Ettercap, EtherPeek, SuperScan, QualysGuard, WebInspect, LC4, LANguard Network Security Scanner and Network Stumbler	
Unit – VI	Cyber Law	06
	Cyber law, Constraint and Scope of Cyber Laws Evolution of the IT Act 2000 Salient features of the IT Act, 2000	
Text Books		
Name of Authors	Title of the Book	Publisher
Dejan Kosutic	9 Steps to Cyber Security The Manager’s Information Security Strategy Manual	Advisera Expert Solutions
Anil Shinde	Introduction to Cyber Security	Notion Press
Mayank Bhushan, Rajkumar Singh Rathode, Aatif Jamshed	Fundamentals of Cyber Security	BPB Publications

Lab - Android Application Development Lab	
Course Code :BVSWL405	Semester:IV
Weekly Practicals: PR: 01 Tut: 00	Scheme of Marking TH: --
TH Exam Duration:--	Scheme of Marking PR: 25, IA: 25, Total: 50
Credit:1.5	
Contents	
Subject Name: Android Application Development Lab	
<ol style="list-style-type: none"> 1. Write an application which will print "Hello World!" 2. Write an application that uses UI Layout and Control. 3. Write an application that makes use of Style & Themes. 4. Write an application that uses Event Handling. 5. Write an application that uses Alarm, Notification. 6. Write an application that uses Menu. 7. Write an application that shows the use animation. 8. Write an application that shows the use of Image Effects. 9. Write an application that shows the use Image Switcher. 10. Write an application that shows the use of database. 	

Lab - Web Development using PHP Lab	
Course Code :BVSWL406	Semester:IV
Weekly Practicals: PR: 01 Tut: 00	Scheme of Marking TH: --
TH Exam Duration:--	Scheme of Marking PR: 25, IA: 25, Total: 50
Credit:1.5	
Contents	
Subject Name: Web Development using PHP Lab	
<ol style="list-style-type: none"> 1. Write a PHP program to input and output value or text. 2. Write a PHP program to demonstrate the use of conditions. 3. Write a PHP program to demonstrate the use of loop control structures. 4. Write a PHP program to demonstrate the use of switch statement. 5. Write a PHP program to demonstrate the use of arrays. 6. Write a PHP program to demonstrate the use of date and time functions. 7. Write a PHP program to demonstrate the use of mathematical and string functions. 8. Write a PHP program to demonstrate the use of session and cookies. 9. Create the database using MYSQL or others and Write a PHP program to connect to database. 10. Write a PHP program to insert, delete, update and query to the database table. 11. Based on above program demonstrations create a Mini Project: To Design the web pages use bootstrap or similar technologies. To make web page interactive and transactional use PHP and MySql or any other database. Each student must do his/her own project independently. 	

Semester IV - On-Job-Training (OJT)/Qualification Packs (Any One)

Group GEM4 of Qualification Packs

Subject Name: QA Engineer (SSC/Q1302)	
Course Code : BVSWE417	Semester: IV
Weekly Skilling Hours: PR: 24 Tut: 00	Scheme of Marking TH: 00 , IA: 00 , Total: 00
PR Exam Duration: 06 Hours	Scheme of Marking PR: 150 , IA: 50 , Total: 200
Credit: 15	Choose any one from specified Group GEM4 of Qualification Packs
Syllabus for this qualifier Pack is available on http://www.sscnasscom.com/qualification-pack/SSC/Q1302/	

Subject Name: Associate-Recruitment (SSC/Q2501)	
Course Code : BVSWE428	Semester: IV
Weekly Skilling Hours: PR: 24 Tut: 00	Scheme of Marking TH: 00 , IA: 00 , Total: 00
PR Exam Duration: 06 Hours	Scheme of Marking PR: 150 , IA: 50 , Total: 200
Credit: 15	Choose any one from specified Group GEM4 of Qualification Packs
Syllabus for this qualifier Pack is available on http://www.sscnasscom.com/qualification-pack/SSC/Q2501/	

***Skill Practical assessment will be done rules/ procedure of respective Skill Sector Council of India.**