Syllabus

Cyber Secured Web Development Associate

S No.	Module Name	Topics	Duration (Hours)		Learning Outcomes
			Theory	Lab	
1	Computer Fundamentals and Operating System	• Computer Fundamentals, Hardware / Software, Applications • Basics of Operating system, OS Installation (Window & Linux), Basics of Windows operating system, various types of Linux installation (Red Hat, Centos, Ubuntu), Booting process • Basic Linux Command, vi, vim, Nano text editor • Advance Linux Commands • Shell Scripting	120	60	• Students will acquire the foundation level knowledge required to understand computer and its operations • Students will understand the hardware and software components of the computer. • Students will get to know operating system and various different operating systems • Students will get to know the various Linux Commands.

2	Fundamentals of Internet and Computer Network	• Basics of Internet, usages & its applications • Introduction to LAN, MAN, PAN, WAN, WLAN Ethernet Fundamentals and Cabling, ISO-OSI Reference Model, TCP/IP Model, • IP address, Classes, Classless, CIDR, Prefix, IPv6 addressing • TCP/IP Troubleshooting utilities like hostname, ipconfig/ ipconfig, Arp, Ping, tracert/trace route, Path ping, route, netstat, getmac, nslookup. • Router and switch Hardware, enable telnet and SSH access on Router • Basics of routing and switching, routing classification, Static Routing, Default routing, Dynamic routing • Types of Switches, installation, configuration, MAC binding • NAT Concept, static NAT, Dynamic NAT configuration and troubleshooting • Gateway load balancing • Switching process, VLAN concept, VLAN trunking protocol IEEE802.1Q, VTP • Configuring services -Telnet, SSH, NFS, FTP, Web, DHCP, DNS etc. • Access control Lists, standard ACL, Extended ACL, Named ACL • Virtual Private Networks (VPNs), Concepts, Site-to-site VPN configuration, Easy VPN Server Concept.	120	120	• Students will get to know the effectively use the Internet for both information retrieval and data transfer. • Students will understand the client server relationships between Web servers and Web browsers. • Students will understand the different types of Networks. • Students will understand the communication devices. • Students will understand the domain name concept and services, Internet addressing and URL's. • Students will plan and manage the back-end infrastructure of a small-to medium-size Web site. Design a simple web page using Hypertext Markup Language (HTML). • Students will setup Internet network platforms effectively use the Internet for both information retrieval and data transfer. • Students will establish and configure networking concepts. Understand how to perform simple network administration operation.

3	Web Application Development	**3.1 Front End Development** • Introduction to Web Design • Text Editors and their installation • HTML-5 Basics and its uses • Cascading Style Sheets (CSS) • JavaScript • Bootstrap- 4 and advance **3.2 Data base Concepts** • Introduction to Data base, types and comparative study • Introduction to My SQL Work bench, • My SQL data base • Table & Views, My SQL Queries, clauses, conditions, joins • Aggregate functions, My SQL functions (built in /custom) **3.3 Back End Development** • Introduction to the Website Development • Implementation of a server-side programming language PHP and website security • Database connectivity with PHP and My SQL	100	200	• Students will acquire the foundation level knowledge required to website development. • Students will understand the database concepts and also create the database by using SQL. • Students will understand the web designing concept by using the HTML. • Students will get to know the database connectivity with PHP and MySQL. • Students will understand the concept of Front End and Back End development.

4	Cyber Security & Web App Penetration Testing	**4.1 Ethical hacking (Cyber Security) & Counter Measures** • Basics of Cyber Security • Cryptography • Introduction to Ethical Hacking • Foot printing and Reconnaissance • Scanning Networks • Enumeration • Vulnerability Analysis • System Hacking • Malware Threats • Sniffing • Social Engineering • Denial-of-Service • Session Hijacking • Evading IDS, Firewalls, and Honey pots • Hacking Wireless Networks • Hacking Mobile Platforms • IoT and OT Hacking • Cloud Computing & its Security • securing DNS server • securing Web server • Securing DB server • Linux based Firewall, IP tables, ACLs, etc **4.2 Web App Penetration** • Hacking Web Servers & Applications • Web Application Testing Frameworks • OWASP top 10 • Secure Coding Practices • Web Application API Testing • Best Practices for Protecting Web Applications	50	130	• Students will acquire knowledge of Cyber Security. • Students will understand the different terms under Cyber Security. • Students will understand the ethical hacking. • Students will understand the different threats. • Students will understand the different platforms of Hacking. • Students will understand how to secure the different types of server. • Students will understand the hacking web servers & applications.

Sub Total = 900 hours		390	510	
5	Employability Skills	60		Students will be able to get the additional skills apart from the technical skills, to be job ready
6	OJT	30		Students will be able to learn the working in a job.
Total Duration		**990**		