Department of B.Voc(Software Development)
Revised Syllabus of III Year Diploma Program (UG)

Title of Program: Cloud Computing

Syllabus Structure (UG)

Year	Semester	Course No.	Course Code	Contact Hours	Credits (1Credit=15 H)	Total Marks
2	V	CT V	DBVT 505	30	2	75
		CLV	DBVL505	60	2	75
	VI	CT VI	DBVT 606	30	2	75
		CL VI	DBVL606	60	2	75
	Annual	CP III	DBVP303	60	2	100
	Industrial and or Incubation and or Research and or Field Training			30	1	-
			Total	**270**	**11**	**400**

Semester V

CT-III: DBVT 505: Title: Cloud Infrastructure & Networking

(Contact Hrs: 30 Credits: 2)

Learning Objectives:

Students will be able to

1) Understand OSI Networking Model

2) Understand addressing IPV4 & IPV6

3) Understand the Connectivity on cloud

Unit I: Network Management Basics and Linux (15)

OSI Network Management Model, Introduction to ISO, TCP/IP Stack, DNS/UDP/IP, TCP/HTTP, HTTPS, ICMP/DHCP, Cabling (Connectivity on cloud), Addressing - IPV4 & IPV6, Managing Basic Switches, Managing Advanced Switches, Managing Basic Routers Basic Linux: Introduction to Linux ,Fundamentals & Commands, Advanced Linux Commands.

Unit II: Cloud Infrastructure and its Implementation (15)

what is cloud infrastructure? What is cloud architecture? Implementation (With AWS or GCP): Computing (Creating a server with minimum specifications), Networking (Network configuration for created server) and Storage services (Attaching storage to created server)

Advanced Linux Server: Configuring DNS Server, Any web Server configuration ,Configuring MySQL/Posture sql Server, Configuring Mail Server, Configuring File Servers, SAMBA and NFS Server, Squid Proxy Server, Squid Proxy Server, LDAP server.

Windows: Installing Windows Server, Setting Active Directory, Managing Active Directory, Managing User & Group, Setting File, Web Servers on windows

Learning Outcomes:

After completion of the unit, Student is able to

1. Work in Multiple Cloud Networking technology
2. Understand the Storage and Back end technologies of Cloud

(Minimum 2)

Reference Books:

1. Cloud Computing: Implementation, Management, and Security, Rittinghouse, J.W. & Ransome

2. The Basics of Cloud Computing: Understanding the Fundamentals of Cloud Computing In Theory and Practice, Rountree, D. & Castrill

CL-III: DBVL505: **Title:**

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(Contact Hrs: 60 Credits: 02)
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Learning Objectives:

Students will be able to

1) Understand OSI Networking Model
2) Understand addressing IPV4 & IPV6
3) Understand the Connectivity on cloud

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List of Practical's (15)
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1. Project for the Year.
2. Configure the servers on any of the free cloud platforms with CentOS operating system. (Configuring DNS Server, Any web Server configuration ,Configuring MySQL/Postgresql Server, Configuring Mail Server, Configuring File Servers, SAMBA and NFS Server, Squid Proxy Server, Squid Proxy Server, LDAP server)
3. Make configurations on any free cloud platform with windows server OS: Installing Windows Server, Setting Active Directory, Managing Active Directory, Managing User & Group, Setting File, Web Servers
4. Case study: Cloud Computing Infrastructure.

5. Paper Presentation / PPT Presentation on Big Data with cloud, DevOps with cloud, Cloud Security, Cloud Cryptography, Containerization, Cloud Deployment Model, Mobile Cloud Computing, Green Cloud Computing, Edge Computing .
6. Create two or three instances(servers) with different operating systems using AWS and GCP and connect each with each other and implement the Network Management Basics and Linux operations on created servers.

Learning Outcomes:

After completion of the unit, Student is able to

1. Work in Multiple Cloud Networking technology
2. Understand the Storage and Back end technologies of Cloud

Reference Books:

1. Cloud Computing: Implementation, Management, and Security, Rittinghouse, J.W. & Ransome

2. The Basics Of Cloud Computing: Understanding The Fundamentals Of Cloud Computing In Theory And Practice, Rountree, D. & Castrill

Semester VI

CT-IV: DBVT 606: Title: Automation of Cloud

(Contact Hrs: 30 Credits: 2)

Learning Objectives:

Students will be able to

1) Understand Concept of Big data with cloud
2) Understand cloud security
3) Understand AWS cloud
4) Understand the concept of Automation for cloud

Unit I: Few important topics for cloud   (15)

Big Data with cloud, DevOps with cloud, Cloud Security, Cloud Cryptography, Containerization, Cloud Deployment Model, Mobile Cloud Computing, Green Cloud Computing, Edge Computing.

Unit II: Tools for Cloud Infrastructure Automation   **(15)**

AWS Cloud Formation, Puppet, Ansible, Chef, Kubernetes, Terraform, Google Cloud Deployment Manager, Microsoft Azure Automation, Cisco Intelligent Automation for Cloud, SaltStack, VMware vCenter Configuration Manager (VCM), CFEngine, Foreman

Learning Outcomes:

After completion of the unit, Student is able to

1) Use All type of Automation tools

2) Able to convert cloud infrastructure to automation

Reference Books:

1. Cloud Computing: Implementation, Management, and Security, Rittinghouse, J.W. & Ransome

2. The Basics Of Cloud Computing: Understanding The Fundamentals Of Cloud Computing In Theory And Practice, Rountree, D. & Castrill

CL-IV: DBVL606: **Title (Practical): Automation of Cloud**

(Contact Hrs: 60 Credits: 02)

Learning Objectives:

Students will be able to

1) Use All type of Automation tools

2) Able to convert cloud infrastructure to automation

List of Practical's (15)

1. Complete Analysis on cloud computing Infrastructure Automation Tools. Write down key features , advantages, dis-advantages with each other.

2. Write Cloud Computing Interview Questions (100 per head), write it in wordpad or word document. Prepare on your own, copy it from the internet. Cover each topic from the above syllabus.

3. Write down questions and answers on each topic which is given in the syllabus (So it will cover all Academic preparations)

4. Give an assignment on each topic on chapter compilation.

5. Arrange mock interviews on cloud computing. Cover topics which are mentioned in the syllabus of first and second year.

6. Ask students about previous year practicals and lab practice documents and give them marks on the basis of all three year lab practicals documents. This will help students in interviews

Learning Outcomes:

After completion of the unit, Student is able to

1) Use All type of Automation tools

2) Able to convert cloud infrastructure to automation

3) Use AWS Cloud

Reference Books:

1. Cloud Computing: Implementation, Management, and Security, Rittinghouse, J.W. & Ransome

2. The Basics of Cloud Computing: Understanding the Fundamentals of Cloud Computing In Theory And Practice, Rountree, D. & Castrill

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CP-II: DBVP303: Project
(Contact Hrs. 30, Credits: 1)

Industrial and or Incubation and or Research and or Field Training
(Contact Hrs. 30, Credits: 1)

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BOS Sub-Committee		Expert Committee	
1. Ms.Jagadale R.S.	Chairman	1. Mr.Akshay Utale	(Industrial Expert)
2. Mr.S.A.Doke	Member	2. Mr.Ganesh Dangat	(Academic Expert)