CURRICULUM

Course Name	CLOUD COMPUTING
Course Code	CSE/2020/019
Course Duration	80 Hours
Minimum Eligibility Criteria and Pre-requisites(if any)	ITI/10th/+2/Diploma/Graduates Basics Knowledge of Grid Computing
Course Objectives	The main objectives of the Training module : - To provide students with fundamentals and essentials of cloud computing. - To provide sound foundation of the cloud computing so that they start using and adopting cloud computing services and tools in their real scenarios. - To enable students exploring some important cloud computing driven applications. - To provide Knowledge of cloud computing host web services, store and backup data, high-performance computing, host and stream media, build search engines, server-side of mobile applications
Course Outcomes	After the completion of the course, the students will have the - Knowledge to setup cloud, virtualization of PC's. - Idea of Cloud Computing and they will use the different Cloud services and deployment models - Knowledge of importance of virtualization along with their technologies. - Idea to use the key components of Amazon web Service - Knowledge of Design & develop backup strategies for cloud data based on features.
Expected Job Roles	Cloud Developer

TEACHING AND SCHEME OF EXAMINATION						
Course Code	Course Name	Hours		Assessment Marks		Duration of Examination
				Min	Max	
CSE/2020/019	CLOUD COMPUTING	Theory	30	10	20	3 Hours
		Practical	50	40	80	
		Total	80	50	100	

CSE/2020/019 - CLOUD COMPUTING
DETAILED SYLLABUS

UNIT NO	MODULES	NO.OF.HOURS THEORY
I	**INTRODUCTION TO CLOUD COMPUTING**	
1.1	Basics of Cloud Computing-Introduction about Cloud Computing - How Cloud & Grid are related – Virtualization-– Cloud Computing Services	6
1.2	- Cloud Computing Themes - Cloud Models - Short Term Implications of Clouds -	
1.3	Economics of Cloud Users - Economics of Cloud Users – Economics of Cloud Providers – Failures -	
1.4	Adoption Challenges - Growth Challenges -	
1.5	Policy and Business Challenges - Long Term Implications of clouds - Cloud Computing Progress	
II	**CLOUD COMPUTING SERVICES**	
2.1	C loud Delivery/Service models: IaaS- Infrastructure as a Service, PaaS- Platform as a Service, SaaS- Software as a Service	6
2.2	Cloud Storage - Cloud Providers-AWS –Amazon Web Service, Azure –Microsoft	
2.3	V Cloud –VMWare, IBM Cloud, Oracle Cloud, Go-Grid Cloud	
III	**CLOUD TOOLS**	
3.1	Private Cloud Enabling Technologies	6
3.2	Eucalyptus - Eucalyptus Usage	
3.3	Eucalyptus architecture	
3.4	Basic Tools – OpenStack	
3.5	3 Major OpenStack Components , Working with OpenStack	
IV	**GOOGLE APPLICATIONS**	
4.1	Google Drive – A simple Storage Cloud- Google Docs -	6
4.2	Explanation using a demo of creating and using it as a collaborator-Google Presentation- Various Applications.	
4.3	Google Sheets – Various Applications.	
4.4	Google forms- Various Applications	
V	**CLOUD STORAGES**	
5.1	Cloud Data Storage-Cloud Scale Distributed Data Storage -EC2 – Virtual Server.	6
5.2	Working with Microsoft Windows server- Advantage of AWS Free Servers-EC2 – Virtual Server. Working with Linux Servers	
	Total Theory Hours	**30**
	Total Practical Hours	**50**
	Total Hours	**80**

PRACTICAL (50 HOURS)

1.   Configure a server with two clients and observe how resources are being used in this Client server model.

2.   Search the web for the best IaaS provider, PaaS provider and SaaS provider and justify their selection.(Based on what criteria they have been selected as the best)

3.   Create Google docs and design the report. Create a document using Google Docs and collaborate among yourselves in modifying and editing the contents to arrive at the final report.

4.   For the above mentioned event to be hosted by the college students design a
         a. Poster using Google Presentation, b. Certificate for the participants.
           ii.. Design a Google sheet to store the members of various committees for the event

5.   Design an application form for the participants of the above event using google forms and get it filled by them. Get the responses stored in a google sheet and analyze them by finding out the percentage of how many students have registered from each college.

6.   Our college lab assistants struggle to install some lab application like AutoCAD software, SQL Engines, Visual Studio etc. on lower hardware configuration computers. So they need a solution for this. Deploy the high end applications in Amazon cloud to solve their problems.

7.   Configure a windows server using EC2 in AWS.

8.   Configure a LINUX server in EC2.

9.   To create a Capacity Reservation using the console.

10.   Create an AWS Free Tier Account and activate the same. Prepare a Document on AWS different services on SAAS, PAAS & IAAS

11.   How to add user in EC2 instance in AWS.

12.   How to Delete EC2 instance via AWS console.

13.   How to Monitor the status of EC2 instance using the AWS console.

14.   To create windows server Instance via Google Cloud Console in GCP.

15.   To create and Launch Instance via Microsoft Azure.

HARDWARE REQUIREMENT

S.NO	LIST OF TOOLS /EQUIPMENTS
1	A simple-basic laptop/PC with linux/windows (or Mac) is more than enough as this is just like you are browsing a website.
2	Any standard x86 64-bit servers

SOFTWARE REQUIREMENT

S.NO	LIST OF SOFTWARE
1	VCloud Director
2	Final Builder; Wercker;
3	Circle CI; Azure DevOps; Bamboo; BuildBot

REFERENCE BOOKS

S.NO	NAME OF THE BOOK	AUTHOR	PUBLISHER
1.	Cloud Computing	Mahmood Zaigham	Pearson
2.	Cloud Computing, A Practical Approach	Velte Toby	Tata McGraw-Hill Education India
3.	Cloud Computing: Principles and Paradigms	Rajkumar Buyya	Wiley (2013)
4.	Mastering Cloud Computing	Buyya Raj	Mcgrawhill HED
5.	Architecting the Cloud	*Michael J. Kavis*	Wiley Publication
6.	Cloud Computing	A.Srinivsan J.Suresh	Pearson India

ASSESSMENT AND CERTIFICATION

S.No	Criteria for assessment
1.	A trainee will be assessed based on the performance in End Examination for Theory and Practical conducted internally in the Project Polytechnic College for a duration of 3 hours
2.	A trainee must have 75% of attendance to appear for End examination in Theory and Practical.
3.	The assessment for theory part will be based on the marks scored in the end examination on the knowledge bank of questions (1 word/objective type questions)
4.	The assessment for practical part will be based on the marks scored in the end examination conducted by the Project Polytechnic and assessed by the Examiners approved by Strategic Plan Implementation Committee (SPIC) of the project polytechnic.
5.	The criteria for successful completion of training is every trainee should score 50% of marks in theory and practical examination.
6.	On successful completion of training , Certificate will be issued to the participants by the Directorate of Technical Education through the Project Polytechnic.

END EXAMINATION

ALLOCATION OF MARKS

S.No	Description	Max.Marks
1.	Theory Examination	20
2.	Practical Examination	
	a)Procedure	10
	b)Execution	30
	c)Output	20
	d)Record	20
	Total Marks	**100**

THEORY MODEL QUESTION PAPER

CSE/2020/019 – CLOUD COMPUTING

(Maximum Marks : 20)

(N.B: Answer any **twenty** questions)   **20 x 1 = 20 Marks**

 1. The term "cloud" in Cloud computing refer to _____

2. The term cloud computing is a metaphor that originated in what

3. Virtual Machine Ware(VM ware) is an example of

4. What is Cloud Factory?

5. Which of these techniques is vital for creating cloud computing centers?

6. What is Private Cloud?

7. Amazon web services in which type of cloud computing distribution model?

8. Cloud Services have a _____relationship with their customer?

9. In order to participate in Cloud computing, you must be using the following OS?

10. What's the most popular use case for public computing today?

11. What is Eucalyptus architecture in cloud computing?

12. Full form of eucalyptus in cloud computing?

13. What is the difference between Open Stack and AWS?

14. What are Open Stack technologies?

15. What is mean by Private cloud computing?

16. Google's cloud service is called _____

 17. How much storage does Google give a student user for free in Google Drive?

18. What happens when you delete a file in Google Drive?

19. Google Drive was launched in what year?

20. A computer that stores and shares information with other computers on a network is called a _____

21. Google APP Engine is a type of?

22.What are the uses of cloud storage Mcq?

23. What are four benefits of cloud storage?

24. Where is data on the cloud stored?

25.What are three advantages of cloud computing?