KONGU ARTS AND SCIENCE COLLEGE

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

ERODE – 638 107

DEPARTMENT OF COMPUTER SCIENCE (UG)

VALUE ADDED COURSE – SYLLABUS

18VCSCB – CLOUD COMPUTING AND BIG DATA PROCESSING

Course Objective: The objective of the programme is to inculcate knowledge in Cloud Computing and to train up the students with focus lights on Big data processing.

PAPER I: CLOUD AND HADOOP TECHNOLOGY

UNIT I		4 Hours
Introduction to Cloud Computing – Familiar types of computing – Service models – Features of Cloud Computing – Virtualization and its Purpose – Cloud Service Providers.		
UNIT II		4 Hours
Deployment models: Private, Community, Public and Hybrid – Advantages of Cloud Computing – Issues – Deployment – Job opportunities and Scope in Cloud – Cloud Computing interviews.		
UNIT III		4 Hours
Introduction to Big Data – Usual data Vs. Big Data – Importance of Big Data - Big Data analytics. Impact of Big Data – Real time usage – Advantages of Big Data – Issues – Deployment.		
UNIT IV		4 Hours
What is Hadoop? – Hadoop Architecture – How Does Hadoop Work? – Advantages of Hadoop – Hadoop Operation Modes – HDFS – Goals of HDFS – Write Operation in HDFS – Read Operation in HDFS – What is MapReduce? – The Hadoop Services for Executing MapReduce Jobs – The MapReduce Algorithm – Inputs and Outputs (Java Perspective).		
UNIT V		4 Hours
Big Data Testing Strategy – Testing Steps in verifying Big Data Applications – Test Environment Needs – Big Data Testing Vs. Traditional database Testing – Tools used in Big Data Scenarios – Challenges in Big Data Testing – Job opportunities and Scope in Big Data – Big Data Interviews.		
	Total Hours	20 Hours

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Reference Books:

1. Anthony T.Velte, Toby J.Velte and Robert Elsenpeter – 'Cloud Computing – A Practical Approach' – TMH – 2010.
2. Gautham Shroff – 'Enterprise Cloud Computing – Technology, Architecture, Applications' – Cambridge University Press – 2011.
3. Adam Jorgensen, James Rowland-Jones, John Welch, Dan Clark, Christopher Price, Brian Mitchell – 'Microsoft Big Data solutions' – Wiley – 2014.
4. Jared Dean – 'Big Data, Data mining and Machine learning'– Wiley – 2015.

COURSE OUTCOME:

Upon successful completion of the Course, the students get transformed with clarity to fit themselves into the Cloud and Data related industries. They will be able to:

- Associate the real time scenarios with Cloud oriented concepts.
- Gain knowledge about the need of Big Data management with the skills of analytics with the help of Hadoop technology.
- Demonstrate the various functionalities related to Big Data and to manage the issues of Cloud Computing.
- Carry out the basic level testing process on Big Data

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PAPER II – PROGRAMMING LAB – CLOUD AND BIG DATA

S.No	Practical List	Hours
	Cloud Computing :	
1	Load a Guest Operating System by implementing a virtual environment.	2
2	Create an account in a free Cloud Service.	2
3	Visit any two popular Cloud Service Provider environments.	2
4	Store and retrieve files from a Cloud Storage.	2
5	Publish online content with forms using a Cloud product.	2
	Big Data Analytics : (Using Hadoop & Online Tools)	
6	Create, Edit and View a text file using a vi editor using Ubuntu Terminal in Hadoop.	2
7	Add a new user account for login to the environment in Hadoop.	2
8	Generate a Secured Key using ssh command in Hadoop.	2
9	Perform a data analysis in an online environment.	2
10	Apply a Big Data concept to a real time problem.	2
Total Hours		**20**

COURSE OUTCOME:

Upon successful completion of the Course, the students get practical knowledge on dealing up with Cloud and Big Data. They will be able to:

- Install and handle the virtual environment efficiently
- Deal with the cloud based accounts
- Take up the Cloud based services offered by the Cloud Service Providers
- Solve the Big Data issues and to handle the Ubuntu terminal with commands.
- Perform the analysis on the Big Data

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