



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad – 500043

## COMPUTER SCIENCE AND ENGINEERING

### List of Laboratory Experiments

CLOUD APPLICATION DEVELOPMENT LABORATORY								
Course Code	Category	Hours/Week			Credits	Maximum Marks		
ACSC33	Core	L	T	P	C	CIA	SEE	Total
		0	0	3	1.5	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 36			Total Classes: 36			
Branch: CSE	Semester: VII	Academic Year: 2021-22			Regulation: R18			
<b>Course overview:</b>								
<p>Cloud Computing provides us means by which we can access the applications as utilities over the internet. It allows us to create, configure, and customize the business applications online. A cloud application, or cloud app, is a software program where cloud-based and local components work together. This model relies on remote servers for processing logic that is accessed through a web browser with a continual internet connection. Hadoop is an open-source framework that allows to store and process big data in a distributed environment across clusters of computers using simple programming models. It is designed to scale up from single servers to thousands of machines, each offering local computation and storage.</p>								
<b>Course objectives:</b>								
<p>The students will try to learn:</p> <ol style="list-style-type: none"> <li>How to run virtual machines of different configuration.</li> <li>The application of Big data using Hadoop under cloud environment.</li> <li>Exposed to tool kits for cloud environment.</li> <li>How to develop web services / Applications in cloud framework.</li> </ol>								
<b>Course outcomes:</b>								
<p>After successful completion of the course, students will be able to:</p> <p>CO1 Make use of Virtualization and parallel processing on guest and host OS for performing different tasks by installing virtual machines.</p> <p>CO2 Develop Mapper and Reducer on simple applications by using Apache Hadoop on single node setup installation.</p> <p>CO3 Construct simple applications on services rendered by Amazon Web Service Cloud Service Provider.</p> <p>CO4 Build simple applications on services rendered by Google Service Provider.</p> <p>CO5 Utilize simple applications on services rendered by Microsoft Azure cloud Service Provider.</p> <p>CO6 Develop web-based App by using Yahoo! Pipes.</p>								
WEEK NO	EXPERIMENT NAME							CO
WEEK – I	VIRTUALIZATION							CO1
	Install Oracle Virtual box and create two VMs on your laptop.							
WEEK – II	VIRTUALIZATION							CO1
	Install Turbo C in guest OS and execute C program.							
WEEK – III	VIRTUALIZATION							CO1
	Test ping command to test the communication between the guest OS and Host OS.							
WEEK – IV	HADOOP							CO2
	Install Hadoop single node setup.							
WEEK – V	HADOOP							CO2
	Develop a simple hadoop application called Word Count. It counts the number of occurrences of each word in a given input set.							
WEEK – VI	HADOOP							CO2
	Develop hadoop application to count no of characters, no of words and each character frequency.							

<b>WEEK – VII</b>	<b>HADOOP</b> Develop hadoop application to process given data and produce results such as finding the year of maximum usage, year of minimum usage.	<b>CO2</b>
<b>WEEK – VIII</b>	<b>HADOOP</b> Develop hadoop application to process given data and produce results such as how many female and male students in both schools the results should be in following format. GP-F #number GP-M #numbers MS-F #number MS-M #number	<b>CO2</b>
<b>WEEK - IX</b>	<b>CLOUD PROGRAMMING</b> Establish an AWS account. Use the AWS Management Console to launch an EC2 instance and connect to it.	<b>CO3</b>
<b>WEEK - X</b>	<b>CLOUD PROGRAMMING</b> Design a protocol and use Simple Queue Service(SQS)to implement the barrier synchronization after the first phase.	<b>CO3</b>
<b>WEEK – XI</b>	<b>CLOUD PROGRAMMING</b> Use the Zookeeper to implement the coordination model in Problem 10.	<b>CO3</b>
<b>WEEK – XII</b>	<b>CLOUD PROGRAMMING</b> Develop a Hello World application using Google App Engine	<b>CO4</b>
<b>WEEK – XIII</b>	<b>CLOUD PROGRAMMING</b> Develop a Guestbook Application using Google App Engine.	<b>CO4</b>
<b>WEEK – XIV</b>	<b>WINDOWS AZURE</b> Develop a Windows Azure Hello World application using.	<b>CO5</b>
<b>WEEK – XV</b>	<b>PIPES</b> Create a Mashup using Yahoo! Pipes.	<b>CO6</b>