

**DEPARTMENT OF COMPUTER APPLICATIONS**  
**NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI**

COURSE PLAN – PART I			
<b>Name of the programme and specialization</b>	<b>M.Tech. Data Analytics</b>		
<b>Course Title</b>	<b>Big Data Management and Data Analytics Lab</b>		
<b>Course Code</b>	<b>CA609</b>	<b>No. of Credits</b>	<b>3</b>
<b>Course Code of Pre-requisite subject(s)</b>			
<b>Session</b>	<b>July 2018</b>	<b>Section (if, applicable)</b>	<b>S</b>
<b>Name of Faculty</b>	<b>Dr. Gangadharan G R</b>	<b>Department</b>	<b>Computer Applications</b>
<b>Email</b>	<b>ganga@nitt.edu</b>	<b>Telephone No.</b>	<b>0431-2503737</b>
<b>Name of PAC Chairman</b>	<b>Dr. R. Eswari</b>		
<b>E-mail</b>	<b>eswari@nitt.edu</b>	<b>Telephone No.</b>	<b>0431-2503744</b>
<b>Course Type</b>	<b>Core course</b>		
<b>Syllabus (approved in BoS)</b>			
<b>COURSE OBJECTIVES</b>			
<ul style="list-style-type: none"> <li>• Optimize business decisions and create competitive advantage with Big Data analytics</li> <li>• Imparting the architectural concepts of Hadoop and introducing map reduce paradigm</li> <li>• Introducing Java concepts required for developing map reduce programs</li> <li>• Derive business benefit from unstructured data</li> <li>• Introduce programming tools PIG &amp; HIVE in Hadoop ecosystem.</li> <li>• Developing Big Data applications for streaming data using Apache Spark</li> </ul>			
<b>COURSE OUTCOMES (CO)</b>			
<b>Course Outcomes</b>	<b>Aligned Programme Outcomes (PO)</b>		
1. Preparing for data summarization, query, and analysis.	PO I, II, III		
2. Applying data modelling techniques to large data sets	PO II, III		
3. Creating applications for Big Data analytics	PO II, III, IV, V		
4. Building a complete business data analytic solution	PO III, IV		

<b>COURSE PLAN – PART II</b>				
<b>COURSE OVERVIEW</b>				
This course makes students to understand the practical aspects of Big data management and analytics by implementing applications using MapReduce, Hadoop, Pig, Hive, and Spark.				
<b>COURSE TEACHING AND LEARNING ACTIVITIES</b>				
<b>S.No.</b>	<b>Week / Contact Hours</b>	<b>Lab Exercises</b>		
1	Week 1	(i) Perform setting up and Installing Hadoop in its two operating modes: Pseudo distributed and Fully distributed. (ii) Use web based tools to monitor your Hadoop setup.		
2	Week 2	(i) Implement the following file management tasks in Hadoop: Adding files and directories, Retrieving files, Deleting files ii) Benchmark and stress test an Apache Hadoop cluster		
3	Week 3	A basic Word Count Map Reduce program		
4	Week 4	Stop word elimination		
5	Week 5	Mining weather data		
6	Week 6	Sales data analysis		
7	Week 7	<ul style="list-style-type: none"> <li>Installing and Running Pig</li> <li>Writing Pig Latin scripts to sort, group, join, project, and filter data</li> </ul>		
8	Week 8	Writing Pig Latin scripts for an application		
9	Week 9	<ul style="list-style-type: none"> <li>Installing and Running Hive</li> <li>Using Hive to create, alter, and drop databases, tables, views, functions, and indexes.</li> </ul>		
10	Week 10	<ul style="list-style-type: none"> <li>Installing, Deploying and configuring Apache Spark Cluster.</li> <li>Running apache spark applications using Scala.</li> <li>Data analytics using Spark</li> </ul>		
<b>COURSE ASSESSMENT METHODS</b>				
<b>S.No.</b>	<b>Mode of Assessment</b>	<b>Week/Date</b>	<b>Duration</b>	<b>% Weightage</b>
1	Lab Exercises Demo & Report	Every Week		50
2	Model Test	8 <sup>th</sup> Week	180 Minutes	25
CPA	Compensation Assessment			
3	Final Assessment	-	180 Minutes	25
<b>COURSE EXIT SURVEY</b>				
<ul style="list-style-type: none"> <li>The students through the class representative may give their feedback at any time to the course coordinator which will be duly addressed.</li> <li>The students may give their feedback during class committee meetings.</li> </ul>				
<b>COURSE POLICY</b>				
<b><u>MODE OF CORRESPONDENCE</u></b>				
Email: ganga@nitt.edu				
<b><u>COMPENSATION ASSESSMENT POLICY</u></b>				
Compensation assessment will be conducted for absentees in test I or test II only after the submission of medical or On-Duty certificates signed by competent authority.				

### ATTENDANCE POLICY

- **At least 75% attendance in each course is mandatory.**
- **A maximum of 10% shall be allowed under On Duty (OD) category.**
- Students with **less than 65% of attendance** shall be prevented from writing the final assessment and **shall be awarded 'V' grade.**

### ACADEMIC DISHONESTY & PLAGIARISM

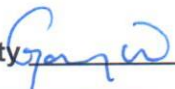
- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.

The above policy against academic dishonesty shall be applicable for all the programmes.

### ADDITIONAL INFORMATION

### FOR APPROVAL

Course Faculty



CC-Chairperson



HOD



### Guidelines:

- a) The passing minimum shall be as per the regulations.
- b) Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.