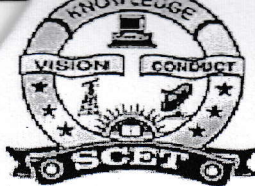


# SWARNANDHRA COLLEGE OF ENGINEERING & TECHNOLOGY (AUTONOMOUS)

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Seetharampuram, W.G.DT., Narsapur-534280, (Andhra Pradesh)

## DEPARTMENT OF INFORMATION TECHNOLOGY TEACHING PLAN

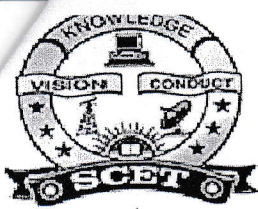
Course Code	Course Title	Semester	Branch	Contact Periods /Week	Academic Year	Date of commencement of Semester
16IT3T01	Big Data Analytics	VII	IT	5	2021-22	01-10-2021
<b>COURSE OUTCOMES</b>						
CO1	Explain the basic concepts of Big Data Analytics					
CO2	Design and explain Hadoop architecture					
CO3	Develop the Map Reduce application					
CO4	Make use of the Advanced Analytical methods for clustering					
CO5	Apply the Advanced Analytical methods using classification and Text Analysis					
CO6	Identify the various tools in Hadoop Ecosystem					
UNIT	Out Comes / Bloom's Level	Topics No.	Topics/ Activity	Text Book/ Reference	Contact Hour	Delivery Method
I	CO – 1		<b>UNIT- I Introduction to Big Data Analytics:</b>			Chalk & Board  Power point presentations  Assignment  Test
		1.1	Big Data Overview	T1	1	
		1.2	State of the Practice in Analytics	T1	1	
		1.3	Key Roles for the New Big Data Ecosystem	T1	1	
		1.4	Examples of Big Data Analytics	T1	1	
		1.5	Data Analytics Lifecycle: Overview	T1	1	
		1.6	Discovery	T1	1	
		1.7	Data Preparation	T1	1	
		1.8	Model Planning	T1	1	
		1.9	Model Building	T1	1	
		1.10	Communicate Results	T1	1	
		1.11	Operationalize	T1	1	
Content beyond syllabus		1.12	Applications of Big Data Analytics	T1,R1	1	
					<b>Total</b>	<b>12</b>
II	CO – 2		<b>UNIT- II Hadoop Distributed File System</b>			Chalk & Board  Power point presentations  Assignment
		2.1	Google File System	T2.W1,W2	1	
		2.2	Hadoop Distributed File System (HDFS)	T2.W1,W2	1	
		2.3	Building blocks of Hadoop ( Secondary Namenode, JobTracker,TaskTracker)	T2.W1,W2	1	
		2.4	Building blocks of Hadoop (Secondary Namenode, JobTracker,TaskTracker)	T2.W1,W2	1	
		2.5	Introducing and Configuring Hadoop	T2.W1,W2	1	



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			cluster (Local mode)					
		2.6	Introducing and Configuring Hadoop cluster (Pseudo-distributed mode)	T2,W1,W2	1			Test
		2.7	Introducing and Configuring Hadoop cluster (Fully Distributed mode)	T2,W1,W2	1			
		2.8	Configuring XML files	T2,W1,W2	1			
	Content beyond syllabus	2.9	Implementation of Data Node	W1,W2	2			
							10	
			<b>UNIT- III MapReduce Programming:</b>					
		3.1	A Weather Dataset	T1,R1	1			Chalk & Board
		3.2	Understanding Hadoop API for MapReduce Framework (Old and New)	T2,R1,W1	1			
		3.3	Basic programs of Hadoop MapReduce	T2,R1,W1	1			Power point presentations
		3.4	Basic programs of Hadoop MapReduce	T2,R1,W1	1			
		3.5	Driver code	T2,R1,W1	1			
		3.6	Mapper code	T2,R1,W1	1			Assignment
		3.7	Reducer code	T2,R1,W1	1			
		3.8	RecordReader	T2,R1,W1	1			Test
		3.9	Combiner, Partitioner	T2,R1,W1	1			
	Content beyond syllabus	3.10	Sample program in java	W1,W2	1			
							10	
			<b>UNIT- IV Advanced Analytical Theory and Methods-Clustering-:</b>					
		4.1	k-means	T1,T2	1			Chalk & Board
		4.2	additional algorithms	T1,T2	1			
		4.3	Association Rules	T1,T2	1			Power point presentations
		4.4	Apriori Algorithm	T1,T2	1			
		4.5	Evaluation of Candidate Rules	T1,T2	1			Assignment
		4.6	Applications of Association Rules	T1,T2	1			Test
		4.7	Transactions in a Grocery Store	T1,T2	1			
		4.8	Validation and Testing.	T1,T2	1			
	Content beyond syllabus	4.9	Case studies of Clustering Methods	W1,W2	2			
							Total	10
			<b>UNIT- V Advanced Analytical Theory and Methods-Classification:</b>					
		5.1	Decision Trees	T1,R1,R2	1			Chalk & Board
		5.2	Naïve Bayes; Advanced Analytical Theory and Methods-	T1,R1,R2	1			Power point presentations
		5.3	Time Series Analysis: Overview of Time Series Analysis,	T1,R1,R2	1			Assignment
		5.4	ARIMA Model	T1,R1,R2	1			Test
		5.5	Text Analysis: Text Analysis Steps, Text Analysis Example	T1,R1,R2	1			
		5.6	Collecting Raw Text, Representing Text	T1,R1,R2	1			
		5.7	Term Frequency—Inverse Document	T1,R1,R2	1			



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		Frequency (TFIDF)			
Content beyond syllabus	5.8	Categorizing Documents by Topics	T1,R1,R2	1	
	5.9	Determining Sentiments	T1,R1,R2	1	
	5.10	Decision Tree – ID3 Algorithm	T1,T2	1	
Total				11	
		<b>UNIT-VI Hadoop Ecosystem:</b>			
VI	CO-6	6.1	Using Query Languages	T3,R1,R2	1
		6.2	HIVE for data analytics	T3,R1,R2	1
		6.3	PIG for data analytics	T3,R1,R2	1
		6.4	HBASE	T3,R1,R2	1
		6.5	Mahout-machine learning algorithms	T3,R1,R2	1
		6.6	using Hadoop mapreduce HDFS	T3,R1,R2	1
Content beyond syllabus	6.7	Case Studeies : NoSQL Databases	W3,W4	2	
Total				8	
<b>CUMULATIVE PROPOSED PERIODS</b>				<b>61</b>	

**Text Books:**

S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION
1	Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data by EMC Education Services- Wiley
2	Hadoop: The Definitive Guide by Tom White, 3rd Edition, O'reilly
3	Hadoop in Action by Chuck Lam, MANNING Publ.
4	Hadoop for Dummies by Dirk deRoos, Paul C.Zikopoulos, Roman B.Melnyk, Bruce Brown, Rafael Coss

**Reference Books:**

S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION
1	Hadoop in Practice by Alex Holmes, MANNING Publ.
2	Big Data Analytics with R and Hadoop-VigneshPrajapati.

**Web Details:**

1	Piglatin: <a href="http://pig.apache.org/docs/r0.7.0/tutorial.html">http://pig.apache.org/docs/r0.7.0/tutorial.html</a>
2	Hadoop: <a href="http://hadoop.apache.org/">http://hadoop.apache.org/</a>
3	Hive: <a href="https://cwiki.apache.org/confluence/display/Hive/Home">https://cwiki.apache.org/confluence/display/Hive/Home</a>

	Name	Signature with Date
i.	Faculty	Dr. RVVSV Prasad
ii.	Module Coordinator	Dr. RVVSV Prasad
iii.	Programme Coordinator	Dr. RVVSV Prasad

Principal