



## LESSON PLAN

**Department: CSE**

**Course: – Advanced Operating Systems MTCS204**

**SEM: II**

**Program: M.Tech.**

**Academic Year: 2016-17**

**1. Pre-requisites:** Strong Foundation on OS Concepts

**2. Course Educational Objectives (CEOs):**

- This course provides a comprehensive introduction to understand the underlying principles, techniques and approaches which constitute a coherent body of knowledge in Distributed Operating Systems.

**3. Course Outcomes (COs):** At the end of the course, the student will be able to:

- CO1: Identify the various basic concepts related to Distributed Systems
- CO2: Examine the Naming Systems with respect to Distributed Systems
- CO3: Analyze different Synchronization techniques in Distributed Systems
- CO4: Compare the different replication techniques used in Distributed Systems
- CO5: Examine the various fault tolerance with respect to Distributed Systems

**4. Course Delivery Plan:**

S.NO	TOPIC TO BE COVERED	No.of Classes		Date	DM
		As per the	Taken		
<b>Unit-1 Processes</b>					
1	Introduction to Threads	1			1,2
2	Threads in Distributed Systems.	1			1,2
3	Threads in Distributed Systems.	1			1,2
4	Clients: User Interfaces,	1			1,2
5	Client-Side Software for Distributed Transactions	1			1,2
6	Client-Side Software for Distributed Transactions	1			1,2
7	Servers: General Design Issues,	1			1,2
8	Servers: General Design Issues,	1			1,2
9	Object servers	1			1,2

10	Object servers	1			1,2
11	CODE Migration: Approaches to code migration,	1			1,2
12	Migration and Local resources	1			1,2
13	Migration and Local resources	1			1,2
14	Migration in Heterogeneous systems. Example: D'Agents	1			1,2
15	Migration in Heterogeneous systems. Example: D'Agents	1			1,2
16	Software Agents: Software Agents in DS	1			1,2
17	Agent Technology	1			1,2
18	Agent Technology	1			1,2
19	Tutorial-1	1			3
20	Class Test-1	1			4
<b>Number of classes</b>		20			
<b>Unit-II Naming Systems</b>					
21	Naming Entities: Naming, Identifiers,	1			1,2
22	Addresses, Name Resolution	1			1,2
23	Implementation of Name space,	1			1,2
24	Example: DNS, X.500	1			1,2
25	Example: DNS, X.500	1			1,2
26	Locating Mobile Entities: Naming vs Locating Entities, Simple solutions,	1			1,2
27	Locating Mobile Entities: Naming vs Locating Entities, Simple solutions,	1			1,2
28	Home Based Approaches,	1			1,2
29	hierarchical Approaches	1			1,2
30	hierarchical Approaches	1			1,2
31	Removing Unreferenced Entities	1			1,2
32	Removing Unreferenced Entities	1			1,2

33	The Problem of Unreferenced objects,	1			1,2
34	Reference Counting	1			1,2
35	Reference Counting	1			1,2
36	Reference Listing,	1			1,2
37	Tutorial-2	1			3
38	Class Test-2	1			4
<b>Number of classes</b>		<b>18</b>			
<b>Unit -III Synchronization</b>					
39	Clock Synchronization,	1			1,2
40	Logical Clocks	1			1,2
41	Logical Clocks	1			1,2
42	Global State,	1			1,2
43	Election Algorithms	1			1,2
44	Election Algorithms	1			1,2
45	Mutual Exclusion,	1			1,2
46	Mutual Exclusion,	1			1,2
47	Distributed transactions.	1			1,2
48	Tutorial-3	1			3
49	Class Test-3	1			4
<b>Number of classes</b>		<b>11</b>			
<b>Unit - IV Consistency and Replication</b>					


50	Introduction,	1			1,2
51	Data Centric consistency models	1			1,2
52	Client Centric consistency models,	1			1,2
53	Distribution protocols	1			1,2
54	Consistency Protocols, Examples: Orca,	1			1,2
55	Casually Consistent Lazy Replication	1			1,2
56	Tutorial-4	1			3
57	Class Test-4	1			4
<b>Number of classes</b>		8			
<b>Unit – V Fault Tolerance</b>					
58	Fault Tolerance Introduction	1			1,2
59	Process Resilience,	1			1,2
60	Client Server Communication	1			1,2
61	Reliable group Communication	1			1,2
62	Distributed Commit,	1			1,2
63	Recovery	1			1,2
64	Tutorial-5	1			3
65	Class Test-5	1			4
<b>Number of classes</b>		8			
<b>Total Number of classes</b>		<b>65</b>			

**Delivery Methods (DM):**

1. Chalk & Talk
2. ICT Tools
3. Tutorial
4. Assignment/Test/Quiz
5. Laboratory/Field Visit
6. Web based learning.

	<b>Course Instructor</b>	<b>Course Coordinator</b>	<b>Module Coordinator</b>	<b>HOD</b>
Signature				
Name of the Faculty				

**PRINCIPAL**

	<b>LESSON PLAN</b>		<b>Date:</b> 05-01-17 <b>To</b> 09-05-17
	<b>Sub Name :</b> BIG DATA <b>Branch:</b> M.Tech(CSE)	<b>Semester: II</b>	

### MTCS201 – BIG DATA

<b>Lecture</b>	: 4 Periods/week	<b>Internal Marks</b>	: 40
<b>Tutorial</b>	: 1 Periods/week	<b>External Marks</b>	: 60
<b>Credits</b>	: 4	<b>External Examination</b>	: 3 Hrs

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#### UNIT - I

**INTRODUCTION:** OVERVIEW OF Big Data Characteristics, Cloud Vs Big Data, issues and challenges of Big Data, stages of analytical evolution, State of the Practice in Analytics, the Data Scientist, Big data Technological approaches and Potential use cases for Big Data. **Big Data Analytics-** Big data Analytics in Industry Verticals, Data Analytics Lifecycle, Discovery, Data preparation, Model Planning and building, communicating Results, Operational zing Unstructured Data Analytics – Test Analytics Essentials; Big Data Visualization Techniques; Advanced system Approaches for Analytics – In Database Analytics, In-memory Databases.

#### UNIT - II

**Technologies and Tools for Big Data Analytics:** Basic Data Analytics Methods using R, and spreadsheet- like analytics, Stream Computing, Machine learning with Mahout.

#### UNIT - III

**The Hadoop Ecosystem-**, advantages of Hadoop, Query languages for Hadoop, Hadoop Distributed file System, HDFS, Overview of HBase, Hive and PIG, MapReduce Framework and MapReduce Programming.

#### UNIT - IV

**NoSQL Databases-** Review of traditional Databases, Columnar Databases, Failover and reliability principles, working mechanisms of NoSQL Databases- HBase, Cassandra, Couch DB, Mango DB.

#### UNIT - V

**Challenges for Big Data :** Data models for managing big data, Real – time streaming data analytics, Scalable analytics on larger data sets, Systems architecture for big data management , Main memory data management techniques, energy- efficient data processing , Benchmarking big data systems, Security and Privacy of Big Data , Failover and reliability for big data systems, importance of Cloud in Big Data Analytics.

#### TEXT BOOK

1. Big Data Now: 2012 Edition by O'Reilly Media
2. Big Data: A Revolution That Will Transform How We Live, Work, and Think (Hardcover) by Viktor Mayer-Schönberger
3. Hadoop: The Definitive Guide (Paperback) by Tom White

#### REFERENCES

1. Map Reduce Design Patterns: Building Effective Algorithms and Analytics for Hadoop and Other Systems (Paperback) by Donald Miner.
2. Big Data Analytics: Turning Big Data into Big Money (English) By Frank J. Ohlhorst

**Course Objectives**

- To explore the fundamental concepts of big data analytics
- To learn to analyze the big data using intelligent techniques.
- To understand the various search methods and visualization techniques.
- To learn to use various techniques for mining data stream.
- To understand the applications using Map Reduce Concepts

**Course Outcomes**

At the end of this course the students will be able to:

- Work with big data platform and its analysis techniques.
- Analyze the big data for useful business applications.
- Select visualization techniques and tools to analyze big data
- Implement search methods and visualization techniques
- Design efficient algorithms for mining the data from large volumes.
- Explore the technologies associated with big data analytics such as NoSQL, Hadoop and Map-Reduce

Session No	Topics to be covered	Date	Teaching Method	Remarks
<b>UNIT-I</b>				
1	Overview Of Big Data Characteristics	05-01-17	BB	
2	Cloud Vs Big Data	06-01-17	BB	
3	Issues and challenges of Big Data	09-01-17	BB	
4	Stages of analytical evolution	12-01-17	BB	
5	State of the Practice in Analytics	19-01-17	BB	
6	The Data Scientist	20-01-17	BB	
7	Big data Technological approaches and Potential use cases for Big Data	23-01-17	BB	
8	Big data Analytics in Industry Verticals	23-01-17	BB	
9	Data Analytics Lifecycle	27-01-17	BB	
10	Discovery, Data preparation, Model Planning and building, communicating Results	30-01-17	BB	
11	Operational zing Unstructured Data Analytics	02-02-17	BB	
12	Test Analytics Essentials	03-02-17	BB/LCD	
13	Big Data Visualization Techniques	06-02-17	BB/LCD	
14	Advanced system Approaches for Analytics	09-02-17	BB/LCD	
15	In Database Analytics, In-memory Databases.	10-02-17	BB/LCD	
<b>UNIT-II</b>				
1	Basic Data Analytics Methods using R, and spreadsheet	13-02-17 16-02-17 17-02-17 20-02-17	BB/LCD	
2	Stream Computing	23-02-17 27-02-17	BB/LCD	

		07/4/2016 27-02-17 01-03-17 01-03-17		
3	Machine learning with Mahout	07-03-17 09-03-17 10-03-17 13-03-17 16-03-17	BB/LCD	
<b>UNIT-III</b>				
1	Advantages of Hadoop	20-03-17	BB/LCD	
2	Query languages for Hadoop	20-03-17	BB/LCD	
4	Hadoop Distributed file System	23-03-17	BB/LCD	
5	HDFS	24-03-17	BB/LCD	
6	Overview of HBase	27-03-17	BB/LCD	
7	Hive and PIG	27-03-17	BB/LCD	
8	MapReduce Framework	30-03-17	BB/LCD	
9	MapReduce Programming	31-03-17	BB/LCD	
<b>UNIT-IV</b>				
1	Review of traditional Databases	03-04-17	BB/LCD	
2	Columnar Databases	03-04-17	BB/LCD	
3	Failover and reliability principles	06-04-17	BB/LCD	
4	Working mechanisms of NoSQL Databases	07-04-17	BB/LCD	
5	HBase	10-04-17	BB/LCD	
6	Cassandra	10-04-17	BB/LCD	
7	Couch DB	13-04-17	BB/LCD	
8	Mango DB	17-04-17	BB/LCD	
<b>UNIT-V</b>				
1	Data models for managing big data	20-04-17	BB/LCD	
2	Real – time streaming data analytics	21-04-17	BB/LCD	
3	Scalable analytics on larger data sets	24-04-17	BB/LCD	
4	Systems architecture for big data management	27-04-17	BB/LCD	
5	Main memory data management techniques,	28-04-17	BB/LCD	
6	Energy- efficient data processing	01-05-17	BB/LCD	
7	Benchmarking big data systems, Security and Privacy of Big Data	04-05-17	BB/LCD	
8	Failover and reliability for big data systems	05-05-17	BB/LCD	
9	Importance of Cloud in Big Data Analytics	09-05-17	BB/LCD	

	<b>Prepared by</b>	<b>Approved by</b>
<b>Signature</b>		
<b>Name</b>	<b>G.V.Suresh</b>	<b>HOD/CSE</b>
<b>Designation</b>	<b>Associate Professor/CSE</b>	<b>Professor</b>
<b>Date</b>		



## COURSE HANDOUT

**PROGRAM** : M. Tech., II-Sem., CSE  
**ACADEMIC YEAR** : 2016-17  
**COURSE NAME & CODE** : COMPUTER VISION & MTCS202  
**L-T-P STRUCTURE** : 4-1-0  
**COURSE CREDITS** : 4  
**COURSE INSTRUCTOR** : Mr. Lella Kranthi Kumar.  
**COURSE COORDINATOR** : Dr. CH Venkata Narayana.  
**PRE-REQUISITE:** Knowledge on computer graphics, Digital Image Processing

### **COURSE OBJECTIVE:**

- 1 To introduce basic principles of digital image processing.
- 2 To provide knowledge on Image data structures
- 3 To demonstrate different image encoding techniques.
- 4 To explain segmentation and restoration techniques.

### **COURSE OUTCOMES (CO)**

- CO1: Summarize the fundamentals of digital image processing  
CO2: Apply image enhancement techniques in spatial domain  
CO3: Apply restoration and color image processing techniques to improve the fidelity of images.  
CO4: Analyze image compression, morphological image processing techniques for various applications.  
CO5: Evaluate the methodologies for image segmentation

### **COURSE ARTICULATION MATRIX (Correlation between COs&POs,PSOs):**

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	-	-	-	-	-	-	-	-	-	-	-	3	-	-
CO2	3	2	-	-	-	-	-	-	-	-	-	-	3	2	-
CO3	3	2	-	-	-	-	-	-	-	-	-	-	3	2	-
CO4	3	3	-	-	-	-	-	-	-	-	-	-	3	3	-
CO5	3	2	-	3	-	-	-	-	-	-	-	-	3	1	-

**Note:** Enter Correlation Levels **1** or **2** or **3**. If there is no correlation, put '-'  
**1-** Slight(Low), **2** - Moderate(Medium), **3** - Substantial (High).

### **BOS APPROVED TEXT BOOKS:**

**T1** Rafael C.Gonzalez, Richard E. Woods: "Digital Image Processing" Addison Wesley Pubs(Second Edition).

### **BOS APPROVED REFERENCE :**

**R1** Nptel videos on digital image processing and computer vision

**COURSE DELIVERY PLAN (LESSON PLAN):****UNIT-I : Introduction & Digital Image Fundamentals**

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	<b>Introduction:</b> Digital Image Processing	1	08/12/16		<b>TLM1</b>	CO1	T1	
2.	Introduction to Digital Image Processing	1	09/12/16		<b>TLM1</b>	CO1	T1	
3.	Fundamental steps in Digital Image Processing	1	10/12/16		<b>TLM1</b>	CO1	T1	
4.	Fundamental steps in Digital Image Processing	1	11/12/16		<b>TLM1</b>	CO1	T1	
5.	Components of an Image Processing system.	1	12/12/16		<b>TLM1</b>	CO1	T1	
6.	Components of an Image Processing system.		15/12/16		<b>TLM1,TLM2</b>	CO1	T1	
7.	<b>Digital Image Fundamentals</b>	1	16/12/16		<b>TLM1,TLM2</b>	CO1	T1	
8.	Visual Perception		17/12/16		<b>TLM1,TLM2</b>	CO1	T1	
9.	Visual Perception	1	18/12/16		<b>TLM1,TLM1</b>	CO1	T1	
10.	Image Sensing & Quantization	1	19/12/16		<b>TLM1,TLM2</b>	CO1	T1	
11.	Image Sensing & Quantization	1	22/12/16		<b>TLM1,TLM2</b>	CO1	T1	
12.	Image Sensing & Quantization	1	23/12/16		<b>TLM1,TLM2</b>	CO1	T1	
13.	Some Basic Relationship between Pixels.	1	24/12/16		<b>TLM1,TLM2</b>	CO1	T1	
14.	Some Basic Relationship between Pixels.	1	26/12/16		<b>TLM1,TLM2</b>	CO1	T1	
15.	<b>Tutorial-1</b>	1	30/12/16		<b>TLM3</b>	CO1	T1	
No. of classes required to complete UNIT-I		15			No. of classes taken:			

**UNIT-II : Image Enhancement in the Spatial Domain**

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
16.	<b>Image Enhancement in the Spatial Domain</b>	1	31/12/16		<b>TLM1</b>	CO2	T1	
17.	Some Basic Gray level	1	01/01/16		<b>TLM1</b>	CO2	T1	

	Transformations							
18.	Histogram Processing	1	02/01/17		TLM1,TLM2	CO2	T1	
19.	Histogram Processing	1	03/01/17		TLM1,TLM2	CO2	T1	
20.	Enhancement using Arithmetic/Logical Operations	1	06/01/17		TLM1,TLM2	CO2	T1	
21.	Enhancement using Arithmetic/Logical Operations	1	07/01/17		TLM1,TLM2	CO2	T1	
22.	Spatial filtering		16/01/17		TLM1,TLM2	CO2	T1	
23.	Spatial filtering	1	17/01/17		TLM1,TLM2	CO2	T1	
24.	Smoothing Spatial Filters	1	18/01/17		TLM1,TLM2	CO2	T1	
25.	Sharpening Spatial Filters	1	19/01/17		TLM1,TLM2	CO2	T1	
26.	Combining Spatial Enhancement methods	1	20/01/17		TLM1,TLM2		T1	
27.	Combining Spatial Enhancement methods	1	23/01/17		TLM1,TLM2		T1	
28.	<b>Tutorial - II</b>	1	24/01/17		<b>TLM3</b>		T1	
No. of classes required to complete UNIT-II		13			No. of classes taken:			

### UNIT-III: Image Enhancement in the Frequency Domain

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
29.	<b>Image Enhancement in the Frequency Domain</b>	1	25-01-17		<b>TLM1</b>	CO3	T1	
30.	Fourier Transform and the Frequency Domain	1	26-01-17		TLM1,TLM2	CO3	T1	
31.	Fourier Transform and the Frequency Domain	1	27-01-17		TLM1,TLM2	CO3	T1	
32.	Smoothing Frequency-Domain Filters	1	30-01-17		TLM1,TLM2	CO3	T1	
33.	Smoothing Frequency-Domain Filters	1	31-01-17		TLM1,TLM2	CO3	T1	
34.	Sharpening Frequency Domain Filters	1	01-02-17		TLM1,TLM2	CO3	T1	
35.	Sharpening Frequency Domain Filters	1	06-02-17		TLM1,TLM2	CO3	T1	
36.	Homomorphism filtering	1	07-02-17		TLM1,TLM2	CO3	T1	

37.	Homomorphism filtering	1	08-02-17		TLM1,TLM2	CO3	T1	
38.	Implementation	1	09-02-17		TLM1,TLM2	CO3	T1	
39.	TUTORIAL III	1	10-02-17		TLM3	CO3	T1	
No. of classes required to complete UNIT-III		11			No. of classes taken:			

#### UNIT-IV: Image Restoration&Wavelets and Multi-Resolution Processing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
40.	<b>Image Restoration</b>	1	13/02/17		TLM1	CO4	T1	
41.	Image Degradation/Restoration Process	1	14/02/17		TLM1,TLM2	CO4	T1	
42.	Image Degradation/Restoration Process	1	15/02/17		TLM1,TLM2	CO4	T1	
43.	Linear Degradations	1	16/02/17		TLM1,TLM2	CO4	T1	
44.	Position-Invariant Degradations	1	17/02/17		TLM1,TLM2	CO4	T1	
45.	Inverse filtering	1	20/02/17		TLM3	CO4	T1	
46.	Minimum Mean Square Error (Wiener) Filtering	1	21/02/17		TLM1,TLM2	CO4	T1	
47.	Constrained Least Squares Filtering	1	22/02/17		TLM1,TLM2	CO4	T1	
48.	Constrained Least Squares Filtering	1	23/02/17		TLM1,TLM2	CO4	T1	
49.	<b>Wavelets and Multi-Resolution Processing</b>	1	24/02/17		TLM1,TLM2	CO4	T1	
50.	Multi-Resolution Expansions	1	27/02/17		TLM1,TLM2	CO4	T1	
51.	Wavelet Transforms in One Dimension	1	28/02/17		TLM1,TLM2	CO4	T1	
52.	Wavelet Transforms in One Dimension	1	01/03/17		TLM1,TLM2	CO4	T1	
53.	The Fast Wavelet Transform	1	02/03/17		TLM1,TLM2	CO4	T1	
54.	Wavelet Transforms in Two Dimension	1	03/03/17		TLM1,TLM2	CO4	T1	
55.	Wavelet Transforms in Two Dimension	1	06/03/17		TLM1,TLM2	CO4	T1	
56.	<b>Tutorial - 4</b>	1	07/03/17		TLM3	CO4	T1	

No. of classes required to complete UNIT-IV	12			No. of classes taken:
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**UNIT-V: Image Compression&Image Segmentation**

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
57.	<b>Image Compression</b>	1	08/03/17		TLM1	CO5	T1	
58.	Image Compression Models	1	09/03/17		TLM1,TLM2	CO5	T1	
59.	Image Compression Models	1	10/03/17		TLM1,TLM2	CO5	T1	
60.	Error-Free Compression	1	13/03/17		TLM1,TLM2	CO5	T1	
61.	Lossy Compression	1	14/03/17		TLM1,TLM2	CO5	T1	
62.	Lossy Compression	1	15/03/17		TLM1,TLM2	CO5	T1	
63.	Image Compression Standards	1	16/03/17		TLM1,TLM2	CO5	T1	
64.	<b>Image Segmentation</b>	1	17/03/17		TLM1,TLM2	CO5	T1	
65.	Detection of Discontinuities	1	20/03/17		TLM1,TLM2	CO5	T1	
66.	Detection of Discontinuities	1	21/03/17		TLM1,TLM2	CO5	T1	
67.	Edge Linking and Boundary Detection	1	22/03/17		TLM1,TLM2	CO5	T1	
68.	Thresholding	1	23/03/17		TLM1,TLM2	CO5	T1	
69.	Region-Based Segmentation	1	24/03/17		TLM1,TLM2	CO5	T1	
70.	Region-Based Segmentation	1	27/03/17		TLM1,TLM2	CO5	T1	
71.	Region-Based Segmentation	1	28/03/17		TLM1,TLM2	CO5	T1	
72.	<b>Tutorial – 5</b>	1	29/03/17		TLM3	CO5	T1	
No. of classes required to complete UNIT-V	12			No. of classes taken:				

**Contents beyond the Syllabus**

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
73.	Computer graphics	1	30-03-17		TLM1			
74.	Digital Image Processing	1	31-03-17		TLM1			

**Teaching Learning Methods**

<b>TLM1</b>	Chalk and Talk	<b>TLM4</b>	Problem Solving	<b>TLM7</b>	Seminars or GD
<b>TLM2</b>	PPT	<b>TLM5</b>	Programming	<b>TLM8</b>	Lab Demo
<b>TLM3</b>	Tutorial	<b>TLM6</b>	Assignment or Quiz	<b>TLM9</b>	Case Study

**ACADEMIC CALENDAR:**

Description	From	To	Weeks
I Phase of Instructions-1	08-12-2016	07-01-2017	4 1/2W
Sankranthi Holidays	09-01-2016	14-01-2016	1W
I Phase of Instructions-II	16-01-2016	01-02-2016	5W
I Mid Examinations	02-02-2016	04-02-2016	1W
II Phase of Instructions	06-02-2016	08-04-2016	9W
II Mid Examinations	10-04-2016	12-04-2016	1W
Preparation and Practicals	13-04-2016	22-04-2016	1W
Semester End Examinations	24-04-2016	03-05-2016	2W

**EVALUATION PROCESS:**

Evaluation Task	COs	Marks
Assignment/Quiz – 1	1	A1=5
Assignment/Quiz – 2	2	A2=5
I-Mid Examination	1,2	B1=20
Assignment/Quiz – 3	3	A3=5
Assignment/Quiz – 4	4	A4=5
Assignment/Quiz – 5	5	A5=5
II-Mid Examination	3,4,5	B2=20
Evaluation of Assignment/Quiz Marks: $A=(A1+A2+A3+A4+A5)/5$	1,2,3,4,5	A=5
Evaluation of Mid Marks: $B=75\%$ of Max(B1,B2)+25% of Min(B1,B2)	1,2,3,4,5	B=20
<b>Cumulative Internal Examination : A+B</b>	<b>1,2,3,4,5</b>	<b>A+B=25</b>
<b>Semester End Examinations</b>	<b>1,2,3,4,5</b>	<b>C=75</b>
<b>Total Marks: A+B+C</b>	<b>1,2,3,4,5</b>	<b>100</b>

Course Instructor

Course Coordinator

Module Coordinator

HOD



## LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (Autonomous)

L.B.Reddy Nagar, Mylavaram-521 230. Andhra Pradesh, INDIA

Affiliated to JNTUK, Kakinada & Approved by AICTE New Delhi

NAAC Accredited with "A" grade, Accredited by NBA,

New Delhi & Certified by ISO 9001:2008, <http://www.lbrce.ac.in>

### DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

#### LESSON PLAN

Dt: 05-01-2017

Semester: I

A.Y: 2016-17

Name of the faculty: G.V.RAJYA LAKSHM

Course Title & Code: E-commerce & MTCS2063

SNo.	Tentative date	Topics to be covered	Actual date	Number of classes	Teaching Methodology
1	05-01-17	Unit – I: Introduction to E-commerce		1	DM1
2	06-01-17	Advantages of E-commerce		1	DM1
3 3	09-01-17	E-commerce frame work		1	DM 1
4	09-01-17	Elements in E-commerce frame work		1	DM8
5	12-01-17	Anatomy of E-commerce		1	DM1
6	19-01-17	Applications of e-commerce		1	DM1
7	20-01-17	Features and functions of E-commerce		1	DM1
8	23-01-17	E-commerce practices		1	DM1
9	23-01-17	Traditional commerceVs E-		1	DM1
10	27-01-17	Scope and limitations of E-		1	DM4
11	30-01-17	Case study on functions on e-commerce		1	DM6
12	30-01-17	Tutorial on Unit-1		1	DM1
13	02-02-17	Unit – II : Business model for E-		1	DM1
14	03-02-17	Business to Consumer, Business to		1	DM1
15	06-02-17	Consumer to consumer,consumer to		1	DM1
16	09-02-17	Meaning of inter organisational		1	DM1
17	10-02-17	Electronic Data Interchange		1	DM1
18	13-02-17	Implementation of EDI		1	DM1
19	13-02-17	Implementation of EDI		1	DM1

20	16-02-17	Definition of value added networks		1	DM1
21	17-02-17	Parameters in VAN		1	DM1
22	20-02-17	Intra organisational commerce		1	DM1
23	20-02-17	Work flow model of Intra oraganisational commerce		1	DM1
24	23-02-17	Automation and customization of internal commerce		1	DM8
25	27-02-17	Supply chain management		1	DM1
26	27-02-17	Tutorial on unit II		1	DM2
27	01-03-17 to 07-03-17	MID EXAMS – I			
28	09-03-17	Unit-III: Introduction to modes for E-commerce		1	DM1
29	10-03-17	EDI models		1	DM1
30	13-03-17	E-commerce with WWW/Internet		1	DM1
31	13-03-17	E-commerce with Internet		1	DM8
32	16-03-17	Commerce net advocacy		1	DM8
33	17-03-17	Web commerce structure		1	DM8
34	20-03-17	Approaches to safe commerce: STP protocol		1	DM1
35	20-03-17	Secure transaction using STP		1	DM1
36	23-03-17	Secure electronic payment protocol		1	DM1
37	24-03-17	Transaction of SET		1	DM6
38	27-03-17	Security authentication certificates		1	DM1
39	27-03-17	Security authentication certificates		1	DM1
40	30-03-17	Security on webserver		1	DM1
41	31-03-17	Enterprise network models		1	DM1
42	03-04-17	Tutorial on UNIT- III		1	DM2
43	03-04-17	Test on UNIT- III		1	DM4
44	06-04-17	Unit IV: Introduction to electronic		1	DM8
45	07-04-17	Digital token based system		1	DM8
46	10-04-17	Smart cards and credit cards design		1	DM8
47	10-04-17	Usage of magnetic cards		1	DM8
48	13-04-17	Risks in electronic payment system		1	DM1
49	17-04-17	Security in E-commerce, models		1	DM1
50	17-04-17	Internet security setup		1	DM1
51	20-04-17	Maintaining information with secure		1	DM1



52	21-04-17	Encryption methods in security		1	DM1
53	24-04-17	Digital signature methods in security		1	DM1
54	24-04-17	Other security measures		1	DM1
55	27-04-17	Tutorial on unit IV		1	DM1
56	28-04-17	Unit -V:Introduction to internet resources		1	DM1
57	01-05-17	Technologies for webservers		1	DM1
58	01-05-17	Internet tools relevant to E-commerce		1	DM8
59	04-05-17	Internet applications and charges		1	DM8
60	05-05-17	Searching and advertising methods		1	DM8
61	08-05-17	Creating and marketing web site		1	DM8
62	09-05-17	Various electronic publishing issues		1	DM8
63	10-05-17 to 16-05-17	MID EXAMS - II			

**NOTE: DELIVERY METHODS:** **DM1:** Lecture interspersed with discussions/BB, **DM2:** Tutorial, **DM3:** Lecture with a quiz, **DM4:** Assignment/Test, **DM5:** Demonstration ( laboratory, field visit ), **DM6:** Group Discussion, **DM7:** Group Assignment/ Project, **DM8:** Presentations/PPT, **DM9:**Asynchronous Discussion..

Signature		
	Name of the faculty	HOD
	G.V.Rajya Lakshmi	



# Lakireddy Balireddy College of Engineering College

L.B.Reddy Nagar, Mylavaram , Krishna District, A.P

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

## LESSON PLAN

Subject : **HADOOP LAB - MTCS251**

Academic Year :	<b>2016-17</b>	Semester :	<b>II</b>	Date:	<b>03.08.2016</b>
Year :	<b>II(2016-18)</b>	Section :	<b>-</b>	To:	<b>30.12.2016</b>

### MTCS251-HADOOP LAB

Lab : 3 Periods/week

Internal Marks : 25

Tutorial :

External Marks : 50

Credits : 2

External Examination : 3 Hrs

#### Pre-requisites:

- Students should have a good knowledge in Java ,Big Data

#### Course Educational Objectives (CEOs):

Introducing Java concepts required for developing map reduce programs

Imparting the architectural concepts of Hadoop and introducing map reduce paradigm

To introduce programming tools PIG & HIVE in Hadoop echo system

Preparing for data summarization, query, and analysis

#### Course Outcomes(COs):

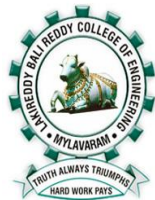
*By the completion of the course, the students are able to:*

**CO1:** Set up single and multi node Hadoop Clusters

**CO2:** Apply Map Reduce algorithms for various algorithms

**CO3:** Design new algorithms that uses Map Reduce to apply on Unstructured and structured data.

Session No	Program to be executed	Date	Remarks
1	<b>Week: 1</b> 1. Downloading and installing Hadoop 2. Understanding different Hadoop modes 3. Start up scripts 4. Configuration files		<b>Cycle-1</b>
2	<b>Week: 2</b> 1.Setting up Hadoop on a single node cluster Starting a Single node cluster Stopping a Single node cluster 2.Setting up Hadoop on a large node cluster Starting up a larger cluster Stopping the cluster		
3	<b>Week:3</b> • Standard word count example implemented in Java		
4	<b>Week4:</b> First we write a program to fetch titles from one or more web pages in java Using Hadoop Streaming.		
5	<b>Week 5:</b> Practice Importing and Exporting Data from Various DBs.		



## Lakireddy Balireddy College of Engineering College

L.B.Reddy Nagar, Mylavaram , Krishna District, A.P

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

### LESSON PLAN

Subject : **HADOOP LAB - MTCS251**

Academic Year :	<b>2016-17</b>	Semester :	<b>II</b>	<b>Date:03.08.2016</b> <b>To:30.12.2016</b>
Year :	<b>II(2016-18)</b>	Section :	<b>-</b>	

6	<b>Week 6:</b> Practice Big Data Analysis with Machine Learning <ul style="list-style-type: none"> <li>• Supervised machine-learning algorithms</li> <li>• Linear regression</li> <li>• Logistic regression</li> </ul>		<b>Cycle-2</b>
7	<b>Week 7:</b> Practice Big Data Analysis with Machine Learning <ul style="list-style-type: none"> <li>• Unsupervised machine learning algorithm</li> </ul>		
8	<b>Week 8:</b> Understanding Hive <ol style="list-style-type: none"> <li>1) Installing Hive</li> <li>2) Setting up Hive configurations</li> <li>3) Practice Hive with example</li> </ol>		
9	<b>Week 9:</b> <ol style="list-style-type: none"> <li>1) Installing HBase</li> <li>2) Installing thrift</li> <li>3) Practice HBase with example</li> </ol>		
10	<b>Week 10:</b> Practice data logistic regression with example		

S.No	Teaching Learning Process (TLP)	Delivery Methods (DM)	Assessment Methods (AM)
1	Solving Real world problem	Chalk & Talk	Assignments
2	Explaining application before theory	ICT tools	Quiz
3	Solving problems	Group discussions	Tutorials
4	Designing of experiments	Industrial visit	Surprise Tests
5	Problems on environmental, economics, health & safety	Field work	Mid Exams
6	Problems on professional & ethics	Case studies	Model Exam
7	Seminar	Mini Projects	QAs
8	Problems using software	Numerical treatment	
9	Self study	Design / Exercises	

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	G.V.Suresh			Dr. N. Ravi Shankar
Sign with Date				

# **LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING**

**(AUTONOMOUS)**

L.B Reddy Nagar , Mylavaram-521230

Department of Computer Science & Engineering

## **NETWORK SECURITY**

Lesson Plan

**Course : M.TECH II SEMESTER**

**Subject Code: MTCS2052**

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### **Course Educational Objectives**

- Various types of algorithms for Encryption & Decryption, Message Authentication, Digital Signature.
- Different ways to protect the data over a network using Email & IP security and during the financial transactions.
- Network security, virus, worms and firewall.

### **Course Outcomes:**

- Acquire knowledge in security services, mechanism and Encryption and decryption of messages using block ciphers.
- Sign and verify messages using well-known signature generation, verification & analyzing the existing authentication protocols for two party communications.
- Acquire the knowledge of providing Email security & IP security
- Acquire the knowledge of providing the security to data during the web transactions
- Knowledge of Prevention from Malware and restricting the unwanted data in a network using firewalls.

**Pre requisite:** Knowledge of Networks and basic mathematical foundation.

S.NO	Tentative Date	Topics to be covered	Actual Date	Num. of classes	Content Delivery Methods
<b>UNIT-1</b>					
1	05.01.2017	Introduction		1	DM1
2	06.01.2017	Introduction to Networks		1	DM1/DM6
3	09.01.2017	Introduction to Security		1	DM1/DM6
4	10.01.2017	Attacks & Threats		1	DM1/ DM6
5	23.01.2017	Active & Passive Attacks		1	DM1/ DM6
6	24.01.2017	Services		1	DM1/ DM6
7	27.01.2017	Model of Inter network security		1	DM2
8	30.01.2017	Principles of Symmetric encryption		1	DM1/DM6
9	31.01.2017	Principles of Asymmetric encryption		1	DM1/DM6
10	02.02.2017	Public and Private Keys		1	DM1/ DM6
11	03.02.2017	Steganography & One Time Pads			
12	06.02.2017	TUTORIAL -1		1	DM2
<b>UNIT-II</b>					
13	07.02.2017	Block Cipher & Stream Cipher		1	DM1
14	09.02.2017	Introduction to Block cipher algorithms		1	DM1
15	10.02.2017	RC2		1	DM1
16	13.02.2017	GOST		1	DM1/DM6
17	14.02.2017	CAST		1	DM1/DM6
18	16.02.2017	BLOW FISH		1	DM1/DM6
19	17.02.2017	SAFER		1	DM1/DM6
20	20.02.2017	RC5		1	DM1/DM6
21	21.02.2017	CRAB		1	DM1/DM6
22	23.02.2017	TUTORIAL - 3		1	DM1/DM6
23	24.02.2017	DES		1	DM1/DM6
24	27.02.2017	DES , NEW DES		1	DM1/DM6
25	28.02.2017	Theory of Block Cipher Design		1	DM1/DM6
<b>UNIT – III</b>					
26	09.03.2017	Key Lengths		1	DM1
27	10.03.2017	Generating Keys		1	DM1
28	13.03.2017	Transferring ,Verification		1	DM1
29	14.03.2017	Updating		1	DM2
30	16.03.2017	Storing , Backup		1	DM1
31	17.03.2017	TUTORIAL – 4		1	DM1
32	20.03.2017	Lifetime , Destroying Keys		1	DM1
33	21.03.2017	Key Exchange Protocols		1	DM1
34	23.03.2017	Secure Multiparty Communication		1	DM1
35	24.03.2017	Public Key Management		1	DM1
36	27.03.2017	Authentication		1	DM1
37	28.03.2017	Digital Signature, DSA		1	DM1
38	30.03.2017	One Schnorr Shamir DS		1	DM2
39	31.03.2017	Esign		1	DM2

UNIT – IV					
40	03.04.2017	IP Security Architecture		1	DM1
41	04.04.2017	Authentication Header		1	DM1
42	06.04.2017	Encapsulating Security Payload		1	DM1
43	07.04.2017	Encapsulating Security Payload		1	DM1
44	10.04.2017	Key Management Issues		1	DM1
45	11.04.2017	Key Management Issues		1	DM2
46	13.04.2017	Web Security, Web Security Requirements		1	DM1
47	14.04.2017	TUTORIAL – 6		1	DM1/DM6
48	17.04.2017	Secure Socket Layer		1	DM1/DM6
49	18.04.2017	Secure Socket Layer		1	DM1/DM6
50	20.04.2017	Transport Layer Security		1	DM1/DM6
51	21.04.2017	Secure Electronic Transaction		1	DM1/DM6
52	24.04.2017	Secure Electronic Transaction		1	DM1/DM6
UNIT – V					
53	25.04.2017	PGP		1	DM1/DM6
54	27.04.2017	SNMP		1	DM1/DM6
55	28.04.2017	SMIME		1	DM1/DM6
56	01.05.2017	TUTORIAL – 7		1	DM1
57	02.05.2017	Intruders		1	DM1
58	04.05.2017	Viruses		1	DM1
59	05.05.2017	Related Threats		1	DM1
60	08.05.2017	Firewalls		1	DM1
61	09.05.2017	Firewalls Design Principles		1	DM1
<b>TOTAL</b>					
Total number of classes required to complete the syllabus				61	
Total number of classes available as per Schedule				61	

**NOTE: DELIVERY METHODS :**DM1: Lecture interspersed with discussions/BB, **DM2:** Tutorial, **DM3:** Lecture with a quiz, **DM4:** Assignment/Test, **DM5:** Demonstration ( laboratory, field visit ), **DM6:** Presentations/PPT

At the End of the course, students attained the **Course Outcomes:CO1,CO2,CO3,CO4,CO5**& sample proofs are enclosed in Course file.

<b>Signature</b>			
	<b>Name of the Faculty</b> K SUNDEEP SARADHI	<b>Name of Course Co-ordinator</b>	<b>HOD</b> Dr. B.VIJAYA BABU



**LESSON PLAN**

**Course Code & Course Name:** Soft Computing

**SEM:** II

**Programme:** M.Tech

**Course Code & Course Name:** Data Mining

**SEM:** I

**Programme:** M.Tech

**Department:** CSE

S No.	Tentative Date	Topics to be covered	Actual Date	Content Delivery Methods
<b>UNIT-I</b>				
1	08/12/16	<b>Introduction to soft computing</b>		<b>DM1,DM8</b>
2	09/12/16	<b>Uncertainty</b>		<b>DM1</b>
3	10/12/16	<b>Shafer dumpster theory</b>		<b>DM1</b>
4	11/12/16	<b>Random sets and mass assignments</b>		<b>DM1</b>
5	12/12/16	<b>Random sets and mass assignments</b>		<b>DM1</b>
6	15/12/16	<b>Random sets and mass assignments</b>		<b>DM1</b>
7	16/12/16	<b>Dumpster rule</b>		<b>DM1</b>
8	17/12/16	<b>Fuzzy measures</b>		<b>DM1</b>
9	18/12/16	<b>Tutorial-1</b>		<b>DM1</b>
10	19/12/16	<b>Aggregation operations</b>		<b>DM1</b>
11	22/12/16	<b>Bayesian networks</b>		<b>DM1</b>
12	23/12/16	<b>Bayesian networks</b>		<b>DM1</b>
13	24/12/16	<b>Bayesian networks</b>		<b>DM1</b>
14	26/12/16	<b>Graphical networks</b>		<b>DM1</b>
15	30/12/16	<b>Graphical networks</b>		<b>DM1</b>
16	31/12/16	<b>Graphical networks</b>		<b>DM1</b>
17	01/01/16	<b>Graphical networks</b>		<b>DM1</b>
18	02/01/17	<b>Tutorial-2</b>		<b>DM2</b>
<b>UNIT-II</b>				
				03/01/17
19	06/01/17	<b>Automated learning</b>		<b>DM1,DM8</b>
20	07/01/17	<b>Supervised learning</b>		<b>DM1</b>
21	16/01/17	<b>Unsupervised learning</b>		<b>DM1</b>
22	17/01/17	<b>Decision tree induction</b>		<b>DM1</b>
23	18/01/17	<b>Decision tree induction</b>		<b>DM1</b>
24	19/01/17	<b>Decision tree induction</b>		<b>DM1</b>
25	20/01/17	<b>Decision tree induction</b>		<b>DM1</b>



## LESSON PLAN

**Course Code & Course Name:** Soft Computing

**SEM:** II

**Programme:** M.Tech

**Course Code & Course Name:** Data Mining  
**Programme:** M.Tech

**SEM:** I

**Department:** CSE

26	23/01/17	Rule induction Algorithms		DM2
27	24/01/17	Tutorial-3		DM1
28	25-01-17	Rule induction Algorithms		DM1
29	26-01-17	Bayesian learning algorithms		DM1
30	27-01-17	Bayesian learning algorithms		DM1
31	30-01-17	Evolutionary algorithms		DM1
32	31-01-17	Evolutionary algorithms		DM 1
33	01-02-17	Tutorial-4		DM2
<b>UNIT-III</b>				
06-02-17				
34	07-02-17	Neural networks		DM1,DM8
35	08-02-17	Adaptive networks		DM1
36	09-02-17	Supervised NN		DM1
37	10-02-17	Reinforcement learning		DM1
38	13/02/17	Unsupervised learning		DM1
39	14/02/17	Fuzzy set theory		DM1
40	15/02/17	Fuzzy set theory		DM1
41	16/02/17	Fuzzy set theory		DM2
42	17/02/17	Fuzzy control		DM1
43	Fuzzy control	Fuzzy control		DM 1
44	21/02/17	Fuzzy secession tree		DM 1
45	22/02/17	Fuzzy secession tree		DM 1
46	23/02/17	Tutorial		DM 2
<b>UNIT-IV</b>				
24/02/17				
47	27/02/17	Hybred systems		DM 1,DM8
48	28/02/17	Neuro fuzzy systems		DM 1
49	01/03/17	Neuro fuzzy systems		DM 1
50	02/03/17	Back propagation networks supported by fuzzy		DM 1
51	03/03/17	Back propagation networks supported by fuzzy		DM 1
52	06/03/17	Back propagation networks supported by fuzzy		DM 1
53	07/03/17	GA based eight determination systems		DM 1
54	08/03/17	GA based eight determination systems		DM 1





**LESSON PLAN**

**Course Code & Course Name:** Soft Computing

**SEM:** II

**Programme:** M.Tech

**Course Code & Course Name:** Data Mining

**SEM:** I

**Programme:** M.Tech

**Department:** CSE

55

09/03/17

**Tutorial**

**DM 2**

**UNIT-V**

10/03/17

56	13/03/17	Genetic algorithms		<b>DM 1,DM8</b>
57	14/03/17	Genetic algorithms		<b>DM 1</b>
58	15/03/17	encoding		<b>DM 1</b>
59	16/03/17	Fitness function		<b>DM 1</b>
60	17/03/17	reproduction		<b>DM 1</b>
61	20/03/17	Fuzzy genetic algorithms		<b>DM 1</b>
62	21/03/17	Fuzzy genetic algorithms		<b>DM 1</b>
63	22/03/17	Fuzzy genetic algorithms		<b>DM 1</b>
64	23/03/17	Practicle examples from areas of medical		<b>DM 1</b>
65	24/03/17	management		<b>DM 1</b>
66	27/03/17	Control in fuzzy logic control design		<b>DM 1</b>
67	28/03/17	Control in fuzzy logic control design		<b>DM 1</b>
68	29/03/17	<b>Tutorial</b>		<b>DM 2</b>
69	30-03-17	<b>Rivision &amp; Previous papers discusion</b>		<b>DM 3 &amp; DM 4</b>

**NOTE: DELIVERY METHODS :** DM1: Lecture interspersed with discussions/BB, DM2: Tutorial, DM3: Lecture with a quiz, DM4: Assignment/Test, DM5: Demonstration ( laboratory, field visit ), DM6: Group Discussion, DM7: Group Assignment/ Project, DM8: Presentations/PPT, DM9:Asynchronous Discussion..

<b>Signature</b>			
	<b>Name of the Faculty</b>	<b>Name of Course Co-ordinator</b>	<b>HOD</b>
	N V NAIK		Dr.N.Ravi Sankar