J.B. INSTITUTE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

COURSE PLAN

2013-14
Regulation: R11

		ACADEMIC YEAR	2013-14

FACULTY DETAILS:

     Name of the Faculty:: M.Ravi
      Designation: Asst. Professor
      Department:: IT

COURSE DETAILS

    Name Of The Programme::   Batch:: 2011-2015
       Designation::
   Year   Semester III-II
      Department:: IT
    Title of The Subject DWDM   Subject Code 6756055
     No of Students 84

	COURSE PLAN	2013-14
		Regulation: R11

FACULTY DETAILS:

Name of the Faculty::   M. Ravi

Designation: Asst. Professor

Department::   IT

1. TARGET

     a) Percentage Pass: 100

     b) Percentage I class: 90

2. COURSE PLAN

(Please write how you intend to cover the contents: i.e., coverage of Units by lectures, guest lectures, design exercises, solving numerical problems, demonstration of models, model preparation, or by assignments, etc.)

3. METHOD OF EVALUATION

     3.1. ☐ Continuous Assessment Examinations (CAE 1, CAE 2)

     3.2. ☐ Assignments / Seminars

     3.3. ☐ Mini Projects

     3.4. ☐ Quiz

     3.5. ☐ Term End Examination

     3.6. ☐ Others

4. List out any new topic(s) or any innovation you would like to introduce in teaching the subject in this Semester.

Signature of HOD   Signature of Faculty

Date: Date:

		2013-14
	GUIDELINES TO STUDY THE SUBJECT	Regulation: R11

FACULTY DETAILS:

Name of the Faculty::   M. Ravi

Designation: Asst. Professor

Department::   IT

Guidelines for Preparing the Course:

Course Description:

This course is designed to expand students' knowledge and skills gained in database management courses and look in depth at data warehousing and data mining methods. The course examines the database architecture and technologies required for solving complex problems of data and information management, information retrieval, and knowledge discovery facing modern organizations. Case studies of organizations using these technologies to support business intelligence gathering and decision making are examined. This course also provides hands-on experience with state-of-the-art data warehousing and data mining methods and tools.

Course Objectives:

1. To introduce students to the basic concepts and techniques of Data Mining
2. To develop skills of using recent data mining software for solving practical problems.
3. To gain experience of doing independent study and research.
4. To study the methodology of engineering legacy databases for data warehousing and data mining to derive business rules for decision support systems
5. Develop and apply critical thinking, problem-solving, and decision-making skills.
6. Develop and apply enthusiasm for learning. Class participation is encouraged in this course. Enriching
7. classroom discussions and learning by communicating interest, suggestions for improvements, additional readings and Internet resources, is a major goal. Express diligence, enthusiasm, patience, and thoroughness in dealing with complicated analysis and procedures and less-than-perfect-constantly evolving technology.

Learning Outcomes:

1.Understand data mining principles and techniques: Introduce DM as a cutting edge business intelligence method and acquaint the students with the DM techniques for building competitive advantage through proactive analysis, predictive modelling, and identifying new trends and behaviours. Learning objectives include:

2. Building basic terminology.

3. Learning how to gather and analyze large sets of data to gain useful business understanding.

4. Learning how to produce a quantitative analysis report/memo with the necessary information to make decisions.

5. Describing and demonstrating basic data mining algorithms, methods, and tools

6. Identifying business applications of data mining

7. Overview of the developing areas - web mining, text mining, and ethical aspects of data mining.

FACULTY DETAILS:

        Name of the Faculty::   M. Ravi
        Designation: Asst. Professor
        Department::   IT

On completion of this Subject / Course the student shall be able to:

S.No.	Objectives	Outcomes
1.	To understand and implement classical models and algorithms in data warehousing and data mining	4
2.	To analyze the data, identify the problems, and choose the relevant models and algorithms to apply.	6
3.	To compare and contrast different conceptions of data mining	8
4.	To characterize the kinds of patterns that can be discovered by association rule mining, classification and clustering	6

Signature of Faculty
Date:

Note: For each of the OBJECTIVE indicate the appropriate OUTCOMES to be achieved.
Kindly refer Page 16, to know the illustrative verbs that can be used to state the objectives.

	COURSE OUTCOMES	2013-14
		Regulation: R11

FACULTY DETAILS:

Name of the Faculty:: M. Ravi
Designation: Asst. Professor
Department:: IT

The expected outcomes of the Course / Subject are:DWDM

S.No.	General Categories of Outcomes	Specific Outcomes of the Course
A.	An ability to apply knowledge of mathematics, science, and engineering	
B.	An ability to design and conduct experiments, as well as to analyze and interpret data	
C.	An ability to design a system, component, or process to meet desired needs within realistic Constraints such as economic, environmental, social, political, ethical, health and safety, Manufacturability and sustainability	
D.	An ability to function on multi-disciplinary teams	
E.	An ability to identify, formulate, and solve engineering problems	
F.	An understanding of professional and ethical responsibility	
G.	An ability to communicate effectively	
H.	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	
I.	A recognition of the need for, and an ability to engage in life-long learning	
J.	A knowledge of contemporary issues	
K.	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	

Objectives – Outcome Relationship Matrix (Indicate the relationships by ☒ mark).

Objectives \ Outcomes	A	B	C	D	E	F	G	H	I	J	K
1.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

		2013-14
	COURSE SCHEDULE	**Regulation: R11**

FACULTY DETAILS:

Name of the Faculty::   M. Ravi
Designation: Asst. Professor
Department::   IT
The Schedule for the whole Course / Subject is::   DWDM

S. No.	Description	Duration (Date)		Total No. of Periods
		From	To	
1.	**Introduction**: Fundamentals of data mining, Data mining Functionalities, Classification of Data Mining Systems, **Data Mining Task Primitives,** Integration of data mining system with a database or data warehouse system, Major issues in Data Mining. **Data Preprocessing**: Needs Preprocessing the data, Data cleaning, Data integration and Transformation, Data Reduction, Discretization and Concept Hierarchy Generation**.**	9/12/13	27/12/13	15
2.	Data Warehouse and OLAP Technology for Data Mining and Data Warehouse, Multidimensional Data Model, Data Warehouse Architecture, Data Ware house Implementation, Further Development of Data Cube Technology, From Data Ware housing to Data Mining	30/12/13	20/01/14	11
3.	Mining Frequent patterns, Associations and Correlations: Basic concepts, Efficient and scalable frequent item set mining methods, Mining various kinds of association rules, from association mining to correlation analysis, Constraint-Based association mining	21/01/14	24/01/14	05
4.	**Classification and Prediction**: Issues regarding Classification and Prediction, Classification by Decision	25/01/14	3/2/14	08

	Tree Induction, Bayesian Classification, Rule based classification, Classification by Back propagation, Support vector machines, Associative classification, Lazy learners, Other classification methods, Prediction, Accuracy and Error measures, Evaluating the accuracy of a classifier or a Predictor, Ensemble methods			
5.	**Cluster Analysis Introduction**: Types of data in Cluster Analysis, A Categorization of Major Clustering Methods, Partitioning Methods, Density-Based Methods, Grid-Based Methods, Model-Based Methods, clustering high dimensional data, Constraint-Based cluster analysis, Outlier Analysis.	4/2/14	19/2/14	09
6.	Mining Streams, Time Series and Sequence data: Mining data streams, Mining Time series data, Mining Sequence patterns in Transactional databases, Mining sequence patterns in Biological data, Graph mining, social network analysis and multirelational data mining.	20/2/14	7/3/14	07
7	**Mining Objects, Spatial, Multimedia, Text and Web Data:** Multidimensional Analysis and Descriptive Mining of Complex, Data Objects, Mining Spatial Data mining, Mining Multimedia Data, Mining Text Data, Mining the world Wide Web			08
8	Applications and Trends in Data Mining: Data Mining applications, Data Mining system products and Research Prototype, additional Themes on data mining and social impacts of data mining.			05

Total No. of Instructional periods available for thcourse:66   Hours / Periods

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<table>
<tr><td colspan="2"></td><td rowspan="2">SCHEDULE OF INSTRUCTIONS

UNIT - I</td><td>2013-14</td></tr>
<tr><td colspan="2"></td><td>Regulation: R11</td></tr>
</table>

FACULTY DETAILS:

Name of the Faculty::   M. Ravi
Designation: Asst. Professor
Department::   IT
The Schedule for the whole Course / Subject is::   DWDM

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.		References (Text Book, Journal…) Page No___ to ___
1	9/12/13	1	Introduction to Data Mining	2	4	T1 1-4
2	9/12/13	2	Fundamentals of Data Mining, KDD process	3	5	T1 5-28
3	10/12/13	1	Classification of Data Mining System	4	3	T1 29-30
4	11/12/13	2	**Data Mining Task Primitives,** Integration of data mining system with a database or data warehouse system,	5	4	T1 31-36
5	13/12/13	2	Major issues in Data Mining.	1	5	T1 36-38
6	14/12/13	1	**Data Preprocessing**: Needs Preprocessing the data,	2	6	T1 47-60
7	16/12/13	1	Data cleaning,	1	7	T1 61-67
8	20/12/13	2	Data integration and Transformation	3	2	T1 67-72
9	24/12/13	1	Data Reduction	5	9	T1 72-86
10	27/12/13	2	Discretization and Concept Hierarchy Generation**.**	4	10	T1 86-96

Signature of Faculty
Date

	SCHEDULE OF INSTRUCTIONS UNIT - II	2013-14
		Regulation: R11

FACULTY DETAILS:

Name of the Faculty:: M. Ravi
Designation: Asst. Professor
Department:: IT
The Schedule for the whole Course / Subject is:: DWDM

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.		References (Text Book, Journal…) Page No___ to ___
1	30/12/13	3	Data Warehouse and OLAP Technology for Data Mining Data Warehouse	3	5	T1 105-110
2	2/1/14	2	Multidimensional Data Model	2	6	T1 110-127
3	6/1/14	3	Data Warehouse implementation, Data Warehouse Architecture	3	6	T1 127-145
4	9/1/14	2	Further Development of data cube technology	5	6	T1 157-198
5	20/01/14	1	From data warehousing to data mining	2	6	T1 146-150

Signature of Faculty
Date

	SCHEDULE OF INSTRUCTIONS	2013-14
	UNIT - III	Regulation: R11

FACULTY DETAILS:

Name of the Faculty::   M. Ravi
Designation: Asst. Professor
Department::   IT
The Schedule for the whole Course / Subject is::   DWDM

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.		References (Text Book, Journal…) Page No___ to ___
1	21/1/14	1	Mining Frequent patterns, Mining	4	7	T1 227-234
2	22/1/14	1	Associations and Correlations: Basic concepts,	3	5	T1
3	23/1/14	2	Efficient and scalable frequent item set mining methods, various kinds of association rules,	2	5	T1 234-240
4	24/1/14	2	from association mining to correlation analysis, Constraint-Based association mining	3	6	T1 240-272

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
     2.   ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

<table>
<tr><td rowspan="2"></td><td colspan="2" align="center">SCHEDULE OF INSTRUCTIONS</td><td align="center">2013-14</td></tr>
<tr><td colspan="2" align="center">UNIT - IV</td><td align="center">Regulation: R11</td></tr>
</table>

FACULTY DETAILS:

Name of the Faculty::   M. Ravi
Designation: Asst. Professor
Department::   IT
The Schedule for the whole Course / Subject is::   DWDM

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.		References (Text Book, Journal…) Page No___ to ___
1	25/1/14	1	**Classification and Prediction**: Issues regarding Classification and Prediction, , Other classification methods, ,	4	5	T1 285-290
2	27/1/14	1	Classification by Decision Tree Induction,	3	5	T1 291-310
3	28/1/14	2	Bayesian Classification, Rule based classification,	2	6	T1
4	29/1/14	2	Support vector machines, Associative classification,	5	6	T1
5	30/1/14	1	Classification by Back propagation, Lazy learners	2	4	T1
6	1/2/14	1	Prediction, Accuracy and Error measures	3	4	T1
7	3/2/14	1	Evaluating the accuracy of a classifier or a Predictor, Ensemble methods	2	5	T1

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
    2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

<table>
<tr><td colspan="2"></td><td>SCHEDULE OF INSTRUCTIONS

UNIT - V</td><td>2013-14

Regulation: R11</td></tr>
</table>

FACULTY DETAILS:

Name of the Faculty::	M. Ravi
Designation:	Asst. Professor
Department::	IT
The Schedule for the whole Course / Subject is::	DWDM

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.		References (Text Book, Journal...) Page No___ to ___
1	4/2/14	1	**Cluster Analysis Introduction**: Types of data in Cluster Analysis, -	2	3	T1
2	5/2/14	1	A Categorization of Major Clustering Methods	4	5	T1
3	6/2/14	2	Partitioning Methods, Density-Based Methods,	5	4	T1
4	7/2/14	1	Grid-Based Methods,	3	2	T1
5	10/2/14	1	, Model-Based Methods,	5	4	T1
6	11/2/14	1	Clustering high dimensional data,	2	3	T1
7	17/2/14	1	Constraint Based cluster analysis,	3	5	T1
8	19/2/14	1	Outlier Analysis.	1	2	T1

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.

 2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.

MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

	SCHEDULE OF INSTRUCTIONS	2013-14
	UNIT - VI	Regulation: R11

FACULTY DETAILS:

Name of the Faculty::   M. Ravi
Designation: Asst. Professor
Department::   IT
The Schedule for the whole Course / Subject is::   DWDM

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.		References (Text Book, Journal…) Page No___ to ___
1	20/2/14	1	Mining Streams,	1	3	T1
2	24/2/14	1	Time Series and Sequence data: Mining data streams,	2	4	T1
3	26/2/14	1	Mining Time series data, Mining Sequence patterns in Transactional databases	3	5	T1
4	7/3/14	1	Mining sequence patterns in Biological data,.	4	6	T1
5		1	Graph mining,	1	3	T1
6		1	social network analysis and multirelational data mining	2	4	T1

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
     2.   ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

	SCHEDULE OF INSTRUCTIONS	2013-14
	UNIT - VII	Regulation: R11

FACULTY DETAILS:

Name of the Faculty::   M. Ravi
Designation: Asst. Professor
Department::   IT
The Schedule for the whole Course / Subject is::   DWDM2

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.		References (Text Book, Journal…) Page No___ to ___
1		2	**Mining Objects, Spatial, Multimedia,**	3	4	T1
2		1	**Text and Web Data:** Multidimensional Analysis and	2	5	T1
3		1	Descriptive Mining of Complex,	1	8	T1
4		1	Data Objects, Mining Spatial Data mining,	2	6	T1
5		1	Mining Multimedia Data, Mining Text Data, Mining the world Wide Web	4	8	T1

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2.   ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

SCHEDULE OF INSTRUCTIONS UNIT - VIII	2013-14
	Regulation: R11

FACULTY DETAILS:

Name of the Faculty::   M. Ravi
Designation: Asst. Professor
Department::   IT

The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.		References (Text Book, Journal…) Page No___ to ___
1		1	Applications and Trends in Data Mining: Data Mining applications,	2	4	T1
2		1	Data Mining system products and Research Prototype,	2	5	T1
3		1	additional Themes on data mining and	2	6	T1
4		1	social impacts of data mining.	2	5	T1

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
    2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

	COURSE COMPLETION STATUS	2013-14
		Regulation: R11

FACULTY DETAILS:

Name of the Faculty::   M. Ravi

Subject::   Asst. Professor   Subject Code: 6756055

Department::   IT

Actual Date of Completion & Remarks, if any

Units	Remarks	Nos. of Objectives Achieved
Unit 1		10
Unit 2		8
Unit 3		6
Unit 4		8
Unit 5		9
Unit 6		6
Unit 7		5
Unit 8		4

Signature of Dean of School   **Signature of Faculty**

Date: **Date:**

NOTE: AFTER THE COMPLETION OF EACH UNIT MENTION THE NUMBER OF OBJECTIVES ACHIEVED.

		2013-14
	TUTORIAL SHEETS - I	
		Regulation: R11

FACULTY DETAILS:

Name of the Faculty::   M. Ravi
Designation: Asst. Professor
Department::   IT
The Schedule for the whole Course / Subject is::   DWDM

Date:11/2/13

This Tutorial corresponds to Unit Nos.1, 2, 3&4   Time:2:40

Q1. What is Data Mining? Explain the steps in Knowledge Discovery?

Q2. Explain in detail about the data mining functionalities.

Q3. With a neat sketch explain the architecture of a data warehouse

Q4. Explain the apriori algorithm with an example for finding frequent item sets.

Q5. Explain with an example the various steps in Decision tree induction.

Please write the Questions / Problems / Exercises which you would like to give to the students and also mention the objectives to which these questions / Problems are related.

Signature of Dean of School   **Signature of Faculty**
Date: **Date:**

	TUTORIAL SHEETS - II	2013-14
	TUTORIAL SHEETS - II	Regulation: R11

FACULTY DETAILS:

Name of the Faculty::   M. Ravi
Designation: Asst. Professor
Department::   IT
The Schedule for the whole Course / Subject is::   DWDM

Date:

This Tutorial corresponds to Unit Nos.5,6,7&8   Time:

Q1.

Q2.

Q3.

Q4.

Q5.

Please write the Questions / Problems / Exercises which you would like to give to the students and also mention the objectives to which these questions / Problems are related.

Signature of Dean of School   **Signature of Faculty**
Date: **Date:**

These verbs can also be used while framing questions for Continuous Assessment Examinations as well as for End – Semester (final) Examinations.

ILLUSTRATIVE VERBS FOR STATING **GENERAL OBJECTIVES**

Know	Understand	Analyze	Generate
Comprehend	Apply	Design	Evaluate

ILLUSTRATIVE VERBS FOR STATING **SPECIFIC OBJECTIVES:**

A. Cognitive Domain

1	2	3	4	5	6
Knowledge	**Comprehension Understanding**	**Application** of knowledge & comprehension	**Analysis** of whole w.r.t. its constituents	**Synthesis** combination of ideas/constituents	**Evaluation** judgement
Define	Convert	Change	Breakdown	Categorize	Appraise
Identify	Defend	Compute	Differentiate	Combine	Compare
Label	Describe (a	Demonstrate	Discriminate	Compile	Conclude
List	procedure)	Deduce	Distinguish	Compose	Contrast
Match	Distinguish	Manipulate	Separate	Create	Criticize
Reproduce	Estimate	Modify	Subdivide	Devise	Justify
Select	Explain why/how	Predict		Design	Interpret
State	Extend	Prepare		Generate	Support
	Generalize	Relate		Organize	
	Give examples	Show		Plan	
	Illustrate	Solve		Rearrange	
	Infer			Reconstruct	
	Summarize			Reorganize	
				Revise	

B. Affective Domain		**C. Psychomotor Domain (skill development)**				
Adhere	Resolve	Bend	Dissect	Insert	Perform	Straighten
Assist	Select	Calibrate	Draw	Keep	Prepare	Strengthen
Attend	Serve	Compress	Extend	Elongate	Remove	Time
Change	Share	Conduct	Feed	Limit	Replace	Transfer
Develop		Connect	File	Manipulate	Report	Type
Help		Convert	Grow	Move preciselyReset		Weigh
Influence		Decrease	Handle	Operate	Run	
Initiate		Demonstrate	Increase	Paint	Set	

	LESSON PLAN Unit-1	2013-14
		Regulation: R11

Name of the Faculty: M. Ravi

Subject   DWDM   Subject Code   6756055

Unit   I

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	Introduction to Data Mining	50min	T1,RB1	Black board
2,3	Fundamentals of Data Mining, KDD process	100min	T1,RB1	Black board
4	Classification of Data Mining System	50min	T1,RB1	Black board
5,6	**Data Mining Task Primitives,** Integration of data mining system with a database or data warehouse system,	100min	T1,RB1	Black board
7,8	Major issues in Data Mining.	100min	T1,RB1	Black board
9	**Data Preprocessing**: Needs Preprocessing the data,	50min	T1,RB1	Black board
10	Data cleaning,	50min	T1,RB1	Black board
11,12	Data integration and Transformation	100min	T1,RB1	Black board
13	Data Reduction	50min	T1,RB1	Black board
14,15	Discretization and Concept Hierarchy Generation**.**	100min	T1,RB1	Black board

On completion of this lesson the student shall be able to(Outcomes)

1. Learn the concepts of database technology evolutionary path which has led to the need for data mining and its applications

2. Examine the types of the data to be mined and present a general classification of tasks and primitives to integrate a data mining system

3. Apply preprocessing statistical methods for any given raw data

	ASSIGNMENT **Unit-I**	2013-14
		Regulation: R11

Assignment / Questions

1.What are the steps involved in KDD process?

2. What is the purpose of Data mining Technique

3.List the different coupling schemes used in a data mining system

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.

Name of the Faculty: M. Ravi

Subject DWDM

Unit II

Subject Code 6756055

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
18	Data Warehouse and OLAP Technology for Data Mining Data Warehouse	150min	T1,RB1	Black board
20	Multidimensional Data Model	100min	T1,RB1	Black board
23	Data Warehouse implementation, Data Warehouse Architecture	150min	T1,RB1	Black board
25	Further Development of data cube technology	100min	T1,RB1	Black board
26	From data warehousing to data mining	50min	T1,RB1	Black board

On completion of this lesson the student shall be able to

1. Explore DWH and OLAP , and devise efficient & cost effective methods for maintaining DWHs.

	ASSIGNMENT Unit-II	2013-14
		Regulation: R11

Assignment / Questions

1.Draw and explain the architecture of typical data mining system.

2. List out the differences between OLTP and OLAP.

3. Explain the design and construction of a data warehouse.

4. Explain the three-tier data warehouse architecture

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.

<table>
<tr><td rowspan="2"></td><td rowspan="2">LESSON PLAN
Unit-III</td><td>2013-14</td></tr>
<tr><td>Regulation: R11</td></tr>
</table>

Name of the Faculty: M. Ravi

Subject   DWDM   Subject Code   6756055

Unit   III

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
27	Mining Frequent patterns, Mining	50min	T1,RB1	Black board
28	Associations and Correlations: Basic concepts,	50min	T1,RB1	Black board
30	Efficient and scalable frequent item set mining methods, various kinds of association rules,	100min	T1,RB1	Black board
32	from association mining to correlation analysis, Constraint-Based association mining	100min	T1,RB1	Black board

On completion of this lesson the student shall be able to(Outcomes)

1. Discover interesting patterns from large amounts of data to analyze and extract patterns to solve problems , make predictions of outcomes.
2. Comprehend the roles that data mining plays in various fields and manipulate different data mining techniques
3. Select and apply proper data mining algorithms to build analytical applications.

![logo]	**ASSIGNMENT** **Unit-III**	2013-14
		Regulation: R11

Assignment / Questions

1.Compare and Contrast the differences between mining multilevel association rules from transaction databases and relational databases.

2. What is meant by constraint-based association mining? Explain in brief.

3. How are association rules mined from large databases? Explain

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.

<table>
<tr><td colspan="2" rowspan="2"></td><td rowspan="2">LESSON PLAN
Unit-IV</td><td>2013-14</td></tr>
<tr><td>Regulation: R11</td></tr>
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Name of the Faculty: M. Ravi

Subject   DWDM

Unit   **IV**

Subject Code   6756055

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
33	**Classification and Prediction**: Issues regarding Classification and Prediction, , Other classification methods, ,	50min	T1,RB1	Black board
34	Classification by Decision Tree Induction,	50min	T1,RB1	Black board
36	Bayesian Classification, Rule based classification,	100min	T1,RB1	Black board
38	Support vector machines, Associative classification,	100min	T1,RB1	Black board
39	Classification by Back propagation, Lazy learners	50min	T1,RB1	Black board
40	Prediction, Accuracy and Error measures	50min	T1,RB1	Black board
41	Evaluating the accuracy of a classifier or a Predictor, Ensemble methods	50min	T1,RB1	Black board

On completion of this lesson the student shall be able to (Outcomes)

1. classification and regression trees, the C4.5 algorithm, logistic Regression, k-nearest neighbor, multiple regression, and neural networks
2. Evaluate systematically supervised and unsupervised models and algorithms w.r.t their accuracy.
3. Develop practical work of DM techniques and design hypotheses based on the analysis to conceptualize a DM solution to a practical problem.

	ASSIGNMENT Unit-IV	2013-14
		Regulation: R11

Assignment / Questions

1. What are the issues regarding classification and prediction

2. How scalable is decision tree induction? Explain

3. Discuss the various measures available to judge a classifier.

4. Give a note on naive Bayesian classifier

5. Explain the classification method by back propagation

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Note: Mention for each question the relevant objectives and outcomes.

Name of the Faculty: M. Ravi

Subject DWDM
Unit **V**

Subject Code 6756055

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
42	**Cluster Analysis Introduction**: Types of data in Cluster Analysis, -	50min	T1,RB1	Black board
43	A Categorization of Major Clustering Methods	50min	T1,RB1	Black board
45	Partitioning Methods, Density-Based Methods,	100min	T1,RB1	Black board
46	Grid-Based Methods,	50min	T1,RB1	Black board
47	, Model-Based Methods,	50min	T1,RB1	Black board
48	Clustering high dimensional data,	50min	T1,RB1	Black board
49	Constraint Based cluster analysis,	50min	T1,RB1	Black board
50	Outlier Analysis.	50min	T1,RB1	Black board

On completion of this lesson the student shall be able to (Outcomes)

1. Understand and apply a wide range of clustering, estimation, prediction, and classification algorithms, including k-means clustering, BIRCH clustering
2. Define the following terms: divisive; agglomeratiave, monthetic, polythetic, distance.
3. Explain the difference between a hierarchical and a non-hierarchical classification.
4. Choose an appropriate distance measure.
5. Decide if data should be standardised before measuring distance.
6. Explain the differences between cluster algorithms beased on averages, distances, similarity and variance.
7. Intrepret the relationships between cases from a dendrogram.
8. Judge the quality of a classification.
9. Select alternative clustering solutions that are likely to improve the usefulness of an analysis.

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Assignment / Questions

1. What is meant by cluster analysis? Describe the major clustering methods.

2. Explain competitive learning and self organizing feature maps methods to clustering.

3. Discuss in detail BIRCH algorithm.

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Note: Mention for each question the relevant objectives and outcomes.

	LESSON PLAN Unit-VI	2013-14
		Regulation: R11

Name of the Faculty: M. Ravi

Subject   DWDM   Subject Code   6756055

Unit   VI

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
51	Mining Streams,	**50min**	**T1,RB1**	Black board
52	Time Series and Sequence data: Mining data streams,	**50min**	**T1,RB1**	Black board
53	Mining Time series data, Mining Sequence patterns in Transactional databases	**50min**	**T1,RB1**	Black board
54	Mining sequence patterns in Biological data,.	**50min**	**T1,RB1**	Black board
55	Graph mining,	**50min**	**T1,RB1**	Black board
56	social network analysis and multirelational data mining	**50min**	**T1,RB1**	Black board

On completion of this lesson the student shall be able to (Outcomes)

1. plan an investigation
2. be able to display time series data
3. discuss the components and features of time series distributions
4. compare features of different time series distributions
5. report the results of a statistical investigation concisely and coherently

	ASSIGNMENT Unit-VI	2013-14
		Regulation: R11

Assignment / Questions

1. Define The following:

  a. Time series

  b. Sequence data

  2. a. Explain the sequence patterns in Transactional database

    b. Explain the sequence patterns in Biological databases

3. Differentiates the following:

  a. Graph mining

  b. Social network analysis

  c. Multirelational data mining

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Note: Mention for each question the relevant objectives and outcomes.

	LESSON PLAN Unit-VII	2013-14
		Regulation: R11

Name of the Faculty: M. Ravi

Subject   DWDM   Subject Code   6756055

Unit   VII

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
58	**Mining Objects, Spatial, Multimedia,**	100min	RB1,T1	Black board
59	**Text and Web Data:** Multidimensional Analysis and	50min	RB1,T1	Black board
60	Descriptive Mining of Complex,	50min	RB1,T1	Black board
61	Data Objects, Mining Spatial Data mining,	50min	RB1,T1	Black board
62	Mining Multimedia Data, Mining Text Data, Mining the world Wide Web	50min	RB1,T1	Black board

On completion of this lesson the student shall be able to

1. Knowing the principles and requirements underlying spatial data and the management of such data in different application domains (e.g., geography, biology, cosmology) •
2. Knowing the concepts and applications related to geographic information systems
3. Be able to apply concepts and techniques for modeling spatial data
4. Be familiar with the management and querying spatial data using a spatial database management system (e.g., PostGIS)
5. Knowing fundamental methods of computational geometry
6. Knowing important index structures for spatial data such as the grid-file, kd-tree, Quad-tree, and R-tree.
7. Be familiar with multimedia data types and the conversion between analogue and digital forms.
8. Have gained experience in the use of multimedia systems and the ability to manipulate multimedia data programmatically.
9. Have gained an understanding of the issues that arise when multimedia communication is attempted across the Internet.
10. Understand the issues that arise when designing and building multimedia systems.

	ASSIGNMENT Unit-VII	2013-14
		Regulation: R11

Assignment / Questions

1. Write short notes on the following:
   a. Spatial data

   b. Multimedia data

   c. Text data

   d: WWW

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Note: Mention for each question the relevant objectives and outcomes.

Name of the Faculty: M. Ravi

Subject   DWDM   Subject Code   6756055   Web Technolog

Unit   VIII

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
63	Applications and Trends in Data Mining: Data Mining applications,	**50min**	**RB1,T1**	Black board
65	Data Mining system products and Research Prototype,	**100min**	**RB1,T1**	Black board
66	additional Themes on data mining and	**50min**	**RB1,T1**	Black board
67	social impacts of data mining.	**50min**	**RB1,T1**	Black board

On completion of this lesson the student shall be able to

1. Understand and apply the most current data mining techniques and applications, such as text mining, mining genomics data, and other current issues

2. Understand and apply the most current data mining techniques and trends for future

	ASSIGNMENT Unit-VIII	2013-14
		Regulation: R11

Assignment / Questions

1. What are the applications in data mining? Eplain with example

2. Discuss various ways to estimate the trend

3. Explain the additional themes and social impacts on data mining.

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Note: Mention for each question the relevant objectives and outcomes.