**BHARATHIAR UNIVERSITY, COIMBATORE.**
**M. Sc. INFORMATION TECHNOLOGY DEGREE COURSE**
*(Affiliated Colleges* - Effective from the academic Year 2010-2011)
SCHEME OF EXAMINATIONS – CBCS PATTERN

| Sem | Study Components | Course title | Ins. hrs/ week | Examinations | | | | Credit |
|---|---|---|---|---|---|---|---|---|
| | | | | Dur. | CIA | Marks | Total Marks | |
| | **Semester I** | | | | | | | |
| I | Paper I Object Oriented Analysis and Design | | 4 | 3 | 25 | 75 | 100 | 4 |
| | Paper II Advanced Computer Architecture | | 5 | 3 | 25 | 75 | 100 | 4 |
| | Paper III Advanced Java Programming | | 5 | 3 | 25 | 75 | 100 | 4 |
| | Paper IV Data Mining & Warehousing | | 4 | 3 | 25 | 75 | 100 | 4 |
| | Paper V Information Coding Techniques | | 4 | 3 | 25 | 75 | 100 | 4 |
| | Practical I Advanced Java Lab | | 5 | 3 | 40 | 60 | 100 | 4 |
| | Paper VI Introduction to Open Source Tools | | 3 | 3 | 25 | 75 | 100 | 4 |
| | | | | | | | | |
| II | Paper VII Programming in C# and .NET Framework | | 5 | 3 | 25 | 75 | 100 | 4 |
| | Paper VIII Web Services | | 5 | 3 | 25 | 75 | 100 | 4 |
| | Paper IX Network Security and Management | | 5 | 3 | 25 | 75 | 100 | 4 |
| | Elective I | | 6 | 3 | 25 | 75 | 100 | 4 |
| | Practical II C# & .Net Programming Lab | | 6 | 3 | 40 | 60 | 100 | 4 |
| | Paper X Web Designing | | 3 | 3 | 25 | 75 | 100 | 4 |
| III | Paper XI Digital Image Processing | | 5 | 3 | 25 | 75 | 100 | 4 |
| | Paper XII Component Based Systems | | 5 | 3 | 25 | 75 | 100 | 4 |
| | Paper XIII Distributed Computing | | 5 | 3 | 25 | 75 | 100 | 4 |
| | Elective II | | 5 | 3 | 25 | 75 | 100 | 4 |
| | Practical III Computing Tools and Web Programming Lab | | 4 | 3 | 40 | 60 | 100 | 4 |
| | Paper XIV Advanced Programming in Open Source - PHP | | 3 | 3 | 25 | 75 | 100 | 4 |
| | Practical IV Web Application in PHP Programming-lab | | 3 | 3 | 40 | 60 | 100 | 4 |
| IV | Project work and Viva voce | | - | - | - | - | 250* | 10 |
| | | Total | | | | | 2250 | 90 |

* Project report - 200 marks; Viva-voce – 50 marks

ELECTIVE I
1.1 Embedded Systems
1,2 WAP
1.2 ERP

ELECTIVE II
2.1 Artificial Intelligence
2.2 Software Project Management
2.3 E-Commerce

Note :

1. The Syllabus for the above papers (**except Paper IV - Data Mining & Warehousing, Paper VIII – Web Services & Paper X Web Designing**) be the same as prescribed for the academic year 2007-08 and the corrections made during 2008-09.
2. The syllabus for the Paper IV - Data Mining & Warehousing, Paper VIII –Web Services & Paper X Web Designing are furnished below :

## Paper IV : DATA MINING AND WAREHOUSING

Subject Description

This course presents the Introduction to Mining tasks, classification, clustering and Data Warehousing.

Goals

To enable the students to learn the Data mining tasks& Data warehousing techniques.

Objectives

On Successful completion of the course the students should have:

- Understood the Association rules, Clustering techniques and Data warehousing.

Contents

UNIT I

Basic data mining tasks – data mining versus knowledge discovery in databases – data mining issues – data mining metrics – social implications of data mining – data mining from a database perspective.

Data mining techniques: Introduction – a statistical perspective on data mining – similarity measures – decision trees – neural networks – genetic algorithms.

UNIT II

Classification: Introduction – Statistical – based algorithms - distance – based algorithms – decision tree - based algorithms - neural network – based algorithms –rule - based algorithms – combining techniques.

UNIT III

Clustering: Introduction – Similarity and Distance Measures – Outliers – Hierarchical Algorithms - Partitional Algorithms.

Association rules: Introduction - large item sets - basic algorithms – parallel & distributed algorithms – comparing approaches- incremental rules – advanced association rules techniques – measuring the quality of rules.

UNIT IV

Data warehousing: an introduction - characteristics of a data warehouse – data marts – other aspects of data mart. Online analytical processing: introduction - OLTP & OLAP systems – data modelling –star schema for multidimensional view –data modelling – multifact star schema or snow flake schema – OLAP TOOLS – State of the market – OLAP TOOLS and the internet.

UNIT V

Developing a data WAREHOUSE: why and how to build a data warehouse –data warehouse architectural strategies and organization issues - design consideration – data content – metadata distribution of data – tools for data warehousing – performance considerations – crucial decisions in designing a data warehouse.

Applications of data warehousing and data mining in government: Introduction - national data warehouses – other areas for data warehousing and data mining.

REFERENCE BOOKS

1. Margaret H. Dunham, "Data mining introductory and advanced topics", Pearson education, 2003.
2. C.S.R. Prabhu, "Data warehousing concepts, techniques, products and a applications", PHI, Second Edition.
3. Arun K.Pujari, " Techniques", Universities Press (India) Pvt. Ltd., 2003.
4. Alex Berson, Stephen J. Smith, "data warehousing, data mining, & OLAP, TMCH, 2001.
5. Jiawei Han & Micheline Kamber, " Data mining Concepts & Techniques", 2001, Academic press

## PAPER VIII : WEB SERVICES

**Subject Description:**

This course presents an Overview of Distributed Computing, XML, web services

**Goals:**

To enable the student to be familiar with distributed services, XML and web services

**Objectives:**

On successful completion of the course the student should have:

- Understood the concepts of web services

**Contents:**

**Unit - I**

Introduction to web services – Overview of Distributed Computing- Evolution and importance of web services-Industry standards, Technologies and concepts underlying web services-Web services and enterprises-web services standards organization-web services platforms.

**Unit - II**

XML Fundamentals – XML documents - XML Namespaces- XML Schema –Processing XML

**Unit - III**

SOAP: The SOAP model- SOAP messages-SOAP encoding- WSDL: WSDL structure-interface-definitions-bindings-services-Using SOAP and WSDL-UDDI: About UDDI- UDDI registry-Specification- Core data structures-Accessing UDDI

**Unit - IV**

Advanced web services technologies and standards: Conversations overview-web services conversation language-WSCL interface components.
Workflow: business process management-workflows and workflow management systems
Security: Basics-data handling and forwarding-data storage-errors-Web services security issues.

**Unit - V**

Quality of Service: Importance of QoS for web services-QoS metrics-holes-design patterns-QoS enabled web services-QoS enabled applications.
Web services management-web services standards and future trends.

***Reference Books:***

1. Sandeep Chatterjee, James Webber, 'Developing Enterprise Web Services : An Architects Guide', Prentice Hall, Nov 2003.

## PAPER X : Web DESIGNING

**Number of Instruction Hours: 3**

**Subject Description**

This Course presents the basics of Web designing.

**Goals:**

To enable the students to learn the Programming Languages for Web designing

**Objectives:**

On successful completion of the course the students should have:

□ □ □ Understood the fundamentals of Web design and how to program using ASP and XML.

**Contents**

**UNIT I:**

Basics of Web Technology: Web page creation- Scripting Language - HTML Tags – VBScript- JavaScript- Looping -Array handling -Functions and Procedures - Object creation - Validating Form Elements**.**

**UNIT II:**

ASP: Active Server Pages- Server Side Scripting- Servers: IIS, PWS _ ASP Objects – Request- Response- Session- Server- Application objects- globel.asa file - Cookies - External & Internal cookies.

**UNIT III:**

ASP Components - Ad Rotator- Context Rotator- Browser Capability- Page counter - Server objects- Database connectivity - DSN -Retrieving information from table – Manipulating records in tables. Implementation of ASP concepts in .NET environment.

**UNIT IV:**

XML: XML essentials - XML Documents - Valid Documents- Entities and attributes - Cascade Style Sheets - XML Scheme - Handling XML Documents and Data Binding.

**UNIT V:**

XML DOM - XSL Transformations - XSL Formatting Objects - XML and ASP- XML and Servlets - XML and Perl- WML

**REFERENCE BOOKS:**

1. Steven Holzner – "Inside XML ", 2000 Edition, Techmedia Publishers.
2. "Unleashed ASP"- Techmedia Publisher.
3. "Interactive VBScript" – Techmedia Publishers.