PERIYAR UNIVERSITY
SALEM 638 011

PERIYAR INSTITUTE OF DISTANCE EDUCATIONS
(PRIDE)

NON – SEMESTER
M.Sc. DEGREE

INFORMATION TECHNOLOGY

REGULATIONS AND SYLLABUS

(Effective from the Academic Year 2008 – 2009 and thereafter)

PERIYAR UNIVERSITY, SALEM – 11
M.Sc. INFORMATION TECHNOLOGY

Regulations
Effective from the Academic year 2008 – 2009 and thereafter

1. OBJECTIVE OF THE COURSE

To Develop Post Graduates in the Information Technology with Particular emphasis as a Specialist in that area. So as to be Employed in the Industry, Research and Development Unit and Academic Institutions without any Further Training.

2. CONDITION FOR ADMISSION

A candidate who has passed any degree of this University or any of the degree of any other University accepted by the syndicate as equivalent thereto subject to such conditions as may be prescribed therefore shall be
permitted to appear and qualify for the M.Sc Information Technology degree examination of this University after a course of study of two academic years.

3. DURATION OF THE COURSE

The course for the degree of Master of Science in Information Technology shall consist of two Academic years divided into two years.

4. COURSE OF STUDY

The Course of Study shall comprise instruction in the following subjects according to the syllabus and books prescribed from time to time.
<table>
<thead>
<tr>
<th>S.No</th>
<th>Title of the Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Year</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Fundamentals of Information Technology</td>
</tr>
<tr>
<td>2.</td>
<td>C and Data Structures</td>
</tr>
<tr>
<td>3.</td>
<td>Object Oriented Programming in C++</td>
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<tr>
<td>4.</td>
<td>Operating Systems</td>
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<tr>
<td>5.</td>
<td>Visual Programming</td>
</tr>
<tr>
<td>6.</td>
<td>Database Management Systems</td>
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<tr>
<td>7.</td>
<td>Software Engineering</td>
</tr>
<tr>
<td>8.</td>
<td>Computer Oriented Statistical and Numerical Methods</td>
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<tr>
<td>9.</td>
<td>Practical I - MS Office and C Lab</td>
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<tr>
<td>10.</td>
<td>Practical II – C++ and Java Lab</td>
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<tr>
<td>11.</td>
<td>Practical III – RDBMS and VB Lab</td>
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<tr>
<td><strong>Second year</strong></td>
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<tr>
<td>12.</td>
<td>Distributed Systems</td>
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<tr>
<td>13.</td>
<td>Computer Networks</td>
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<tr>
<td>14.</td>
<td>Internet and Web Programming</td>
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<tr>
<td>15.</td>
<td>Elective I</td>
</tr>
<tr>
<td>16.</td>
<td>Elective II</td>
</tr>
<tr>
<td>17.</td>
<td>Practical IV – Internet and Web Programming Lab</td>
</tr>
</tbody>
</table>
18. Project

**Elective 1:**
E.1.1 Computer Graphics
E.1.2 Data Mining
E.1.3 Wireless Application Protocol

**Elective 2:**
E.2.1 E-Commerce
E.2.2 Object Oriented Analysis and Design
E.2.3 Client/Server Computing.

5. **EXAMINATIONS**

The examination shall be three hours duration to each paper at the end of the Year. The candidate failing in any subject(s) will be permitted to appear for each failed subject(s) in the subsequent examination. Practical Examination should be conducted at the end of each year. At the end of Second year viva-voce will be conducted on the basis of the Dissertation submitted by the student. It should be an individual project. The viva-voce will be conducted by one internal and one external examiner jointly.

6. **SCHEME OF EXAMINATIONS**

The Scheme of Examinations shall be as follows:

<table>
<thead>
<tr>
<th>S.No</th>
<th>Paper Code</th>
<th>Title of the Paper</th>
<th>Duration</th>
<th>Marks</th>
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<tbody>
<tr>
<td><strong>FIRST YEAR</strong></td>
<td></td>
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</tr>
<tr>
<td>1.</td>
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<td>Fundamentals of Information Technology</td>
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<td>2.</td>
<td></td>
<td>C and Data Structures</td>
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<td>3.</td>
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<td>Object Oriented Programming in C++</td>
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<td>Operating Systems</td>
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<td>100</td>
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<td>5.</td>
<td></td>
<td>Visual Programming</td>
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</tr>
<tr>
<td>Course</td>
<td>Credits</td>
<td>Hours</td>
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<tr>
<td>6. Database Management Systems</td>
<td>3</td>
<td>100</td>
<td></td>
<td></td>
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<tr>
<td>7. Software Engineering</td>
<td>3</td>
<td>100</td>
<td></td>
<td></td>
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<tr>
<td>8. Computer Oriented Statistical and Numerical Methods</td>
<td>3</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Practical – I MS Office and C Lab</td>
<td>3</td>
<td>100</td>
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</tr>
<tr>
<td>10. Practical - II C++ and Java Lab</td>
<td>3</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Practical – III RDBMS and VB Lab</td>
<td>3</td>
<td>100</td>
<td></td>
<td></td>
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</table>

**SECOND YEAR**

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>12. Distributed Systems</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>13. Computer Networks</td>
<td>3</td>
<td>100</td>
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<tr>
<td>14. Internet and Web Programming</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>15. Elective – I</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>16. Elective – II</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>17. Practical –IV Internet and Web Programming Lab</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>18. Project</td>
<td></td>
<td>200</td>
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<tr>
<td><strong>Total</strong></td>
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<td>1900</td>
</tr>
</tbody>
</table>

**Elective 1:**

E.1.1 Computer Graphics
E.1.2 Data Mining
E.1.3 Wireless Application Protocol

**Elective 2:**

E.2.1 E-Commerce
E.2.2 Object Oriented Analysis and Design

E.2.3 Client/Server Computing
7. QUESTION PAPER PATTERN

a. For Theory

Time: 3 Hours

Max.Marks: 100
Passing Min: 50

PART – A: 5X5 = 25

(Answer all Questions)

(Two Questions from each unit with Internal Choice)

PART –B: 5X15 = 75

(Answer all Questions)

(Two Questions from each unit with Internal Choice)

b. For Practical

Time: 3 Hours

Max.Marks: 100
Passing Min: 50

One/Two Compulsory Problem(s) to be solved within 3 hours.
c. Distribution of the marks

(i) Practical

- For Writing procedures/Programs in the main answer book 40%
- For listing and debugging 40%
- For Correct and formatted output 20%

(ii) Dissertation

a. Report evaluation 150 marks
b. Viva-Voce 50 marks

8. REGULATIONS FOR DISSERTION

a. Students should do their Project work in Company/Institutions.

b. The candidate should submit the filled in format as given in Annexure – I to the centre for approval during the 1st Week of January in their Project year.

c. Each internal guide shall have maximum of eight Students.

d. Periodically the project should be reviewed minimum three times by the internal guide.

e. The students should prepare three copies of the dissertation and submit the same to the centre on 30th April for the evaluation by examiners. After evaluation one copy is to be retained in the centre
library and one copy is to be submitted to the University (Co-ordinator-Pride) and the student can hold one copy.

f. A Sample format of the dissertation is enclosed in Annexure – II.

g. Format of the Title Page and Certificate are enclosed in Annexure – III.

h. The Students should use OHP/Power Point Presentation during their Viva Voce Examinations.

9. PASSING MINIMUM

The candidate shall be declared to have passed the examination if the candidate secures not less than 50% marks in the University examination in each paper/practical. However submission of a record notebook is a must.

For the project work and viva-voce a candidate should secure 50% of the marks for pass. The candidate should compulsorily attend viva-voce examination to secure pass in that paper.

Candidate who do not obtain the required minimum marks for a pass in a Paper/Project shall be required to appear and pass the same at a subsequent appearance.

10. CLASSIFICATION OF SUCCESSFUL CANDIDATES
Candidates who secure not less than 60% of the aggregate marks in the whole examination shall be declared to have passed the examination in **First Class**. All other successful candidates shall be declared to have passed in **Second Class**. Candidates who obtain 75% of the marks in the aggregate shall be deemed to have passed the examination in **First Class with Distinction** provided they pass all the examinations prescribed for the course at the first appearance.

**11. MAXIMUM DURATION FOR THE COMPLETION OF THE PG PROGRAMME**

The maximum duration for completion of the PG Programme shall not exceed four academic year from the year of admission.

**12. COMMENCEMENT OF THIS REGULATION**

These regulations shall take effect from the academic year 2007 – 2008, i.e., for students who are to be admitted to the first year of the course during the academic year 2007 – 2008 and thereafter.
Name of the Centre : 
Course : 
Student Name : 
Register Number : 
Title of the Dissertation : 
Address of Organization/Institution : 
Name of the External Guide : 
Designation : 
Place: 
Date: 
Signature of External Guide (with Seal)

Name of the Internal Guide : 
Qualification : 
Teaching Experience : 
Place: 
Date: 
Signature of Internal Guide 
Co-Ordinator

(Approved or not Approved) 
[University Use]
## SYNOPSIS

1. **INTRODUCTION**
   1.1 ORGANIZATION PROFILE

2. **SYSTEM CONFIGURATION**
   1.2.1 HARDWARE CONFIGURATION
   1.2.2 SOFTWARE CONFIGURATION

3. **SYSTEM STUDY**
   2.1 EXISTING SYSTEM
       2.1.1 DEMERITS
   2.2 PROPOSED SYSTEM
       2.2.1 SYSTEM STUDY
       2.2.2 FEATURES

4. **SYSTEM DESIGN AND DEVELOPMENT**
   3.1 INPUT DESIGN/FORM DESIGN
   3.2 OUTPUT DESIGN/REPORT
   3.3 CODE DESIGN
   3.4 DATABASE DESIGN
   3.5 SYSTEM DEVELOPMENT

5. **TESTING AND IMPLEMENTATION**
CONCLUSION

BIBLIOGRAPHY

A. DATA FLOW DIAGRAMS
B. TABLE STRUCTURES
C. SAMPLE INPUT/FORMS
D. SAMPLE OUTPUTS/REPORTS

*Based on the Dissertation work, the above titles may be varied.

ANNEXURE III

A. Format of the title page

TITLE OF THE DISSERTATION

A Dissertation submitted in partial fulfillment of the requirements for the degree of Master of Science in Information Technology to the Periyar University, Salem –11.

By

STUDENT NAME
REG.NO.
CENTRE NAME
PERIYAR INSTITUTE OF DISTANCE EDUCATION (PRIDE)
PLACE with Pin Code
MONTH - YEAR
B. Format of the Bonafide Certificate

Name of the Internal Guide

Designation

Department Name

College Address

CERTIFICATE

This is to certify that the dissertation entitled __________________________ submitted in partial fulfillment of the requirement for the degree of Master of Science in __________________________ to the PRIDE, Periyar University, Salem is a record of bonafide work carried out by __________________________ under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree or diploma.

Date:

Place:

Signature of the guide

Signature of the Co-Ordinator

15
1. FUNDAMENTALS OF INFORMATION TECHNOLOGY

UNIT I:


UNIT II:


UNIT III:


UNIT IV:

UNIT V:


Text Book:


Reference Books:

2. C AND DATA STRUCTURES

UNIT I:

UNIT II:

UNIT III:

UNIT IV:
Linked list operations – Polynomial addition – circular lists – Doubly linked list – operation on doubly linked list – sparse matrix.

UNIT V:

Text Books:

Reference Books:

3. OBJECT ORIENTED PROGRAMMING IN C++

UNIT I:
Basic Concepts of OOP – Structure of C++ - Data types – Variables – Control Structures – Functions – Classes and Objects – Constructors and Destructors.

UNIT II:

UNIT III:

UNIT IV:
Introduction to Java – Features of Java – Methods and Classes – Array, Strings and Vector – Inheritance – Packages and Interfaces.

UNIT V:

**Text Books:**


**Reference Books:**

4. OPERATING SYSTEMS

UNIT I:


UNIT II:


UNIT III:


UNIT IV:
UNIT V:


Text Book:


Reference Books:

5. VISUAL PROGRAMMING

UNIT I:

UNIT II:
Introduction to Visual Basic – Variables, constants, strings – Data Types – Tools and Techniques.

UNIT III:
Organizing information via code – Arrays – Organizing information via Controls – Control Arrays – List and Combo Boxes – Flex Grid Control – Building Large Projects – Navigating Among Forms.

UNIT IV:

UNIT V:
6. DATABASE MANAGEMENT SYSTEMS

UNIT I:

Introduction: Purpose of database systems, data abstraction, data models, instances and schemes – data independence, data definition languages, data manipulation language – database manager, database administer database users. Overall system structure.

UNIT II:


UNIT III:

UNIT IV:

Network data model- DBTG set construct and restrictions, Expressing M:N relationship DBTG, cycles in DBTG, data description in the network model, scheme and subscheme, DBTG data manipulation facility data base manipulation. Mapping network to files. Hierarchical data model – tree concepts, hierarchical data model, data definition, data manipulation updates implementation of the hierarchical data base, additional features of the hierarchical DML, mapping hierarchies of files.

UNIT V:

Database security, integrity and control – Security and integrity threads defense mechanism security specification in SQL, Statistical database. Case study of database design.

Text Book:


Reference Books:

7. SOFTWARE ENGINEERING

UNIT I:

Introduction: Definition of software and software engineering software Myth - software engineering paradigm. Software project management: Software matrix – cost estimation - project planning.

UNIT II:

Software requirements analysis: Computer systems engineering - System analysis modeling the system architecture – System specification: Fundamentals of requirements analysis – The analyst – Problem areas – analysis principles – Software Prototyping specification; concept of requirements analysis methods – SADT; object oriented analysis and data modeling; Requirement analysis methods – Data structure oriented methods – Jackson system development specification techniques.

UNIT III:

Software design: design fundamentals: dataflow oriented design: Object oriented design; data oriented design; real time system design - concepts, analysis and design.

UNIT IV:

Implementation: Programming languages characteristics Programming language fundamentals – classification – coding style p coding efficiency, Testing software testing techniques –testing fundamentals – white box testing – basis path testing control structure testing black box testing – testing for Real Time systems – Software
strategies – approach – unit testing – Integration testing validation testing – System testing – Debugging techniques software quality assurance.
UNIT V:

Software maintenance – definition and characteristics – maintenance – task – side effects – reverse engineering and re-engineering; software configuration management. Computer aided software engineering (CASE): building blocks – project management tools – support tools analysis and design tools – programming tools – integration and testing tools – maintenance tools; integrated CASE environment (I – CASE)

Text Book:


Reference Books:


UNIT I:


UNIT II:

UNIT III:

Transcendental and polynomial equation initial approximation –
bisection, secant, Newton – Raphson, the Muller, the chebyshev and
multipoint iterative methods – polynomial equation – The Birge-vieta,
Bairstow and Graeffe’s root squaring methods.

UNIT IV:

System of linear algebraic equations and eigen value problems –
Gauss elimination, Gauss Jordon, Triangularization, Choleskey methods –
Gauss Jacobi and Gauss Siedel methods.

UNIT V:

Interpolation and approximation – Newton, Lagrange’s methods –
Numerical differentiation and Integration – methods based on
Interpolation – Trapezoidal rule – Simpson’s rule – Romberg Integration.
Text Books:


Reference Books:


9. MS-OFFICE AND C LAB

**MS-OFFICE- Lab**

1. Create a document and apply alignment and edit properties.
2. Create a table and apply its various properties.
3. Develop “Mail merge”.

**MS – Excel**

1. Create an Excel sheet uses the following operations
   2. Row/ Column formatting.
2. Create Chart applications.
3. Create an excel books that consists of various excel sheets.
   1. A work sheet should consist of tables & text.
   2. A work sheet should consist of charts.
4. Create a Table of values & how apply mathematical functions

**MS - Power Point**

1. Create Slides with different layout & apply different backgrounds.
2. Create slide with links and change the order of slides.
3. Create a slide with custom animation.
4. Create slides with action button and reverse using for the animation how.
**MS - Access**

1. Create a new database with various tables
2. Create different tables and assign relationships between them.
3. Create tables and develop action & cross tab queries
4. Create forms in column & tables style

**C - Lab**

1. Control Structures.
2. Arrays
3. String Manipulations
4. Function
5. Recursion
6. Structures
7. Pointers and
   - Arrays
   - Strings
   - Structures
8. File Manipulations
10. C++ AND JAVA LAB

C++:
1. Matrix Manipulation.
2. Implementation of stack using Arrays.
5. Write a program to convert infix to postfix expressions using arrays.
6. Write a program to add two polynomials using pointers.

JAVA:
1. Classes and objects.
2. Arrays.
3. Inheritance.
4. Packages and Interfaces.
5. Exception Handling.
6. Threads.
7. Simple applet programs.
11. RDBMS AND VB LAB

**RDBMS:**

1. Creation of tables – executing All Queries.

**PACKAGES IN D2K.**


3. Payroll.

4. Tourist Information System.

5. Banking System.

**VISUAL BASIC:**

1. Preparation of Arithmetic calculator.

2. Preparation of Students mark sheet.

3. Railway Reservation System.

4. Voters Information System.

5. Banking System.

6. Creating ActiveX Controls.
12. DISTRIBUTED SYSTEMS

UNIT I:


UNIT II:


UNIT III:


UNIT IV:


UNIT V:
Software concepts: Distributed Programming Languages – Issues – Application – Review Of Distributed Database.
Text Books:


Reference Books:


13. COMPUTER NETWORKS

UNIT I:

Goals and applications of network – Network structure – Network architectures – OSI reference model and services.

UNIT II:


UNIT III:

Data link layer design issues – Error detection and correction – Elementary data link protocols – Sliding window protocols – Protocol specification & verification.

UNIT IV:


UNIT V:

Transport layer – Design issues – Connection management – Addressing, establishing & releasing a connection, timer based connection
management, Multiplexing crash recovery, E-Mail – Cryptography – Case studies: Arc net, Ethernet, Arpanet.

**Text Book:**

**Reference Book:**

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14. **INTERNET AND WEB PROGRAMMING**

**UNIT I:**


**UNIT II:**

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UNIT III:


UNIT IV:


UNIT V:

Language: Introduction – Structuring Data – Document Type Definitions – Customized Markup Languages – XML Parsers - XHTML.
Text Book:


Reference Books:


15. ELECTIVE – 1

16. ELECTIVE – 2

17. INTERNET AND WEB PROGRAMMING LAB

Simple Web Page and website design for a department, college, company etc.,

1. Using HTML.
2. Using Java Script.
3. Using DHTML.
4. Using ASP.
5. Using Perl and XML.
ELECTIVE - 1
E 1.1 COMPUTER GRAPHICS

UNIT I:


UNIT II:

UNIT III:


UNIT IV:


UNIT V:


Text Book:


Reference Books:

UNIT I:

UNIT II:

UNIT III:

UNIT IV:

UNIT V:
Text Book:


Reference Books:


ELECTIVE - 1
E 1.3 WIRELESS APPLICATION PROTOCOL

UNIT I:


UNIT II:


UNIT III:

UNIT IV:

UNIT V:

Text Book:

Reference Book:
UNIT I:


UNIT II:


UNIT III:

Payment Systems: Form Barter to Money – Requirements for Internet-based Payments – Electronic Payment Media – Issues and

UNIT IV:


UNIT V:


Text Book:


Reference Books:


ELECTIVE - 2
E 2.2 OBJECT ORIENTED ANALYSIS AND DESIGN

UNIT I:

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

Text Books:

Reference Books:

ELECTIVE - 2
E 2.3 Client / server computing

UNIT I:

UNIT II:

UNIT III:
Online transaction processing – Decision support systems – OLTP vs. DSS – Data warehouses: elements – hierarchies – replication vs. direct
access – replication mechanism – EIS /DSS tools – client/server
transaction processing: transaction models – TP monitors - transaction
management standards.

UNIT IV:

Groupware: Components – components and distributed objects.
CORBA: components - object management architecture – services –
business objects.

UNIT V:

Client/server distributed system management-components -
management application – the internet management protocols –OSI
management protocols – OSI management framework - the desktop
management interface - X/OPEN management standards – client/server
application development tools - client /server application design.
Text Book


Reference Book
