M.Sc. Computer Application (M.Sc.(CA)) :2nd Year
Semester 3
Effective From: June-2011

Paper No. : 301
Paper Title : Advance PHP Programming [L:4, P:0]

1 PHP Programming
1.1 Code structure and documentation
1.2 Array, Reference and Functions
1.3 Site structure and basics of web site development using PHP
1.4 PHP and OOP templates
1.5 Error Handling

2 Accessing Database
2.1 Accessing MySQL Database
2.1.1 Connecting to MySQL DB Engine and database
2.1.2 Executing queries and retrieving resultsets
2.2 Database access with PEAR:DB
2.2.1 Connecting to various types of databases with DB
2.2.2 Sending Queries and retrieving results
2.2.3 Using Quotes, Placeholders, Sequences
2.3 Database access with PEAR:ADODB
2.3.1 Connecting to various types of databases with ADODB
2.3.2 Record Sets Management
2.3.3 Generating HTML from record set
2.3.4 ADODB_Pager class, PivotTableSQL and ADODB caching
2.3.5 Exporting data to CSV and Tab Delimited files

3 Networking with php
3.1 Browser detection
3.2 Accessing other web sites with php
3.3 Using fsockopen()
3.4 Sending Plain Text Mail Message with PEAR Mail
3.5 Sending MIME Mail Message with Mail_mime

4 PHP Authentication, Cookies and session Management
4.1 Using the AUTH module and different storage containers for AUTH
4.2 Accessing Session Data
4.3 Using Auth_HTTP
4.4 Creating and Managing cookies
4.5 Session management in PHP

5 Image generation
5.1 Creating and Manipulating images
5.2 Using Text in Images
5.3 Creating database driven graph
5.4 Saving and building on existing image.

6 Creating PDF
6.1 Creating PDF
6.2 Adding text to PDF
6.3 Drawing shapes and Using images
6.4 Creating multiple page PDF

7 Understanding PHP Internals
7.1 Logging with configuration options
7.2 Outputting Debugging Information using various functions
(echo, var_dump, highlight_string, get_class, get_object_vars, get_class_methods, get_class_vars, debug_backtrace, debug_print_backtrace, exit)
7.3 Profiling and debugging with XDebug
7.3.1 Tracing,
7.3.2 Profilling,
7.3.3 Using remote debugging
7.4 Working with Code Caches
7.4.1 Alternative PHP Cache(APC)
7.4.2 ionCube PHP accelerator(PHPA)
7.4.3 Truck MMCache

8 Extending php
8.1 PEAR
8.2 Zend
8.3 PRADO

Reference Books:

1) **Essential PHP Tools-modules, extensions and Accelarators** By David Sklar
Publisher : APRESS (SPD) ISBN: 81-8128-170-5
2) **PHP advanced for the World Wide Web** By Larry Edward Ullman
Publisher: Peachpit Press ISBN: 0-20177597-2
3) **Advanced PHP for Web professionals** By Christopher Cosentino
Publisher: Pearson education ISBN: 0-13-008539-1
4) **Expert PHP 5 Tools** By Dirk Merkel
Publisher : PACKT (SPD) ISBN 13 :978-93-5023-152-4
5) **PHP – a Beginners Guide** By : Ashok Appu
Publisher: Wiley Dreamtech India Pvt. Ltd. ISBN : 81-265-0311-4
6) **Learning PHP 5** By :- David Sklar
:Publisher: O'Reilly (SPD) ISBN : 81-7366-732-2
7) **Beginning PHP 5.1 FOR BEGGINERS** By: Ivan Byross, Sharanam Shah
Publisher: The Team (SPD) ISBN 10: 81-8404-075-X
8) **Beginning PHP 5**, By : Dave W. Mercer, Allent Kent, Steven D. Nowicki, David Mercer, Dan Squire, Wankyu Choi ,
Publisher: WROX (Wiley dreamTech), ISBN : 81-265-0539-

M.Sc. Computer Application (M.Sc.(CA)) :2nd Year
Semester 3
Effective From: June-2011

Paper No.: 302
Paper Title: Distributed Database Management System [L:4, P:0]

1. Introduction
1.1 Distributed data processing, What is a DDBMS?
1.2 Advantages and disadvantages of DDBMS.
1.3 Problem areas, Overview of database and computer network concepts

2. Distributed database Management System
2.1 Architecture
2.2 Transparencies in a distributed DBMS,
2.3 Distributed DBMS architecture Global directory issues

3. Distributed Database Design
3.1 Alternative design strategies
3.2 Distributed design issues
3.3 Fragmentation, Data allocation

4. Query Processing Issues
4.1 Objectives of query processing, Characterization of query processors
4.2 Layers of query processing, Query decomposition
4.3 Localization of distributed data

5. Optimizing Distributed Queries
5.1 Factors governing query optimization
5.2 Centralized query optimization, Ordering of fragment queries
5.3 Distributed query optimization algorithms

6. Distributed Object Management
6.1 Object model features
6.2 Fundamental object management issues
6.3 DOM architectures
6.4 Object caching, Object clustering, Object migration
6.5 Distributed object base systems

7. Query Processing In Distributed Object base Systems
7.1 Problems in accessing distributed objects
7.2 Distributed object assembly problem
7.3 Strategies for distributed object assembly

8. Transaction Management
8.1 The concept of 'transaction'
8.2 Goals of transaction management, Characteristics of transactions
8.3 Taxonomy of transaction models

Reference Books:

1. Principles of Distributed Database Systems. By M.T. Özsu and P. Valduriez.
Prentice-Hall [ISBN 978-0-470-40745-5]
(M. T. Özsu and P. Valduriez, *Principles of Distributed Database Systems, 3rd edition*, Springer, 2011; ISBN 978-1-4419-8833-1)
2. Distributed Object Management. By Morgan-Kaufmann.
M.T. Özsu, U. Dayal and P. Valduriez (editors) [ISBN: 9781558602564]
3. Distributed Databases Principles and Systems By S. Ceri and G. Pelagatti
McGraw Hill Book Company [ISBN:0-07-010829-3]
4. Advances in Object-Oriented Database Systems. By A. Dogac, M.T. Özsu, A. Billiris, and T. Sellis (editors) Springer-Verlag.
5. Modern Database Systems - The Object Model, Interoperability, and Beyond. By W. Kim (editor). ACM Press.
6. Object Oriented Database System – Approaches & Architectures By C.S.R. Prabhu (PHE Pub.)
7. Fundamentals of Database System 3rd edition By Eliniskv & Navathe
Addison Welsey
8. Database Management Systems By Raghu Ramakrishnan & Johannes Gehrke
McGraw Pub. .
9. Oracle 9i Distributed Database Replication Manual.

M.Sc. Computer Application (M.Sc.(CA)) :2nd Year
Semester 3
Effective From: June-2011

Paper No.: 303
Paper Title: Advance Software Engineering [L:4, P:0]

1. Advanced Software Process Models
1.1 Component-Based Process Model
- 1.1.1 The CBSE Process
- 1.1.2 Domain Engineering
- 1.1.3 Component-based development
- 1.1.4 Component classification, retrieval and reuse
- 1.1.5 Economics of CBSE

1.2 Agile Process Models
- 1.2.1 Xtreame Programming(XP)
- 1.2.2 Adaptive Software Development
- 1.2.3 Dynamic System development Model(DSDM)
- 1.2.4 Scrum
- 1.2.5 Crystal
- 1.2.6 Feature Driven development(FDD)
- 1.2.7 Agile Modelling(AM)

2. Client/Server Software engineering.
2.1 The structure of client/server systems,
2.2 Software engineering for c/s system,
2.3 Analysis modeling issues,
2.4 Design for c/s system,
2.5 Testing issues.

3. **Web Engineering**
3.1 Introduction web engineering
3.2 Formulation and Planning for Web Engineering
3.3 Analysis Modeling for Web Applications
3.4 Design Modeling for Web Applications
3.5 Testing Web Applications

4. Reengineering
4.1 Business process reengineering,
4.2 Software reengineering,
4.3 Reverse engineering,
4.4 Restructuring,
4.5 Forward engineering,
4.6 Economics of reengineering.

5. Software Quality Management
5.1 Basic Concepts of Software Quality
- 5.1.1 Defining Quality
- 5.1.2 Software Quality Factors,
- 5.1.3 Software Quality Metrics

5.2 Software Quality Assurance:
- 5.2.1 What is SQA?
- 5.2.2 Payoffs and Tradeoffs of SQA,
- 5.2.3 Quality through the Software Process
- 5.2.4 Components of an SQA Plan
- 5.2.5 Software Reviews

5.3 Formal Technical Reviews:
- 5.3.1 The Review Meetings
- 5.3.2 Review Reporting and Recordkeeping
- 5.3.3 Review Guidelines

5.4 Six Sigma, ISO 9000 software quality Standards, CMM

Reference books:

1) Software Engineering: A Practitioner's Approach, 6/e — By Roger S Pressman,
Tata McGrawHill Publication

2) Software Engineering: A Practitioner's Approach, 7/e — By Roger S Pressman,
Tata McGrawHill Publication

3) Web Engineering: A Practitioner's Approach 1/e — By Roger Pressman, David Lowe.
Tata-McGrawHill Publication

4) Software Engineering — By Ian Sommerville
Pearson Education (Addison-Wesley)

5) Web Engineering — By Emila Mendes, Nile Mosley
New Age Information (Springer) Publication

6) Client / Server Computing — By Patrick Smith, Steve Guengerich
PHI publication

7) ISO 9001:2000 for Software Organizations — By Swapna Kishore, Rajesh Naik
TATA McGrawHill Publication

8) CMM in Practice — By Pankaj Jalote
Pearson Education Publication

M.Sc. Computer Application (M.Sc.(CA)) :2nd Year
Semester 3
Effective From: June-2011

Paper No. : 304
Paper Title : ERP Systems [L:4, P:0]

1. **Introduction To ERP**

1.1 Evolution of ERP
1.2 Reasons for the growth of ERP
1.3 Scenario and Justification of ERP in India
1.4 Evaluation Of ERP
1.6 Various Modules Of ERP,
1.7 Advantage of ERP.

2 An overview of Enterprise

2.1 Integrated Management Information, Business Modeling
2.2 ERP for Small Business
2.3 ERP for make to order companies
2.4 Business Process Mapping for ERP Module Design
2.5 Hardware Environment and its Selection for ERP Implementation.

3 ERP and Related Technologies

3.1 Business Process Reengineering (BPR)
3.2 Management Information System (MIS)
3.3 Executive Information System (EIS)
3.4 Decision support System (DSS)
3.5 Supply Chain Management (SCM)

4. ERP Modules

4.1 Introduction to ERP modules
4.1.1 Finance module
4.1.2 Plant Maintainance module
4.1.3 Quality Management module
4.1.4 Materials Management

5 Overview of ERP Products

5.1 Introduction to SAP, People Soft, BaaN, Oracle, Microsoft Dynamics ERP solutions
5.2 Comparative Assessment and Selection of ERP Packages and Modules.

6 ERP implementation lifecycle

6.1 Issues in implementing ERP packages
6.2 Pre-evaluation screening
6.3 Package evaluation
6.4 Project planning phase, gap analysis, reengineering,
6.5 Configuration, implementation, team training, testing, going live
6.6 End-user training, post implementation (Maintainance mode).
6.7 Vendors, Consultants and users, In-House Implementation - pors and cons, consultants, end user.

7. Future Directions in ERP

7.1 New markets, new channels
7.2 Faster implementation methodologies
7.3 Business modules and BAPIs
7.4 New business segments
7.5 Web enabling
7.6 Market snapshot.

Reference Books:

1. Maximizing your ERP System: A practical guide for Managers By Scott Hamilton
   McGrow Hill Company ISBN : 007-140611-5
2. ERP : Making It Happen By Thomas F. Wallace, Michale H. Kremzar.
   Wiley Publication
3. ERP: Tools, Techniques, and Applications for Integrating the Supply Chain, Second Edition
   By Carol A. Ptak, Eli Schragenheim..
   Wiley Publication.
4. Enterprise Sales and Operations Planning By George E. Palmatier, Colleen Crum,
   J.Ross publishing
5. SAP MM Questions and Answers By Kogent Learning Solutions
   Publicattion:Jones & Bartlett Learning ,
6. ERP 100 Success Secrets By Godfrey Glenn
7. Management Information Systems By W.S Jawadekar
   TMGH, New Delhi
8. Management Information Systems By Gordon B davis and Margethe H Olson
   TMGH, New Delhi
9. Management Information Systems By Sadagopan
   Prentice hall of India.

M.Sc. Computer Application (M.Sc.(CA)) :2nd Year
Semester 3
Effective From: June-2011

Paper No. : 305
Paper Title : Multimedia Applications [L:4, P:0]

1. Computer graphics
1.1 Fundamentals
1.2 Vector graphics
1.3 Shapes
1.4 Transformations and Filters
1.5 3-D Graphics
1.6 Bitmapped graphics
1.7 Resolution
1.8 Image Compression
1.9 Image Manipulation
1.10 Geometrical Transformation
1.11 Combining Vectors and Bitmaps
1.12 File Formats

2. Video
2.1 Digitizing Video
2.2 Video Standards
2.3 Video Compression techniques
2.4 Digital Video Editing and Post-Production
2.5 Streamed Video and Video Conferencing

3. Animation
3.1 Captured Animation and Image Sequences
3.2 'Digital Cel' and Sprite Animation
3.3 Key Frame Animation
3.4 3-D Animation

4. Sound
4.1 The Nature of Sound
4.2 Digitizing Sound
4.3 Processing Sound
4.4 Compression
4.5 Formats
4.6 MIDI
4.7 Combining Sound and Picture

5. Distributed Multimedia System
5.1 Introduction to DMS
5.2 Main Features of DMS
5.3 Resources Management of DMS
5.4 Networking
5.5 Multimedia Operating System
5.6 Distributed Multimedia Servers
5.7 Distributed Multimedia Application

6. Multimedia Data Compression
6.1 Data Compression Terminology
6.2 A Classification of Data Compression Terminology
6.3 Data Compression Technology
6.4 Compression Standards

7. Animation Tools
7.1 Motion twining & Shape twining
7.2 Movie, Graphics and Button Concept
7.3 Motion path & Guide Layer
7.4 Masking
7.5 Animation effects
7.6 Embedding sounds in flash file
7.7 Action script
7.8 Advanced Action script
7.9 Exercise of Flash

8. Video Editing Tools

Reference Books:

1) Digital multimedia 3/e illustrated Publisher - Wiley, 2009	By Chapman, Nigel P. Chapman, Jenny Chapman ISBN : 0470512164, 9780470512166
2) Multimedia – making it work Publisher : Tata McGraw – Hill	By Tay Vaughan ISBN : 0-07-463953-6
3) Streaming Multimedia – Bible Publisher: John Wiley	By Steve Mack ISBN : 81-265-0290-8
4) Distributed Multimedia System	
5). Multimedia Communication System	By LPE Pearon Education Publication
6). Flash Bible	TechMedia Publication

M.Sc. Computer Application (M.Sc.(CA)) :2nd Year
Semester 3
Effective From: June-2011

Paper No. : 306

Paper Title : Practical **[L:0, P:10]**

Practical shall be based on the above subjects and should be implemented using PHP programming language and other required tools, Database Management systems like Oracle, SQL Server, DB2 or similar, Multimedia tools like Flash, Primer etc.

VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT

M.Sc. Computer Application (M.Sc.(CA)) :2nd Year
Semester 4
Effective From: June-2011

Paper No. : 401
Paper Title : Project

Entire semester is allocated for a full time project. All the students have to undergo a project in an industry / in-institute. At the end of the semester students have to submit project report to their respective institution and the project presentation and viva - voice will be conducted at the end of the semester.

VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT

M.Sc. Computer Application (M.Sc.(CA)) :2nd Year
Semester 4
Effective From: June-2011

Paper No. : 402
Paper Title : Seminar

During the project work students will have to select a topic for seminar and students are required to prepare a seminar report. At the end of the semester students have to submit seminar reports to the respective institutions. The seminar presentation and viva voice will be conducted at the end of the semester.

VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT

Proposed Teaching and Evaluation Schedule

FOR

M.Sc. Computer Application (M.Sc.(CA)) :2nd Year

3rd Semester

Paper No.	Paper Title	Teaching Schedule (In Hours)		University Exam		Internal Exam.	Total Marks
		Lect.	Pract.	Marks	Duration	Marks	
301	Advance PHP Programming	4	0	70	3	30	100
302	Distributed Database Management System	4	0	70	3	30	100
303	Advance Software Engineering	4	0	70	3	30	100
304	ERP Systems	4	0	70	3	30	100
305	Multimedia Applications	4	0	70	3	30	100
306	Practical	0	10	140	5	60	200
Total		**20**	**10**	**490**	**20**	**210**	**700**

4th Semester

Paper No.	Paper Title	University Exam	Internal Exam.	Total Marks	Weekly Schedule (In Hours)
		Marks	Marks		
401	Project	350	150	500	30
402	Seminar	140	60	200	
Total		**490**	**210**	**700**	**30**