T. Y. B. C. A. Semester 5

Effective From: June 2013.

Paper No.: **501 (Core Paper-1)** **Teaching Hours: 4 Hrs./Week**
Paper Title: **PHP MySQL** **Credits: 4**

Prerequisite: **Basic knowledge of scripting language and HTML.**

Aim: **To make students aware of open source web-based tools and database.**

Expected Outcome: **The students will be able to develop web based applications.**

1. **Introduction to PHP**
   - 1.1. Installation of PHP and MySQL
   - 1.2. PHP configuration in IIS & Apache Web Server and features of PHP

2. **Writing PHP**
   - 2.1. How PHP code is parsed
   - 2.2. Embedding PHP and HTML
   - 2.3. Executing PHP and viewing in Browser
   - 2.4. Data types
   - 2.5. Operators
   - 2.6. PHP variables: static and global variables
   - 2.7. Comments in PHP

3. **Control Structures**
   - 3.1. Condition statements
     - 3.1.1. If…Else
     - 3.1.2. Switch
     - 3.1.3. ? operator
   - 3.2. Loops
     - 3.2.1. While
     - 3.2.2. Break Statement
     - 3.2.3. Continue
     - 3.2.4. Do…While
     - 3.2.5. For
     - 3.2.6. For each
   - 3.3. Exit, Die, Return
   - 3.4. Arrays in PHP

4. **Working With Data**
   - 4.1. FORM element, INPUT elements
   - 4.2. Validating the user input
   - 4.3. Passing variables between pages

4.3.1. Passing variables through GET
4.3.2. Passing variables through POST
4.3.3. Passing variables through REQUEST

5. Working With Data

5.1. Built-in functions
5.1.1. Sring Functions: chr, ord, strtolower, strtoupper, strlen, ltrim, rtrim, substr, strcmp, strcasecmp, strpos, strrpos, strstr, stristr, str_replace, strrev, echo, print
5.1.2. Math Functions: abs, ceil, floor, round, fmod, min, max, pow, sqrt, rand
5.1.3. Array Functions: count, list, in_array, current, next, previous, end, each, sort, rsort, assort, array_merge, array_reverse
5.2. User Defined Functions

6. Sessions and cookies

6.1. Concept of Session
6.2. Starting session
6.3. Modifying session variables
6.4. Un registering and deleting session variable
6.5. Concept of Cookies

7. Introduction of MySQL

7.1. Types of tables in MySQL
7.2. Query in MySQL: Select, Insert, Update, Delete
7.3. Truncate
7.4. Alias
7.5. Order By
7.6. Database connectivity of PHP with MySQL

References:

1	Core PHP Programming	Leon Atkinson	Pearson publishers
2	The Complete Reference PHY	Stever Holzner	McGraw Hill
3	Beginning PHP 5.0 Database	Christopher Scollo, Harish Rawat, Deepak Thomas	Wrox Press
4	PHP – A beginners	Ashok Appu	Wiley
5	PHP 5.0 and MySql Bible	Tim Converse, Joyce Park, Clark Morgan	John Wiley & Sons
6	MySQL Bible	Steve Suehring	John Wiley &Sons
7	PHP Black Book	Peter Moulding	-
8	PHP 5 and Mysql	Tim converse, Joyce Park and Clark Morgan	Bible Wiley
9	Beginning PHP 5.3	Matt Doyle	Wrox Publication

T. Y. B. C. A. Semester 5
Effective From: June 2013.

Paper No.: **502 (Core Paper-2)** **Teaching Hours: 4 Hrs./Week**
Paper Title: **UNIX & Shell Programming** **Credits: 4**

Prerequisite: **Fundamental Knowledge of Operating System.**

Aim: **To provide basic knowledge of Multi-User Operating System.**

Expected Outcome: **The students will understand the concepts of Multi-User Operating System and will be able to work with such Operating System.**

1. Introduction
- 1.1. Features
- 1.2. System Structure
- 1.3. Shell & its Features
- 1.4. Kernel
- 1.5. Architecture of the UNIX OS

2. Overview
- 2.1. Logging in & out
- 2.2. I node and File Structure
- 2.3. File System Structure and Features
- 2.4. Booting Sequence & init process
- 2.5. File Access Permissions

3. Shell Programming
- 3.1. Screen Editor (vi)
- 3.2. Environmental & user defined variables
- 3.3. Argument Processing
- 3.4. Shell's interpretation at prompt
- 3.5. Arithmetic expression evaluation
- 3.6. Control Structure
- 3.7. Redirection
- 3.8. Background process & priorities of process
- 3.9. Conditional Execution

4. Advanced Shell Programming
- 4.1. Filtering utilities
- 4.2. awk
- 4.3. Batch Process
- 4.4. Splitting, Comparing, Sorting, Merging & Ordering Files
- 4.5. Communications with other users

References:

1	Unix Shell Programming, 3rd Edition	Stephen G Kochan, Patrick Wood	Sams Publishing
2	sed & awk, 2nd Edition	Dale Dougherty, Arnold Robbins	O'Reilly Media
3	The UNIX Programming Environment	Kernighan & Pike	PHI
4	The design of the UNIX OS	M. J. Bach -	Prentice Hall
5	Operating Systems	A. S. Godbole	Tata McGrew Hill
6	Working with UNIX	Vijay Mukhi	BPB Publications
7	UNIX Shells	Vijay Mukhi	BPB Publications.
8	UNIX System Concepts & Applications	Das	Tata McGraw Hill.
9	UNIX & Shell Programming	Yashwant Kanetkar	BPB Publications.

T. Y. B. C. A. Semester 5
Effective From: June 2013.

Paper No.: **503 (Core Elective)** **Teaching Hours: 3 Hrs./Week**
Paper Title: **Network Technologies** **Credits: 3**

Prerequisite: **Fundamental Knowledge of Operating System.**

Aim: **The objective is to provide basic knowledge of network components, network operating system, working of networking and security on networks.**

Expected Outcome: **Students will get knowledge of networking, OSI model, configuration & troubleshooting of different network topologies using various network devices.**

1. **An introduction to Networks, Network Topologies and Types**
   - 1.1. Data communication [Analog, Digital]
   - 1.2. Introduction: Networking
   - 1.3. Information Exchange, Sharing, preserving & protecting
   - 1.4. Hardware and Software Resource Sharing
   - 1.5. Need, Uses and advantages of Network
   - 1.6. Clients, Servers, Peers based and Hybrid Networks
   - 1.7. Server types
   - 1.8. Network Topologies (Bus, Star, Ring, Star Bus, Star Ring & Physical Mesh)
   - 1.9. Defining Network Protocols (H/W Protocols, S/W Protocols, H/W-S/W Interface)
   - 1.10. Introduction to wireless network, Ad-hoc wireless and sensor wireless network.

2. **The OSI Model and Network hardware**
   - 2.1. Introduction to OSI Model with all layers
   - 2.2. Data Communication Model, Digital and Analog data and signals, bit rate, baud, bandwidth, Nyquist bit rate
   - 2.3. Introduction to Guided Transmission Media – Twisted Pair, Coaxial cable, Optical fibre
   - 2.4. Wireless transmission – Radio waves, microwaves, infrared waves; Satellite communication.

3. **Network S/W (Operating Systems)**
   - 3.1. What is Network Operating System?
   - 3.2. Common features of Different Operating Systems (Windows XP, Windows-7 and NT Workstation)

4. **Network Security: Introductory Concepts and Terminologies**
   - 4.1. Various types of securities
   - 4.2. Security with certificates
   - 4.3. Firewalls

5. Basic of TCP/IP

5.1. IP Address, IP Subnet

5.2. Introduction of UDP and TCP

Reference:

1	Networking Complete – 3rd Edition	-	BPB Publication
2	Mastering Local Area Networks	Christa Anderson & Mark Minasi	BPB Publication
3	Networking Essentials Study Guide	MCSE	Tata McGraw Hill Publication
4	Windows 2000 N/W Infrastructure Desing	MCSE	Tata McGraw Hill Publication
5	Windows 2000 Professional Study Guide	MCSA/MCSE	Tata McGraw Hill Publication
6	Computer Networks	TenanBaum	PHI
7	Data communication & N/W	B. Forouzan	Tata McGraw Hill Publication..

T. Y. B. C. A. Semester 5
Effective From: June 2013.

Paper No.: **504 (Foundation)** **Teaching Hours: 2 Hrs./Week**
Paper Title: **Operating System-II** **Credits: 2**

Prerequisite: **Fundamental Knowledge of Operating System.**

Aim: **To Understand Various Advanced Functions and Concepts to Manage Operating System along with scheduling concept.**

Expected Outcome: **Students will get good understanding of various Functions and Management of Operating System.**

1. **Memory Management**
   - 1.1. Memory Management Functions
   - 1.2. Contiguous Allocation
     - 1.2.1. Partitioned Memory Static and Dynamic Allocation
     - 1.2.2. Segmentation
   - 1.3. Non-Contiguous Allocation
     - 1.3.1. Paging Segmentation
     - 1.3.2. Demand Paging and Segmentation
     - 1.3.3. Allocation and Replacement Policies

2. **Process Management**
   - 2.1. Process Management
   - 2.2. Process Concept
   - 2.3. Scheduling
   - 2.4. Scheduling Algorithms
   - 2.5. Process co-ordination
     - 2.5.1. Producer / Consumer Problem
     - 2.5.2. Critical Section Problem
     - 2.5.3. Semaphores
     - 2.5.4. Inter Process Communication
     - 2.5.5. Deadlocks

3. **File Management**
   - 3.1. File Management Functions.
   - 3.2. File System and Directory Structure Organization.
   - 3.3. File Protection.

Reference:

1	An OS Concept	Silberschatz	Addition Wesley Publication
2	An Operating Systems	W.Stallings	PHI
3	Understanding Operating Systems	I.M.Flinn, A.M. Mchoes	Thomson Learning
4	Operating Systems	Donovan M	McGraw Hill Publication
5	Operating Systems : A Design Oriented Approach	Crowley	Tata McGraw Hill Publication
6	Operating Systems	S. Godbole	TMH.

T. Y. B. C. A. Semester 5
Effective From: June 2013.

Paper No.: **505 (Core Paper-3)** **Teaching Hours: 4 Hrs./Week**
Paper Title: **ASP .NET** **Credits: 4**

Prerequisite: **Basic Concepts of .NET & HTML.**

Aim: **To provide knowledge about developing web based applications.**

Expected Outcome: **Students will get good hands on experience to develop web based applications and will also get good understanding about project development.**

1. Introduction to ASP.NET
- 1.1. What is ASP.NET
- 1.2. .Net framework 2.0
- 1.3. Compile Code
  - 1.3.1. Code Behind and Inline Coding
- 1.4. The Common Language Runtime
- 1.5. Object Oriented Concepts
- 1.6. Event Driven Programming

2. Server Control
- 2.1. Post back
- 2.2. Data binding
  - 2.2.1. Grid View
  - 2.2.2. List Box
  - 2.2.3. Data list
  - 2.2.4. Data binding Events
  - 2.2.5. Repeater
  - 2.2.6. Form view
- 2.3. Web Server Control
- 2.4. Html Server Control (basic HTML Server Control)
- 2.5. Validation Control
- 2.6. Master Page
- 2.7. Themes & CSS

3. Database Access
- 3.1. Introduction about ADO.NET
- 3.2. Introduction about Provider, Adapter, Reader,Command Builder
- 3.3. Database Access using ADO.NET

4. Client Server Communication
- 4.1. Communications with Web Browser
- 4.2. Response Object
- 4.3. Cookies
- 4.4. Query String
- 4.5. Session Management and Scope of Variable

5. Advance ASP.NET
- 5.1. Web.config
- 5.2. Sitemappath Server Control
- 5.3. User Control
- 5.4. User Profile

6. Web Services
- 6.1. Basics of Web Services
- 6.2. Interacting with web services

7. Error Handling
- 7.1. Unstructured Error
- 7.2. Structured Error
- 7.3. Error handling in Database

Reference:

1	Professional ASP.NET 1.1	Bill Evjen , Devin Rader , Farhan Muhammad, Scott Hanselman , Srivakumar	Wrox
2	Introducing Microsoft ASP .NET 2.0	Esposito	PHI
3	Professional ADO.NET	Bipin Joshi,Donny Mack, Doug Seven , Fabio Claudio Ferracchiati, Jan D Narkiewiez	Wrox
4	Special Edition Using ASP.NET	Richard Leineker	Person Education
5	The Complete Reference ASP.NET	Matthew MacDonald	TMH
6	ASP.NET	Black Book	DreamTech
7	Beginning ASP.NET 3.5 in C# and VB	Imar Spaanjaars	Wrox

T. Y. B. C. A. Semester 5
Effective From: June 2013.

Paper No.: **506** **Practical Hours: 12 Hrs./Week**
Paper Title: **PRACTICAL (Core)** **Credits: 6**
(Based on Papers 501, 502 & 505)

1. Batch Size – 30 Maximum

2. Work load of teaching faculty: For 2 hours of practical per batch, 1 hour of work load should be considered.

3. Practical journal should be prepared having minimum 15 practical problems (and in case of PHP MySQL & ASP .NET, 15 forms) should be implemented for each practical subject. The journal should be certified by the concerned faculty and also by the Head of the Department, failing which the student should not be allowed to appear for External Practical Examination.

T. Y. B. C. A. Semester 5

Effective From: June 2013.

TEACHING & EVALUATION SCHEME

No.	Course Type	Subject	Credit	Hrs./ Week	Internal Marks	External Marks	External Exam Duration	Total Marks
501	CORE	PHP/MySQL	4	4	30	70	3 Hrs	100
502	CORE	UNIX & Shell Programming	4	4	30	70	3 Hrs	100
503	CORE Elective	Network Technologies	3	3	30	70	3 Hrs	100
504	Foundation compulsory	Operating System-II	2	2	30	70	3Hrs	100
505	CORE	ASP .NET	4	4	30	70	3 Hrs	100
506	CORE	Practical	6	12	60	140	5 Hrs	200
	Foundation Elective	To be Selected from the list (eg NCC/NSS/Saptdhara	2	2				
TOTAL			25		210	490		700