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शिवाजी विद्यापीठ, कोल्हापूर - ४१६ ००४.
दुरध्वी : (ईपीएबीएक्स) २६०९००० (अभ्यास मंडळे विभाग- २६०९०९४) तार : युशिवाजी
फॅक्स : ००९१-०२३१-२६९१५३३ व २६९२३३३.e-mail:bos@unishivaji.ac.in

★★★★★B+
Accredited By NAAC

SU/BOS/Science/3979 **Date: 1/7/2009**

To,
The Principal,
All Affiliated Science Colleges,
(B.Sc.III Computer Science.)

Subject:- Regarding the revised syllabus of B.Sc.III Computer Science (Paper V to VIII) under the Faculty of Science.

Sir/Madam,

With reference to the subject mentioned above, I am directed to inform you that, the university authorities have accepted and granted approval to the revised syllabi of B.Sc.III Computer Science (paper V to VIII) under the Faculty of Science.

1) The revised will be implemented from the academic year 2009-2010 i.e. from June, 2009 onwards. A CD containing revised syllabi is enclosed herewith. This syllabi is also available on university website www.unishivaji.ac.in.

2) Further, it is hereby informed that the question papers on the pre-revised syllabi of above mentioned courses/subjects will be set for examinations to be held in October - 2009 and April - 2010. These two chances are available for repeater students, if any.

You are, therefore, requested to bring this to the notice of all students and teachers concerned.

Thanking you,

Yours faithfully,
Sd/-
Dy Registrar

Encl: CD
Copy to:
1) Dean, Faculty of Science
2) Chairman, Ad-hocBoard in Computer Science,
3) Appointment Section
4) B.Sc. Section
5) Computer centre
6) Affiliation Section

SHIVAJI UNIVERSITY, KOLHAPUR.

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New/Revised Syllabus For

Bachelor of Science (Computer Science)

(Part III- Paper V to VIII)

(Subject to the modifications to be made from time to time)

Syllabus to be implemented from June 2009 onwards.

SHIVAJI UNIVERSITY, KOLHAPUR

B.Sc.- III (Computer Science) Syllabus

Syllabus to be implemented from June 2009 onwards.

The following papers will be proposed for the **B. Sc Part III** (Computer Science)

Paper V: Network Technology

Paper VI: Visual Basic .NET programming

Paper VII: Linux Operating System

Paper VIII: E-commerce and Web Technology

Paper V: Network Technology

SECTION – I

Unit 1: Introduction to computer network (10)

Objective, definition, component, Uses of computer network for companies, Classification of computers on: Transmission technology, scale (LAN, WAN, MAN and Wireless network), Peer to peer network, Client/Server network, Host terminal network, network, Virtual private network.

Unit 2: Unit 4: Data Communication: (8)

Theoretical Basic for communication:- Fourier Analysis , Band limited signal , Maximum data rate of a signal. Transmission impairments: - Delay distortion, Dispersion, Noise. Data communication modes:- Serial and Parallel, Simplex, Half duplex and full duplex, Synchronous and asynchronous transmission.

Unit 3: Network software and network standardization: (12)

Introduction, Network software(Protocol hierarchy, Design issue for the layer, Merits and demerits of the layered architecture , service primitives) Protocol:- Network Protocol TCP/IP(IP4 and IP6)SPX/IPX Tunneling protocol :- PPTP, L2tp, IP, SECApplication ProtocolFTP,Telnet,HTTPMail Protocol:- SMTP,POP, IMAP Network Standardization:- Telecommunication world,Standard world, Internet standard word)Frames formats and standard:- Ethernet (802.2, 803.2), Wireless (802.11a, 802.11g)

Unit 4:- Network component (10)

Component: Cable-twisted, co-axial, fiber-optic, connector RJ45, Ethernet card , Hubs, Router , Modem, Dial up modem , ISDN Modem , DSL cable Modem.

SECTION – II

Unit 5 ISO/ OSI reference model (12)

Introduction -standardization OSI.

Layers- introduction to Physical layer,

Data link layer-framing, error control, flow control.

Network layer-Store and forward packet switching, routing.

Transport Layer-Berkeley sockets, transport service Primitive, addressing, connection establishment, connection release.

Unit 6 : Introduction to Windows Server 2003 12

Introduction to n/w operating system, features and function of network operating system, Introduction to administration accounts and resources. Multimedia:- Introduction. The Windows Server 2003 environment: Logging on to Windows Server 2003.Using the Run as features for administration. Installing and configuring administrative tools, crating and organizing units. Managing user and computer accounts:- Creating user and computer accounts, modifying properties of use and computer accounts, creating user accounts templates, managing user and computer accounts

Unit 7:- Introduction to Windows Server 2003 (10)

Active directory, Managing Groups:- Creating groups , Managing groups relation, Strategies for using group, using default group, features of NTFS file system.

Unit 8:- Managing access to resources 12

Resources, shared folder, files and folder), using NTFS permission, Determining Effective permission, Managing access to object in organizational unit: Modifying permission for archieve, directory object , Delegating control of organizational unit, Implementing group policy Implementing group policy object , Implementing, GPOs on domain , Managing the deployment on group policy ,Securing Windows Server Introduction to securing server, Implementing core, server security , Hardening server, Microsoft Baseline security Analyzer.

Reference books-

Computer Network- Tanenbaum

Computer network – black

Microsoft Windows 2003 server—TATA MC Grew Hill

Practical Experiments:

1. Managing user and computer accounts:-

Creating user and computer accounts, using queries to locate account

Modifying user and computer account properties.

2. Creating and managing group:

Creating global and domain local group

Managing group membership

Managing default group

3. Managing access to resources:

Creating and sharing folder

Configuring NTFS permission

Publishing shared folder

Testing permission,

4. **Managing access to object:-**

Modifying the delegation of control wizard and delegating permission.

Testing the delegated permission

Granting the permission to legal organizational unit and creating task pad

5. Implementing a GPO:-

Disabling and deleting a GPO

Creating and linking multiple GPOs

Filtering the GPO to exempt selected user

Backing up and importing **GPO setting**

6. Securing Windows Server 2003

Using the security configuration wizard

Configuring a group policy object for member server

Scanning a range of computer by MBSA

7. Implementing printing:-

Installing printer and setting printer locations and permission

Searching for printer and testing permission.

Paper – VI: Visual Basic .NET Programming

Section – I

Unit 1: Introduction to Visual Programming **10**

Event driven programming, History of VB.Net, Features of VB.Net, Architecture of VB.Net [.Net server, framework, services etc.],.Net Framework: framework components, classes, CLR, VB.Net IDE

Unit 2: Variables and control statements **10**

VB.Net: Variables, keywords, constatnts, data types, conditional statements, looping statements, case control statements.

Unit 3: Activex Controls **13**

Activex control, form, label, link label, button, group box, textbox, list box, combo box, radio button, timer, dialog boxes, picture box, data grid, tool bar, menu bar.

Unit 4: **Arrays and string class:** **12**

The array class, collections, lists, string class, jagged array, array list, string class and function.

Section II

Unit 5: **OOP using .Net** **10**

classes, and objects,constructor,destructor,methods,properties, delegates, assemblies, namespaces.

Unit 6: **Inheritance, Polymorphism** **10**

Inheritance-single, multiple, multilevel inheritance

Polymorphism-constructor overloadind, method overloading, overriding

Unit 7: **File and exception Handling**. **12**

File operation-read, write, delete

Exception - type of errors, structured and unstructured exception.

Tracing errors: breakpoint, watch, quick watch, locals and autos.

Unit 8:**ADO.Net:** **13**

Components of ADO.Net, features of ADO.Net, Datasets, Data table, Datarow, datacolumn, Datareader, ADO.Net programming

Reference Books :

1) Visual Basic.NET Black Book – Steve Holzner

2) Visual Basic.NET Programming Bible – Bill Evjen

3) Pro ADO.NET with VB.NET – Sahil Mailk and Paul Dickinson

4) Beginning VB.NET- Wrox Publication

Practical Experiments:

Section I

1. Accept three numbers & find out the largest & lowest among these.
2. Calculate compound interest of given principal amount for given time period with given rate of interest. Use appropriate controls.
3. Implement a standard calculator.
4. Accept 10 elements in array & perform binary search.
5. Demonstrate string class method & properties.
6. List box & combo box demonstration with differences in properties.

Section II

1. Simple class & object based programs.
2. Calculate difference between two dates use proper User Defined data type.
3. Implement simple stack.
4. Demonstrate simple polymorphism.
5. Connect your application to Ms-Access/SQL server database using ADO.Net classes.
6. implement read and write operation of file
7. Design different application using SQL/MS-Access and ADO.Net
8. Demonstrate use of data grid.

Paper –VII: Linux Operating System

Section – I

Unit 1: Functions and Types of an Operating System:

DOS, Windows, Overview of the Linux system. Kernel and Shell, Kernel-Shell relationship, Features of Linux OS. (5)

Unit 2: Handling Files and Directories:

File, File Types, Handling Ordinary files- cat, cp, rm, mv, lp, file wc, split, comp, comm., diff. Directories: Parent, child relationship- pwd, cd, mkdir, ls, rmdir, pathnames, System directories and their functions. File Attributes- inode, file system, file security, changing file permissions(symbolic, octal)- chmod

(15)

Unit 3: The Shell:

Pattern matching, backslash, pipes, tees, Redirection- Input, Output, error (8)

Unit 4: Process:

shprocess, parent and child, process status, system process, process creation, Termination of process, init-process, running jobs in background, no hang up, at and batch- execute, later on. (12)

Section – II

Unit 5: Vi editor:

Three modes-command, input, ex-, managing and saving the text, repeat factor, search and replace. (5)

Unit 6: Filters:

Basic Filters- pr, head, tail, cut, paste, sort, grep expressions, advanced filters, sed and awk, simple awk programming, formatted outputs, printf, BEGIN and END, section, arrays, field level operations. (15)

Unit 7: Shell Scripts:

Shell script, read, command line arguments, if, case, looping statements, running shell script (10)

Unit 8: System Administration:

Booting, shutdown, file system- mounting, unmounting, managing diskspace, find, backup-cpio, printer management. (10)

Reference Books:

1. LInux Command- Instant Reference By Bryan PFaffenberge
2. UNIX Concept and Applications- Sumitabha Das
3. Red Hat Linux 718 – Bill Ball, David Pitts
4. Linux Programming – Foreword By Alan Cox

Practical Experiments:

1. Interacting with Linux: Login, Logout, password, General Purpose Utilities.
2. Handling Files and Directories: List, copy, rename, move, print, creating directory, removing directories, change directory.
3. Pattern matching, redirection, command linking, common substitution.
4. vi-editor: command mode, Insert mode, Ex mode, creating simple text files and use of various command mode commands, saving files.
5. Use of filters: grep, grep expressions, sed, awk, simple awk programs.
6. Writing and running shell scripts:

    To count number of files

    To find working users on networks

    To handle file tests

    Use of loop structures, case structures

    Menu driven shell scripts.

PAPER –VIII: E-Commerce and Web Technology

Section – I

Unit 1: E-commerce **12**

Meaning, objective, challenges and opportunities, basic models of E-commerce – Business to business, business to customer, customer to business, Electronic data interchange: Concept of EDI, requirements, benefits, components of EDI and its applications.

Unit 2: Electronic payment system **10**

Overview of electronic payment technology, electronic or digital cash, electronic cheques, online credit card-based systems, consumer legal and business issues.

Unit 3: Electronic commerce and banking **10**

Changing dynamics in the banking industry, home banking: History, implementation approaches, open versus closed models, management issues in online banking, online customer services and support, technology and marketing strategies

Unit 4: E-security **12**

Security issues, security threats, security breach, access control, firewall and proxy services, security issues, digital signature, electronic document, cryptography

Section – II

Unit 5: Designing web page **10**

Introduction, www, Architecture of World Wide Web, steps in web development, naming scheme for HTML DOCUMENT, TIPS For Designing Web Page. HTML Elements –basic tags, <img>, <frameset>, <embed> ,<bgsound>,<Form tag>INPUT, SELECT, TEXTAREA, etc. introduction to cascading style sheet (CSS),cross browser testing.

Unit 6: Introduction To Client Side scripting **12**

Limitation of HTML, java script statement-keywords, datatypes, basic statement, control Statement (if-else, looping) with examples, event handler, built in function and validation

Unit 7: Introduction to server side scripting **10**

ASP advantages, server setup for ASP, built in object in ASP, GET and POST methods ,database handling-connection, recordset object .

Unit 8: **Case studies:** **12**

1. Hospital website
2. Super market web site

Reference Books:

1. Web Enabled Commercial Application Development Using HTML, DHTML, Java Script , Perl – Ivan Bayross
2. Electronic Commerce - Ravi Kalakota and Andrew Whinston PEARSONS
3. Beginning E-commerce - Matthew Reynolds Shroff Publishers &Distributors
4. The E-Biz Primer How to design profitable websites and portals
Alexis Leon and Mathews Leon
5. E-commerce - Deepak Goel S. Chand
6. E-commerce, Business on the Net Kamlesh Agarwal McMillan
7. E-commerce, The Cutting Edge of Business Bajaj and Nag - Tata McGraw Hill

8. E-Commerce by S. Jaiswal – Galgotia Pub.
9. HTML4 Unleashed – Rick Dranell
10 ASP AND Beginners Guide –DaVA merces,TMH
11. Active Server pages 3.0 BY WROX Publication.
12 Active Server pages 3.0 - SCOTT ,MITCHELL,, JAMES ATKINSON.
13. Java script- Danesh

Practical Experiments:

1. Write HTML program for client side image mapping.
2. Write HTML program to play audio and video on web page
3. Write HTML program for demonstrate cross browser testing.
4. Write a JavaScript program to print pyramid.
5. Write a JavaScript program to print multiplication table.
6. Write a JavaScript program to validate user name and password.
7. Write a JavaScript program to validate e-mail address.
8. Write an ASP program to display client side and server side date, time, day month and weekday.
9. Write an ASP program to calculate factorial of given number.
10. Write an ASP program to display number of times certain web page is visited.
11. Write an ASP program to accept birth date and calculate age of the person.
12. Write an ASP program to accept Roll no, name and marks from user and display grade of the student and store it in database.

Practical Paper IV (Based on Paper V and Paper VI) - 50 marks
Practical Paper V(Based on Paper VII and Paper VIII) - 50 marks
Practical Paper VI : Project work - 100 marks

Project work Guidelines:

1. Institute is expected to conduct educational visit to the any computerized industry and students are supposed to submit the report based on same.
2. Software development project is to be carried out by the candidate in actual consumer environment taking some real life problem.

3. The candidate is supposed to document and submit the project work according to nonce of software engineering i.e. the project document should contain synopsis detailed design, sample testing and conclusion
4. Project will have internal guide to supervise and monitor the progress of the same. The internal guide may assign the project to the student or within the group of student (maximum 2 candidates in group) depending upon the complexity of the problem. Preferably using access/oracle/sql server as a back end and VB.Net as front end
5. There will be online demonstration of project work in the presence of the external examiner and it will be considered for the evaluation.
6. The mark distribution for Practical paper VI will be as follows

   Total marks – 100 marks

Educational visit	20 marks
Project documentation	40 marks
On-line Presentation	40 marks

- **EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS- (FOR REVISED SYLLABUS**

Paper Number	Title of OLD Paper	Title of New Paper
Paper V	Networking Concept and Administration	Network Technology
Paper VI	Visual Programming	Visual Basic .Net Programming
Paper VII	UNIX Operating System	LINUX Operating System
Paper VIII	Computer Center Management	E-commerce and Web Technology
Practical Paper-IV	Based On paper V & VI	Based On paper V & V
Practical Paper-V	Based On paper VII &V III	Based On paper VII & VIII
Practical Paper-VI	Project work	Project work

NATURE OF QUESTION PAPER AND SCHEME OF MARKING :-

- **THEORY QUESTION PAPER:**

The nature of the theory question paper will be as follows:

Instructions : 1. The question paper will be of 100 marks and of 3 hours duration.
2. All questions are compulsory.
3. Figures to the right indicate full marks.

- **NATURE OF PRACTICAL QUESTION PAPER:**

SECTION – I (50 marks)			
Q. 1	10 Multiple Choice Questions (One Mark each)		10 marks
Q. 2	Attempt any TWO out of THREE(Ten marks each)		20 marks
	i)		
	ii)		
	iii)		
Q. 3	Attempt any FOUR (5 marks each)		20 marks
	i)		
	ii)		
	iii)		
	iv)		
	v)		
	vi)		
SECTION – II (50 marks)			
Q. 4	10 Multiple Choice Questions (One Mark each)		10 marks
Q. 5	Attempt any TWO out of THREE(Ten marks each)		20 marks
	i)		
	ii)		
	iii)		
Q. 6	Attempt any FOUR (5 marks each)		20 marks
	i)		
	ii)		
	iii)		
	iv)		
	v)		
	vi)		

- The practical question paper IV and V for B.Sc.-III(computer science) will be of maximum 50 marks each.

- The practical paper IV having four questions out of which two questions are based on Paper – V and Two questions are based on Paper VI of Computer Science.
- The practical paper V having Four questions out of which Two questions are based on Paper – VII and Two questions are based on Paper VIII of Computer Science.
- The Student has to attempt any TWO questions out of FOUR questions. Each question carries 20 marks.
- 10 marks are for Viva and certified Journal.
- The student appearing for the practical examination is expected to write paper work for TWO questions.
- Paper work is compulsory and it includes problem analysis and algorithm, source code and tracing.
- It is expected to complete the paper work within 90 minutes.
- The duration of practical will be 4 hours.
- Practical Paper VI is Project work of 100 marks.

CHAIRMAN
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