SHIVAJI UNIVERSITY, KOLHAPUR.

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2009
Revised Syllabus For
M.C.A. Science Part-I

(Subject to modifications to be made time to time)

Syllabus to be implemented from June 2013

Shivaji University, Kolhapur
Department of Computer Science

Course structure

M.C.A. Part I - Semester I

Course Code	**Title of the Course**	Credits	Teaching Scheme (h/w)		Evaluation Scheme (marks)		
			L	P	CIE	SE	Total
CS1111	Computer Technology	4	4	-	20	80	100
CS1112	Programming Paradigms	4	4	-	20	80	100
CS1113	Data Base Theory and Applications	4	4	-	20	80	100
CS1114	Mathematical Foundations	4	4	-	20	80	100
CS1115	Programming Paradigms Lab	4	-	12	20	80	100
CS1116	Data Base Lab	4	-	12	20	80	100
CS1131	CBCS (Comp.Sci / Other Dept.)	4	4	-	20	80	100
Total		28	20	24	140	560	700

M.C.A. Part I - Semester II

Course Code	**Title of the Course**	Credits	Teaching Scheme (h/w)		Evaluation Scheme (marks)		
			L	P	CIE	SE	Total
CS1211	Computer Architecture	4	4	-	20	80	100
CS1212	Object Oriented Technologies	4	4	-	20	80	100
CS1213	Operating System	4	4	-	20	80	100
CS1214	Numerical Methods	4	4	-	20	80	100
CS1215	Object Oriented Technologies Lab	4	-	12	20	80	100
CS1216	Numerical Methods Lab	4	-	12	20	80	100
CS1231	CBCS (Comp.Sci / Other Dept.)	4	4	-	20	80	100
Total		28	20	24	140	560	700

Department of Computer Science
Credit System Syllabus
Master of Computer Application
Semester -I
Paper-I (CS1111): Computer Technology

Unit-I (15)

Introduction to Computer: Introduction, Importance, Characteristics, and use of Computers, Five generations of Modern Computers, Classification of Computers: Microcomputers, Minicomputers, Mainframes, Supercomputers, Network computers, Anatomy of a Digital Computer: Parts of computer, Computer Architecture: First Electronic Computers, Low-level and high-level languages, Inside computer system, Peripheral Devices CISC and RISC with characteristics, advantages and disadvantages.

Unit-II (15)

The Number System: Decimal, Binary, Octal, and Hexadecimal number system, Conversion from one to other number system, 1's,2's, 9's and 10' s Complements, Signed and unsigned number representations, Fixed-point and Floating-point representation of numbers, BCD, Gray-code, Excess-3 code, ASCII and EBCDIC code.

Unit-III (15)

Central Processing Unit and Memory: CPU, Memory and its organization, RAM, DRAM, SRAM, ROM, Registers, Factors affecting processing speed, Instruction set, Machine cycle, Working of CPU and Memory, Secondary Storage Devices: Classification and advantages of secondary devices, Magnetic tape, Magnetic disk, Optical disk, Zip, Jaz, super and Magneto-Optical disk, Input Devices: Keyboard, mouse, trackball, Scanners, Barcode Reader, Card Reader, Digitizer, Voice Recognition, Webcams, Digital Cameras, Video cameras, OCR, OMR, ICR, MICR

Unit-IV (15)

Output Devices: Monitor CRT, Flat-Panel Characteristics, and Video standards, Printer, Plotter, Multimedia Projector, Sound cards and Speakers, Dumb, Smart and Intelligent Terminals. Introduction to Software: Computer software, s/w and h/w interaction, classification, operating systems, Utilities, Compilers and Interpreters, Programming Languages: Machine, Assembly and High-level languages, Types of high-level languages.

References:

1) Fundamentals of Information Technology --- Alexis Leon, Mathews Leon
2) Computer System Architecture ----- M Morris Mano (Pearson Education)
3) Computer Architecture ---- William Stallings
4) Computer Architecture ----- Hwang Briggs
5) Computer Architecture and Organization ----- J P Hayes (MGH)
6) Computer System Architecture ------ Baer J L (Computer Science press)

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Semester -I
Paper-II (CS1112): Programming Paradigms

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UNIT-I (15)

Introduction to Problem-solving: Introduction, Problem-solving Aspect, Top-down design, Implementation of Algorithms, Program Verification, The efficiency of algorithms, The Analysis of Algorithms, Asymptotic Notations: The Big-O Notation. Flow Charts : Notations, Examples, Basic Data Types.

UNIT-II (15)

Fundamental Algorithms: Exchanging values of two variables, Counting, Summation of a set of numbers, Factorial Computation, base conversion.
Recursive Algorithms: Introduction, Linear Recursion, Binary Recursion, Non-linear recursion.

UNIT-III (15)

Array Techniques: Introduction, Array Order Reversal, Array Counting, Finding maximum number in a set, removal of duplicates from an Ordered Array, Partitioning an array, Finding the K^{th} smallest element, Longest Monotone Subsequence. Pointer Arithmetic, Strings : Declaration and initialization, Standard library functions, Strings and pointers, Array of strings, malloc and free.

UNIT-IV (15)

Structures and Unions : Creating structures, Accessing structure members (dot Operator), Array of structures, Pointers and structures, Unions, Difference between structures and unions, C Preprocessor : Format of Preprocessor directive, File Inclusion directive, Macro, Command Line Arguments :Accessing command line arguments, File Handling : Types of Files, Operations on files, Random access to files

- Text Books/Reference Books:
  1. How to Solve it by Computer- R.G.Dromey
  2. Introduction to algorithms-Thomas H. Cormen, Charles E.Leiserson
  3. Syntax of Programming Languages:Theory and Practice-R.C. Backhouse
  4. Computer Science: A modern Introduction- L. Goldschlager and A. Lister
     Ellis Horowitz, Sartaj Sahni : Fundamentals of Computer Algorithms (Galgotia)
  5. Kernighan and Ritchie : The C Programming language
  6. Herbert Schildt : Complete C Reference

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Semester -I
Paper-III (CS1113): Database Theory and Applications

UNIT-I (15)

Introduction to DBMS :Concept and architecture of DBMS ,Schemas,instances and data independence,Introduction to conventional data models (Network ,Hierarchical and Relational)
Relational model : Concept , Relational Algebra and Tuple and Domain Calculus
SQL – basic structure of SQL Queries, set operation, aggregate function, nested subqueries, Complex queries, Views ,modification of the database.'
Integrity constraints , Indexing RDBMS – Oracle

UNIT-II (15)

Database Design and the E-R Model: Overview of the design process, E-R Model, constraints, E-R diagrams, E-R design Issues
Relational database design : Functional dependencies , Normal Forms , Loss less join and Dependencies preserving decomposition

UNIT-III (15)

Transactions and Concurrency Control:- Transaction concept, transaction state, concurrent execution , serializability, Recoverability, Locking , Time stamp ordering , Multiple Granularity of data items.
Recovery System :- Failure classification, storage structure, recovery and atomicity, log-based recovery
Security and protection : Role of DBA , File structure , table space , segments , User database, Data dictionary management , memory structure , process structure .

UNIT-IV (15)

Developing application software : Using Oracle products , SQL, PL/SQL
Advance techniques in databases : History of ODBMS, Concept of persistence, problems posed by persistent objects, RDBMS to solve persistent objects, designing object database, concept of ODBC, Introduction to parallel ,distributed databases

- Text Books/Reference Books:

1. Korth and Silderschutz - "Database systems concepts" (TMH)
2. C.J.Date - "Introduction to database systems" (Narosa)
3. Desai B. - "Introduction to database concepts"(Galgotia)
4. Ulman J.D. - "Principles of database systems" (Galgotia)
5. Oracle installation and user manual
6. Raghu Ramakrishna-"Database management system"

Department of Computer Science
Credit System Syllabus
Master of Computer Application
Semester -I
Paper-IV(CS1114): Mathematical Foundations

Unit 1: (15)

(a) Combinatorics: Permutations and combination and combination of distinct and non-distinct objects, Binomial coefficient and its applications. Pigeonhole principle, Generating functions for combinations, Enumerators for permutations, Distribution of distinct objects.

(b) Recurrence Relations and Solutions: Linear relations with two indices, Principles of inclusions & exclusions, Formula derangement, Restrictions on relative positions.

Unit 2: (15)

Relations and Functions : Elementary set theory, product sets, Relations, Properties and related algorithm, closures, Computer representation of sets, relations and digraph, manipulation.

Unit 3: (15)

(a) Functions: Types of function, functions for computer science, permutation functions and their manipulations.

(b) Order relations and structures : Partially ordered sets, Externals element of posets, Lattices and their properties, Finite Boolean algebras, Function on Boolean algebras.

Unit 4: (15)

(a) Mathematical Logic: Statements and notations, Connectives, Normal forms, Theory of inference for
Statement calculus, Predicate calculus, Inference theory of the predicate calculus.

(b) The application of residue arithmetic computers. Group codes, Definition and examples of algebraic. Structures, their applications to computer science.

Reference:

1. A.Doerr, Discrete Mathematics for Computer Science,(Galgotia-86).
2. Kolman B. Busby, Ross S.C.:Discrete Mathematical Structures for Computer Science, (Prentice Hall).
3.Olympia Nicodimi : Discrete Mathematics, (CBS publications and distributors)
4. Joshi K.D., Discrete Mathematics, (Wiely Eastern).
5. Liu C.L: Elements of Discrete Mathematics,(TMH).
6. S. Sahni, Concepts in Discrete Mathematics,(Camclot Publisher,USA).
7. Tremblay J.P. and Manohar, R:Discrete Mathematical Structures with applications to Computer Science.(McGraw-Hill book company)
8. Schaums series: Discrete Mathematics.

Department of Computer Science
Credit System Syllabus
Master of Computer Application
Semester -II
Paper-VI(CS1211): Computer Architecture

Unit-I (15 Hrs)

Basic Computer Organization and Design: Instruction codes, computer registers, computer instructions, timing and control, instruction cycle, memory-reference instructions, input-output and interrupt, complete computer descriptions, design of basic computer, design of accumulator logic.

Unit-II (15 Hrs)

Central Processing Unit: Introduction, General register organization, stack organization, instruction format, address modes, data transfer and manipulation, program control, reduced instruction set computer(RISC), Pipeline and vector processing: parallel processing, pipelining, arithmetic pipeline, instruction pipeline, RISC pipeline, vector processing, array processors.

Unit-III (15 Hrs)

Input-Output organization: Peripheral devices, input-output interface, asynchronous data transfer, modes of data transfer, priority interrupt, DMA, input-output processor, serial communications.

Unit-IV (15 Hrs)

Memory organization: memory hierarchy, main memory, auxiliary memory, associative memory, cache memory, virtual memory, memory management hardware, Multiprocessors: Characteristics of multiprocessors, interconnections structures.

References:

1) Computer System Architecture ----- M Morris Mano (Pearson Education)
2) Computer Architecture ---- William Stallings
3) Computer Architecture ----- Hwang Briggs
4) Computer Architecture and Organization ----- J P Hayes (MGH)
5) Computer System Architecture ------ Baer J L (Computer Science press)

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Semester -II
Paper-VII(CS1212): Object Oriented Technologies

Unit-I (15)

Introduction to Object Oriented Paradigms: Basic terminology and features. Skeleton of an Object Oriented Program - Creating and Using Classes and members, constructors, member initialization list, member wise assignment, efficiency considerations. Copy constructor and destructors. Constant objects and member functions, Static data members and functions, Friend Function, friend class , non member functions, this pointer, Dynamic memory allocation, Nested classes, Composition, introduction to Namespace.

Unit-II (15)

Operator overloading and user defined conversions – operator overloading fundamentals, Restrictions., overloading urinary & binary operators, overloading stream (<< & >>) operators, User defined Conversions.

Inheritance- defining a class hierarchy, Base class member access, Base and Derived class constructor, Object Slicing, public, private & protected inheritance, multilevel inheritance. Direct base classes & indirect base classes, Multiple inheritance.

Unit-III (15)

Virtual functions and Polymorphism- early and late binding, virtual table, virtual pointer, pure virtual functions, virtual base class, virtual inheritance, Run Time Type Identification. Generic Programming- overview, Function templates, Class templates, member templates, Specialization, overview of Standard Template

Library. Exception handling- keywords, basics of c++ exceptions, catching an exception, re-throwing an exception and stack unwinding.

Unit-IV (15)

Unified Modeling Language –history, views, diagrams, model elements, UML extensions, Use Case modeling - Dynamic modeling and real time modeling tools - Logical and physical architectures, component diagram deployment diagram, tagged values and properties, constraints and stereotypes, Relationships, Diagram and Case study.

References :

1.C++ Primer – Lippman
2.C++ How to program – Deitel & Deitel (Pearson Education)
3. A.L.Stevens - " C++ database development"
4. Mastering C++ - K.R.VenuGopal, Rajkumar, T. RaniShankar (TMG)
5. Effective C++ - Scott Meyers (Pearson Education)
6. Object Oriented Programming in C++ - R. Subburaj (Vikas Publication)
7. Rambaugh et.al. - " Object Oriented Modeling and Designing"
9. Grady Booch -"Object Orient Analysis and Design with applications"
10. Bajarne Stroustrup - "The C++ programming language"(Addison Wesley)

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Credit System Syllabus
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Semester -II
Paper-VIII (CS1213): Operating System

Unit – I: (15)

Operating System, System Calls, Operating System structure, Processes: Introduction, Interprocess communication, Classical IPC problems, Scheduling,

Unit – II: (15)

Input/output: Principles of I/O hardware , Principles of I/O software, Deadlocks, RAM Disk, Disk

Unit – III: (15)

Memory management: Basic memory management, Swapping, Virtual Memory, Page replacement algorithms. Design issues for Paging Systems, Segmentation

Unit – IV: (15)

File systems: Files, Directories, File system implementation, Security, Protection Mechanisms

References :-

a) Basic Reading :- 1.Tanenbaum A. S.: Modern Operating Systems, Pearson Education Aisa, First Indian reprint 2001

b) Additional Reading 1. Dhamdhare D. M. : System programming and Operating Systems, Tata McGraw Hill Publicing Co., New Delhi 1996.

c). Hansen P. B. : Operating System Principals, Prentice Hall Int. Inc

Department of Computer Science
Credit System Syllabus
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Semester -II
Paper-IX (CS1214): Numerical Methods

Unit-1: (15)

A) Interpolation :

Introduction and approximation, Forward and backward difference formula, Newton's divided difference formula, Lagrange's formula for interpolation, Hermite interpolation formula.

B) Numerical differentiation

Numerical differentiation using forward, backward & central difference formula.

B) Solution of system of linear algebraic equations :

Gauss-elimination method and pivoting, Gauss-Jordan method, Ill condition equations and refinements, LU decomposition, Doo-Little reduction, Newton Crouts method, Gauss-Siedel and Jacobi method.

Unit-2: (15)

A) Numerical integration

Newton Cotes quadrature formula, Romberg integration, Gauss-quadrature formula Legendre polynomial.

B) Solution of Differential equation :

Taylor series method, Euler's method, Graphical representation of Euler's method, Modified Euler's method, Improved Euler's method, Runge-Kutta second and fourth order method, Heun's method, Predictor and corrector methods---Milne's and Adams-Moulaton method.

Unit-3: (15)

Optimization techniques :

a) Introduction, LPP, To solve LPP by using Simplex method, Big-M method, Two-phase method, Duel Simplex method and Revised Simplex method.
b) Transportation problems : Initial basic feasible solution by North-West corner rule and VAM, Test for optimality by MODI method, Degeneracy
c) Assignment Problem : Assignment problem by Hungarian method.

Unit-4: (15)

Project Management: PERT and CPM, Introduction, Difference between PERT and CPM, construction of network, Critical path analysis, PERT analysis Project time-cost tradeoff Shortest route problem

References:

1) Theory and Problems in Numerical Methods by T Veerarajan, T Ramachandran
2) Numerical Methods by S Balachandra Rao , C K Shantha
3) Introductory Methods of Numerical Analysis by S S Sastry
4) Computer Oriented Numerical Analysis by R Roychoudhury

5) Computers and Numerical Methods by Balgurusamy
6) Computer Oriented Numerical Methods by V Rajaraman
7) Computer Based Numerical Algorithms by Krishnmoorthy E V and S K Senn
8) Operations Research by Kanti Swaroop
9) Operations Research by Taha H A
10) A course in Computer Programming with Numerical Techniques by Motewar S N
11) Operations Research --- J K Sharma

Shivaji University, Kolhapur
Department of Computer Science

Courses under CBCS for MCA

Odd Semester

Course Code	**Title of the Course**	Credits	Teaching Scheme (h/w)		Evaluation Scheme (marks)		
			L	P	CIE	SE	Total
CS1131 [MCA]	Computer Organization	4	4	-	20	80	100

Even Semester

Course Code	**Title of the Course**	Credits	Teaching Scheme (h/w)		Evaluation Scheme (marks)		
			L	P	CIE	SE	Total
CS1231 [MCA]	Web Designing	4	4	-	20	80	100

Department of Computer Science,
Shivaji University, Kolhapur.
A Course under Choice Based Credit System (CBCS)

- **Course code**: CS1131
- **Title of the course** :Computer Organization
- **Department at which course will be conducted**: Department of Computer Science, Shivaji University, Kolhapur.
- **Duration**: 15 weeks
- **Contact Session**: Theory 60 Hours
- **Credits**: 4
  (4 credit for 60 Theory hrs.)
- **Course Coordinator/Instructor**:
- **Eligibility**: Any Computer Graduate
- **Intake**: Min: (30) max.: (70)
- **Course Fee:** Rs. 3,000/- only for students of other departments
- Course offered during : Odd semester
- **Course Contents**:

Choice Based Credit System Syllabus
Master of Computer Application
Semester –I

COMPUTER ORGANIZATION

Unit – I: OVERVIEW OF REGISTER TRANSFER AND MCROOPERATIONS: Register Transfer Language, Register transfer, Bus and Memory transfer, Arithmetic Micro-operations, Logic Micro-operations, Shift Microoperations, Arithmatic Logic Shift Unit. BASIC COMPUTER ORGANIZATIONAND DESIGN : Instruction codes, Computer registers, computer instructions, Timing and Control, Instruction cycle, Memory-Reference Instructions, Input-output and interrupt, Complete computer description, Design of Basic computer, design of Accumulator Unit. **15 Lectures**

Unit – II: PROGRAMMING THE BASIC COMPUTER: Introduction, Machine Language, Assembly Language, the Assembler, Program loops, Programming Arithmetic and logic operations, subroutines, I-O Programming. . MICROPROGRAMMED CONTROL: Control Memory, Address sequencing, Microprogram Example, design of control Unit **15 Lectures**

Unit – III: CENTRAL PROCESSING UNIT: Introduction, General Register Organization, Stack Organization, Instruction format, Addressing Modes, data transfer and manipulation, Program Control, Reduced Instruction Set Computer (RISC) . PIPELINE AND VECTOR PROCESSING: Parallel Processing, Pipelining, Arithmetic Pipeline, Instruction, Pipeline, RISC Pipeline, Vector Processing, Array Processors **15 Lectures**

Unit – IV: COMPUTER ARITHMETIC: Introduction, Addition and subtraction, Multiplication and Division Algorithms, Floating Point Arithmetic, Decimal Arithmetic Unit and Operations **15 Lectures**

Reference Books:

1. Computer System Architecture : By M. Morris Mano.
2. Structured Computer Organization : By Tanenbaum
3. Computer Organization : By Stallings.
4. Computer Architecture and Organization : By Hayes.

Department of Computer Science,

Shivaji University, Kolhapur.
A Course under Choice Based Credit System (CBCS)

- **Course code**: CS2131
- **Title of the course** :Web Designing
- **Department at which course will be conducted** :Department of Computer Science, Shivaji University, Kolhapur.
- **Duration**: 8 weeks
- **Contact Session**: Theory 30 Hours and Practical: 24 Hours
- **Credits**: 4
  (2 credit for 30 Theory hrs. and 2 credit for 24 Practical hrs)
- **Course Coordinator/Instructor**:
- **Eligibility**: Any Graduate
- **Intake**: Min: (30) max.: (70)
- **Course Fee:** Rs. 3,000/- only for students of other departments
- **Course offered during** : Even semester
- **Course Contents**:

Choice Based Credit System Syllabus
Master of Computer Application
Semester –II

Web Designing

Unit 1: **(15 Lectures)**

Introduction to Internet: Definition of Internet – History of Internet - Packet Switching – Different types of Connections : Dial-up connection – ISDN – Advantages and Disadvantages – ASDL Connection – Advantages and Disadvantages – DSL – Leased Line – Satellite Connections - Modem - Cable Modem – Internet tools - Web server - Domain name - Search Engines –- Web browser – IP address – Versions (concepts only) – Internet Protocols – TCP/IP – FTP – HTTP – TelNet –WAIS

Unit 2: **(15 Lectures)**

Introduction to HTML: Introduction - Basic Tags of HTML - HTML Tag - TITLE Tag - BODY Tag ; Formatting of Text : Headers - Formatting Tags: BOLD, ITALICS,UNDERLINE, PARAGRAPH, TT, STRIKETHROUGH, EM, BR and HR tags - PRE Tag -FONT Tag - Special Characters - Working with Images - META Tag

Unit 3: **(15 Lectures)**

Advanced HTML: Links - Anchor tag – Lists - Unordered Lists - Ordered Lists – Definition Lists; Tables - TABLE, TR and TD Tags - Colspan and Rowspan; Frames: Frameset - FRAME Tag – Frame inside other frames – NOFRAMES Tag ; Forms : FORM and INPUT Tag - Text Box - Radio Button – Checkbox – SELECT Tag and Pull Down Lists : Hidden - Submit and Reset ; Some Special Tags: COLGROUP - THREAD, TBODY, TFOOT - _blank, _self,_parent, _top – IFRAME –LABEL - Attribute for <SELECT> - TEXTAREA

Unit 4: **(15 Lectures)**

CSS: Introduction – Features – Style Sheet basics - Working with CSS files – Syntax - Types of Style Sheets Inline Styles - Embedded Styles - External or Linked Styles

Formatting Text and Fonts: Font Families Font Size Kerning, Leading, and Indenting - Formatting Colors and Backgrounds: The Color Attribute The Background Attribute Background Colors and Images

Exploring CSS Class and ID Attributes: Defining the CSS Class Attribute – Defining the CSS ID Attribute - Dynamic effects with CSS - Lists- Tables – Forms - simple Examples using above properties.

Lab Exercises

Assignment HTML 1: Lab Exercises

The following exercises are designed to give you practice in writing HTML code and creating a web page. After completing the following exercises, give your trainer the disk with the files that you have created and saved.

Before starting this set of exercises you must understand the process of editing HTML. The most basic method is to use a simple word processor like Note Pad or Word Pad (found in the Windows Accessories group) or SimpleText for the Mac. Here's the drill:

1. Type your HTML code into the editor.
2. Save the file (you can do this at any point if you want to view your work). Remember where you save it to.
3. View your work by going to your WWW browser and choosing **Open File** from the **File** Menu and navigate to your saved html file to view it. When you go back to the editor to make more additions or changes, and then you come back to the browser, you don't need to re-open the page each time. Use the **Refresh** or **Reload** Button to get the most recent version of your file.
4. Tip: If you leave both the editor and browser open you can toggle back and forth between them using the **alt-tab** command or the program buttons on the task bar (PC only). On a Mac you will need to cascade the two windows.

Basic Tags: Lab Exercise

1. Create a simple HTML document about yourself or a topic of your choice using the basic tags learned in the first lesson. (Keep it simple for these exercises. You will be designing a "real" web page later.)
2. Save the document as an .htm file and remember where you saved it (name it yournamefile1.htm). If you are using a Mac, you should use the .html file extension.
3. Launch your WWW browser. If you are already in your web browser (reading this tutorial!), you may want to open a second browser window.
4. View your file in the browser by selecting **Open File** from the **File** menu. This may differ somewhat from browser to browser.
5. Add bold and italic words to your document, save and view.
6. Add a header to your document, save and view.
7. Add paragraph and break tags to your document, save and view.
8. Add a horizontal rule where appropriate, save and view.

Lists: Lab Exercise

1. Add an unordered list to your document, save and view.
2. Add an ordered list to your document, save and view.
3. Add a definition list to your document, save and view.

Links: Lab Exercise

1. Create a new file called *yournamefile2.htm* (it can be very basic).
2. Create a link to Yahoo (*http://www.yahoo.com*).

3. Create a link from *yournamefile2.htm* to *yournamefile1.htm.*

Images: Lab Exercise

1. Open one of your HTML files in your editor.
2. Add an image to your document using the tag, <IMG SRC="image.gif"> (Note**:** **image.gif** is a generic name. Your image may be **horse.gif** or **scenery.gif**. *Also, the image must be placed in the same directory or folder as your HTML file*. Although the image *can* be in another directory, the way to reference that image in your image tag isn't a part of this exercise). Save and view. You can obtain images in several ways:
    1. You can save any image off the Internet by clicking on the image (click and hold down on the Mac til the pop-up menu appears)(right-click for PC's) and saving it to disk. There are many free resources out there on the Internet that you can take advantage of. Note that many images are copyrighted and may not be freely used.
    2. You can scan an image and save it as a .gif or .jpg file with image editing software.
    3. You can create your own images with image editing software.
3. Align a short description to the bottom of you image, save and view.
4. Align the description to the top of the image, save and view.

Tables: Lab Exercise

1. Add a simple table to *yournamefile1.htm* without borders. Make the table with 2 rows and columns, save and view.
2. Add border value of 1, save and view.
3. Add a border value of 5, save and view.
4. Make the top row a table header, save and view.
5. Align all data elements to the middle of their cells, save and view.

Netscape Extensions: Lab Exercise

1. Center one of your headers in *yournamefile1.htm*, save and view.
2. Center your image, save and view.
3. Align the image to the right, save and view.
4. Put a border around the image with a value of 1; save and view each.
5. Add a horizontal rule that is aligned to the left, is 50% of the width of the page and has a size value of 5, save and view.
6. Give some text (non-header) a font size value of +3, save and view.
7. Put a background color and text color on your page. In order to do this you must obtain the hexadecimal value for the color you want to use. Click here to view colors and their

associated hexadecimal values. The hex values are at the top of each color swatch (a 6 digit alpha-numeric number). Just plug the value in at the appropriate place in your **Body** tag.

Back to Netscape Extensions tutorial

Assignment HTML 2: Your Personal Web Page

As a final exercise, try to put all of the HTML tags that you have learned to use by creating a real page; either a personal home page or something relating to your work or some other interest you have. Submit this web page to your trainer after saving it on a disk.

Optional

Once your page is complete, you must find a WWW server to host your page if you want anyone to be able to access it. Here are a few options:

1. You may have a personal web site that comes with your Internet account. You should ask your Internet Service Provider (ISP) how to place your page on this personal web site. It differs from one ISP to another.
2. You may have a web server at your place of work where you can post your page. Ask your system administrator if this is available to you.
3. You can rent space on a commercial web server. Most ISP's offer this service.

Editors

We have attempted to teach you some of the basic HTML tags in this tutorial. Many people don't feel that it is important to learn HTML code anymore, since there are many editors and document converters out there that don't require any knowledge of HTML. Our experience has been that even with these tools there are often times when you still need to edit the code to make things look right. There are four basic types of editors:

1. Basic text editors like Wordpad and SimpleText
2. HTML editors that provide many shortcuts to hand coding, but still basically work with HTML.
3. WYSIWYG (what you see is what you get) editors that add html code automatically.
4. Document converters that allow conversion of word processor documents and spreadsheets .

- **Examination**:
  Theory: 50 Marks (25 Objective Questions)
  Practical: 50 Marks
  Four Questions-30 Marks (Solve any two)
  Two Questions – 20 Marks (Solve any one)

- **Text Books/Reference Books**:

TEXT BOOKS

- Web Technology - N.P. Goplan, J.Akilandeswari
- Internet Technology and Web Design - ISRD Group
- HTML and Web designing - Kris Jamsa and Konrad King
- Ajax for Beginners - Ivon Bayross Sharanam Shah

REFERENCES

- Teach yourself Web Technologies - Ivan Bayross - Reprinted 2011 Second Edition
- Web Technology - Ramesh Bangia - Reprint 2008
- HTML for Beginners - Firuza Aibava- Second Edition
- Internet and Web Design - Ramesh Bangia, Firewall Media
- Web Design - Jenkins, Wiley India
- HTML and Web designing - Kris Jama and Konrad King, Tata McGraw Hill Publishing Ltd
- Using HTML 4, XML and Java 1.2 - Eric Ladd and Jin O' Donwell, Prentice Hall of India, New Delhi
- Web Technology and Design- C. Xavier, New Age International Publishers
- Java Server Pages-Ivan Bayross, Shroff publishers & Distributors Pvt Ltd, Delhi
- Teach yourself web Technologies - Ivon Bayross , BPB publications – 2002
- Web programming -Chris Bates, Wiley – Dreamtech India Pvt Ltd

- **Any other information**:

COMPUTER ROOM RULES
• No eating or drinking
• Any internet searching must be assigned and related to classroom assignments or your account will be disabled for 2 days for the first offense, 3 days for the second, and so on (this includes checking personal email). PLAYING GAMES IS NEVER TOLERATED!!!!!
• Do not download anything from the internet/email without approval from the teacher.