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॥ अंतरी पेटवू ज्ञानज्योत ॥

NORTH MAHARASHTRA UNIVERSITY, JALGAON.

Syllabus for S.Y.B.Sc.

INFORMATION TECHNOLOGY.

(W.e.f. Acd.Yr. 2002 - 2003)

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NORTH MAHARASHTRA UNIVERSITY, JALGAON.

Detailed Syllabus for S.Y.B.Sc.

(INFORMATION TECHNOLOGY)

(With effect from Acd. Yr. 2002 - 2003)

PAPER-I : TERM-I

Data Structure using STL-I

1. **Introduction -**
   Define D.S., Types of D.S. (Linear, non-linear, primitive, non-primitive).
   What is STL? STL Class Libraries. Define Iterator, container, Adaptors.

2. **Standard Containers of STL-**
   The Random access & Sequential containers, vectors, strings, lists.

3. **Doubly ended queues, stacks, sets, priority queues, maps.**
   (Detailed Discussion on each of the above standard containers)

PAPER-I : TERM-II

Data Structure using STL-II

4. **Searching Techniques -**
   Sequential, Binary and Interpolation search.

5. **Sorting Techniques -**
   Bubble, insertion and selection sort.

6. **Advance sorting Techniques -**
   Heapsort, mergsort and quicksort.

7. **Containers like Hash Tables, Graphs, Matrices, Files**
   (Above Techniques should be taught with respect to STL)

Reference Book :-

Data Structure in C++ using STL, Addision Wesley (1998), Timothy Budd.

Cont..2

PAPER-II : TERM-I

Web Scripting Languages-I

1. **Common Gateway Interface (CGI) Scripting-**
CGI overview, CGI Languages, CGI Methods-
GET, POST, HEAD. Interface specification-
Environment variables, Command line, Standard Input Output, Server specific, Client specific & Request specific, environment variables. Types of responses, headers.

2. **Introduction to perl**
Regular & associative arrays, regular expression, looping & conditional statements, file handling, subroutines, special variables, per commands

3. **The C++ GGI class libraries**
AHTML, Kelly Black's CGI C++-
classes, perl libraries :- CGI-Lib.

4. Designing CGI application, testing & debugging. Server Side Includes & Gateway, HTML forms and how to handle them, CGI security.

PAPER-II : TERM-II

Web Scripting Languages-II

5. **Introduction to Java script**
Basic declarations & expressions. Java script operations, Object and events, Arrays.

6. **Functions of Java script**
Time & Date, math & string functions.

7. **Objects of Java script**
Window, document, area, image, history, form, file upload, link, anchor, applet, layer, location, button, reset, submit, check box, radio, select, text, textarea, password.

References :-

1. James L. Mohler, Teach Yourself how to become a webmaster in 14 days. Techmedia publishers
2. Eric Herrmann, Teach Yourself CGI Programming with perl 1.5 in a week.

Cont..3

Lab. Course-I : Part-I

Data Structures using STL, CGI/Perl & Javascripts

Practicals based on Data Structures using STL

1. Implement using the vector data type the SOE method for prime numbers.
2. Write a program that demonstrate various operations on string data type.
3. Write a program to demonstrate various capabilities of list as a data structure.
4. Write a program that illustrates the use of Iterators.
5. Write a program that illustrates the application of stack & queue data types of STL.
6. Use the bit set data type to prime nos. using SOE method.
7. Write programs that demonstrates i) priority queues ii) maps.

Practicals based on CGI/Perl, Javascripts

1. Write CGI application that handles a basic form using the GET method
2. Write a CGI application that handles a basic form using the POST method.
3. Write program that returns the value of several environment variables.
4. Write program (s) that illustrate the following concepts in perl.
5. Regular & associative arrays.
6. Regular expression.
7. Looping & conditional statement.
8. Subroutines
9. Use of special variables.
10. Write a CGI program using perl that demonstrates file handling.
11. Write simple Javascript for the following-
    i) Basic declarations
    ii) Arrays
    iii) Looping & control structures
12. Write a Application that demonstrates the various function of Java script (Time, Date, Month, String)
13. Write application(s) that demonstrates various objects of the Java scripts object model.
14. Write a Application for shopping cart.
15. Write a Application for Discussion forms.

Cont..4

Lab. Course-I : Part-II

Data Structures STL, Lab, ASP

Practicals based on Data Structures using STL

1. Using STL implement the following searching techniques.
   i) Sequential search
   ii) Binary search
   iii) Interpolation search.
2. Using STL implement the following sorting techniques
   i) Bubble sort
   ii) Insertion sort
   iii) Selection sort
   iv) Heap sort
   v) Merge sort
   vi) Quick sort
3. Demonstrate the use of Hash Table.
4. Write a Program to implement DFS & BFS techniques for graph traversal.
5. Implement the Diskstra's Algorithm.
6. Implement the Floyd's Algorithm
7. Write program that demonstrates the use of matrices.
8. Write program that demonstrates File Handling.

Practicals based on ASP

1. Write a program in ASP to insert the data into the database table.
2. Write a program in Java script or VB script to do the validations on the form.
3. Write a program in ASP to modify and Delete the data in the database table.
4. Write a simple chart program in ASP.
5. Write a program in ASP to make the Add rotator component for the banner Advertisement.
6. Write a program in ASP to create Text file, to write and read the data using the text stream object.
7. Write a program of paging in ASP.
8. Write a Application in ASP to make Discussion form.
9. Make the voting facility in ASP for web site.
10. Make the search program in ASP for the static pages.
11. Make a guest Book & Shopping cart in ASP.

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