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॥ अंतरी पेटवु ज्ञानज्योत ॥



**NORTH MAHARASHTRA UNIVERSITY,
JALGAON.**

Syllabus for F.Y.B.Sc.

COMPUTER SCIENCE.

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

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NORTH MAHARASHTRA UNIVERSITY, JALGAON.

Syllabus for B.Sc. (Computer Sciences)

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

Class/Paper	First Term	Second Term
<u>F. Y. B. Sc.(CS)</u>		
PAPER-I	Essentials of Computer-I	Essentials of Computer – II
PAPER - II	C – Programming	C - Programming & OOPS
PAPER – III	Lab. on Windows, Ms-Office and Internet	Lab. on C Programming
<u>S.Y.B.Sc.(CS)</u>		
PAPER-I	Data and File structure – I	Data and File structure – II
PAPER - II	Programming in C++	Database Management Systems(DBMS)
PAPER – III	Lab. on Data and File structures and C++ Programming	Lab. on Data and File structures
<u>T.Y.B.Sc.(CS)</u>		
PAPER-I	Systems Programming-I	Systems Programming-II
PAPER-II	Visual Basic	LINUX Operating System
PAPER-III	Systems Analysis & Design	Management Information Systems (MIS)
PAPER-IV	Computer Aided Graphics	Theoretical Computer Science (TCS)
PAPER-V	Microprocessors	Computer Networks
PAPER-VI	Elective – A Oracle 8i	Developer 2000
	Elective – B JAVA Programming- I	JAVA Programming-II
PAPER-VII	Lab. on Systems Programming AND Computer Aided Graphics	Lab. on Systems Programming
PAPER-VIII	Lab. on Visual Basic AND Oracle 8i OR JAVA Programming	LINUX Operating System AND Developer 2000 OR JAVA Programming
PAPER-IX	Project worth 100 marks to be done throughout the year	

NORTH MAHARASHTRA UNIVERSITY, JALGAON.

DETAILED SYLLABUS FOR
F. Y. B. Sc. (COMPUTER SCIENCE)

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

PAPER - I : TERM - I

ESSENTIALS OF COMPUTER SCIENCE - I

1. **Introduction: -**
 - 1.1 History and Generation of Computers
 - 1.2 Block Diagram of Computer System
 - 1.3 Types of Computers (Micro, Mini, Mainframe, Super)
 - 1.4 Definitions:
Software, Hardware, Compiler, Interpreter

[8 L, 10 M]
2. **Applications of Computers**
 - 2.1 Engineering Applications
 - 2.2 Educational Applications
 - 2.3 Information Technology Applications
 - 2.4 Any other Applications

[8 L, 06 M]
3. **Memory Concepts**
 - 3.1 Concept of Memory Cell
 - 3.2 Types of memory (primary, secondary)
 - 3.2.1 Primary memory - RAM, ROM, PROM, EPROM, EAROM
 - 3.2.2 Secondary memory - Floppy Disk, Hard Disk, Magnetic Tape, CR - RW Zip drive
 - 3.3 Volatile and Nonvolatile memories.

[8 L, 10 M]
4. **Input Output Devices**
 - 4.1 Input Devices
 - 4.1.1. Keyboard, Mouse, OCR, Scanner etc.
 - 4.1.2. Printers, Plotters etc.

[5 L, 04 M]
5. **Algorithms and flowcharts**
 - 5.1 Definitions
 - 5.2 Symbols used for flowchart
(Solve at least 20 problems)

[8 L, 10 M]
6. **Internet fundamentals.**
 - 6.1 Brief History
 - 6.2 Internet fundamentals
 - 6.3 How Internet works?
 - 6.4 Getting connected to Internet
 - 6.5 Exploring WWW
 - 6.6 Use of Internet Explorer or Netscape Navigator
 - 6.7 E - mail and use of outlook Express

[8 L, 15 M]

Cont..2

PAPER - I : TERM - II

ESSENTIALS OF COMPUTER SCIENCE - II

1. Operating System Concepts :

- 1.1 Need of operating system
- 1.2 functions of operating system
- 1.3 Types of operating systems
(Single user, multi-user, Time sharing multitasking, real time batch)
- 1.4 Comparative study of various operating systems
(DOS, Windows 9x, Windows - NT, LINUX)

[12 L, 15 M]

2. DBMS Concept :

- 2.1 Introduction
- 2.2 Need of DBMS
- 2.3 Models
 - 2.3.1 Hierarchical model with tree structure Diagram
 - 2.3.2 Network model with Data structure Diagram
 - 2.3.3 Relational model.

[10 L, 08 M]

3. Network concepts :

- 3.1 Introduction to computer Networks
- 3.2 Advantages of Networks
- 3.3 Structure of communication Networks
- 3.4 Topologies (Bus, Star, Tree, Ring)
- 3.5 Transmission media (Wire - pair, co-axial, fiber optics)

[15 L, 17 M]

4. Programming Languages :

- 4.1 Classifications :
Machine code, Assembly language, Higher Level, Languages,
fourth generation languages, nonprocedural languages.

[8 L, 05 M]

Books :

- | | | |
|----|--------------------------|---------------------|
| 1. | Operating system | Peterson |
| 2. | DBMS | Henry Korth |
| 3. | Network | A. Tanenbaum |
| 4. | Fundamental of computers | V. Rajaraman |
| 5. | Computers Today | Sanderson. |
| 6. | Computes and commonsense | Hunt and shelly |
| 7. | Computers (Mc-Graw Hill) | Trainer T. & other. |

Cont.3

PAPER – II : TERM – I

PROGRAMMING IN C – I

1. **Introduction :**
History, Special features and application areas, structured programming approach & feature types, operators and expressions. Variable name, data types and sizes contents, declarations arithmetic operators, relational operators, logical operators, Bit wise operators, increment, decrement operators, assignment operator, compound assignment operator, conditional expression, special operators, precedence and order of evaluation.
[10 L, 12 M]
1. **Input – Output and control flow.**
Standard Input – output, formatted Input and Output statements.
Control flow: Statements and blocks, if – else –if, switch, break continue, goto loop: while, for, do – while, nesting of loops.
[12 L, 16 M]
2. **Functions and program structures.**
Basics, function with return value arguments (formal arguments, actual arguments local arguments), recursion-preprocessor, string function, & free().
[8 L, 10 M]
3. **Pointers and arrays :**
Pointers and address, pointers and function Argument, pointers and arrays, address and arithmetic, character pointers and function, multidimensional array, pointer to pointers, initialization of pointer array, command line argument, pointer to function.
[15 L, 16 M]

PAPER – II : TERM – II

PROGRAMMING IN C – II & OOPS

1. **Structure Union type def.**
Basic structure pointer to structure, netted structure, selfreferential structure, field union, typedef.
[8 L, 08 M]
2. **File handling :**
Sequential file handling expected to be covered, problems on file creation and access & some miscellaneous functions to be covered.
[12 L, 12 M]
3. **Graphics function :**
Circle(), ellipse (), arc(), imitgraph(), line().
[8 L, 08 M]
4. **Introduction to object oriented programming.**
Object oriented approach and features, overview of OOPs language, need of OOP
[8 L, 08 M]
5. **Basic concept of OOPS :**
Objects, classes, messages, abstract data types, data hiding, data encapsulation etc. Advance concepts, inheritance, dynamic binding polymorphism, OOPS paradigm, reusability, generality etc.
[10 L, 10 M]

PAPER - III : TERM - I

LAD on Windows, Ms-Office and Internet

1. Practical Based on Windows 9x
2. Practical Based on Ms- word (at least 5 practicals, out of - Two practicals based on mail merge)
3. Practical Based on Ms - Excel (at least 5 practicals)
4. Practical Based on Power point (at least 5 practicals)
(Note : - In all above practicals all the features of respective s/w package must be covered)
5. Practical Based on Internet.
 - a. Connecting to ISP
 - b. Surfing the web
 - c. Creating an E- mail account and sending E - mails, changing password of E - mail account. Chat using various messengers.

PAPER - III : TERM - II

Practical Based on C programming

- 1)
 - i) Find the compound and simple interest
 - ii) Check the no. is PALINDROME or not
- 2)
 - i) Roots of quadratic equation
 - ii) To print 20 terms of Fibonacci series.
- 3) Generate all prime nos. in the given range
- 4) Read given numbers in words (937- Nine Hundred Thirty Seven)
- 5) Sum of series (SIN, COS)
- 6) To find factorial of any number
- 7)
 - i) Matrix multiplication
 - ii) Matrix Transpose
- 8) Write a program in C to
 - i) Concatenate two strings
 - ii) Count the words in inputted sentence.
- 9) Write a program in C to store the names of ten students and marks in 3 subjects by each student in 2 - D array using pointers, sort the above array and display the merit list.
- 10) Write a program in C to create a file (use structure) with following structure :

Name	25 characters
Gross pay	65 digits
