Proposed Syllabus for
F.Y.B.Sc.(Computer Science)

North Maharashtra University, Jalgaon

F.Y.B.Sc.(Computer Science)

(w.e.f. June-2015)

Scheme Details

Examination Pattern : 40 Internal : 60 External

Periods : 45 Per Semester

Semester I		**Semester II**	
UG CS 111	Basics Of Computer	UG CS 121	Internet Computing
UG CS 112	C Programming -I	UG CS 122	C Programming -II
UG CS-103	LAB Course on Paper I&II	UG CS-203	LAB Course on Paper I&II

Note :-

1. Each period is of 48 minutes duration.
2. Each course is of THREE periods per week
3. Each practical is of four periods per week
4. For each paper 40 marks are for internal assessment and 60 marks are for external

North Maharashtra University, Jalgaon
F. Y. B. Sc. (Computer Science)
Syllabus for UG-CS 111: BASICS of Computer
Semester I

Unit - 1. Introduction to Computer **L:10 M:12**

1.1. Definition of computer ,Block Diagram of Computer, Types of computer

1.2. Input Devices : Keyboard, Mouse, Scanner

1.3. Output Devices : Monitor, Printer, Plotter

1.4. Memory : Primary Memory , RAM, ROM, EPROM, PROM,
Secondary Memory, Hard Disk, Pen Drive

1.5. Definition : Program, Hardware, Software: System Software, Application Software, Firmware, Interpreter, Compiler

1.6. Programming Languages: High level, Middle Level, Low Level, 4GL

Unit -2. Algorithm and Flowcharts **L:06 M:11**

2.1. Algorithm: Definition, Basic notation of algorithm

2.2. Flowcharts: Definition, Symbols of flow charts

2.3. Examples of algorithms and flowcharts

Unit -3. Concepts of Internet **L:08 M:12**

3.1. What is Computer Network?

3.2. Types of Networks : LAN , MAN, WAN

3.3. Use of Internet

3.4. Study of Web Browsers

3.5. Search Engines

3.6. Creating an E-mail Account , Sending & Receiving E-mail(with attachment)

Unit -4. Computer Virus **L:12 M:13**

4.1. Computer Virus : Indication of virus infection

4.2. Types of Viruses: Boot Sector Virus, Programs Virus, Macro Virus,
Multipartite Virus, Polymorphic Virus, Worms,
Malware: Spyware, Adware, Anti Virus

4.3. Computer Ethics: Hacking, Software Piracy, Spamming, Phishing

4.4 Measures to Computer Virus: Anti Virus Applications, Firewall,
Securing System

4.5. Steps to Ensure Safety

Unit -5. Operating System **L:09 M:12**

5.1. What is booting, POST, Bootstrap, Boot Drive.

5.2. Definition of operating system, functions of operating system

5.3. Dos: Introduction, Commands: Copy, Del, Ren, Md, Cd, Rd,erase, Dir, MKDir, Date and Time, Copycon

References:

1. Fundamentals of Computers : V. Rajaraman, PHI publication.
2. Computers and Commonsense : Roger Hunt and John Shelley, PHI publication
3. Fundamentals of Computers : Comdex computer course kit Wiley publication.
4. Operating System concepts : Peterson Silberschatz.
5. Computer Network : A. S.Tananbaum.

North Maharashtra University, Jalgaon

F. Y. B. Sc. (Computer Science)

Syllabus for UG-CS 121: C programming I

Semester I

Unit-1. Introduction **L:6 M:08**

1.1 Types of Programming languages

1.2 History

1.3 Features and applications

1.4 Structure of C-program

1.5 Compilation and Execution of C-Program

1.6 Debugging C program

Unit-2. Elements of C-Program **L:8 M:12**

2.1 Data Types and Qualifiers

2.2 Keywords, Identifiers, Variables, Declaration of variables

2.2 Constants and its types, constant declaration

2.3 Escape sequence characters, comments

2.4 Formatted and Unformatted Input Output statements

Unit- 3. Operators and Expression **L:8 M:10**

3.1 Operators – Assignment, Arithmetic, Relational, Logical, Bitwise, Increment-Decrement, Conditional Operator, Special Operator – Comma, Size-Of operator

3.2 Compound assignment

3.3 Precedence and order of evaluation.

3.4 Type modifier

3.5 Type Conversion

3.6 Library functions -abs(), pow(), sqrt(),

Unit- 4. Preprocessor **L:3 M:06**

4.1 Features

4.2 #defines and #include

4.3 Directives and Macros

Unit- 5. Control structure **L:12 M:12**

5.1 Conditional Statements

5.1.1 If Statement, if-else Statement, nested if-else Statement, if-else ladder,

5.1.2 switch Statement

5.2 break, continue, goto statements

5.3 Looping Concepts

5.3.1while, do-while, for Statements.

5.3.2 Nested loops Concept

Unit-6. Arrays **L:8 M:12**

6.1 Definition,

6.2 one-dimensional array, multidimensional array

6.3 Initialization of array.

6.4 Applications of array.

6.5 Advantages and Disadvantages of Array.

References :-

1. Programming with C – Byron Gottfried – Tata McGRAW-Hill
2. The C Programming Language – Brian W Kernighan and Dennis M Ritchie
3. Let us C – Yashwant P. Kanetkar, BPB publication.
4. Programming in C- E.Balguruswami
5. C programming in easy step – Wiley publication

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Practical's for UG-CS 103: Lab Course Paper I & II

Semester I

Part –A Lab course on Basics of Computer

1. Introduction to Computer, Input devices, Output devices , Booting – POST.
2. Installation of Software and operating system
3. Dos Commands
4. Introduction to web browsers
5. Creation of an e-mail account, sending and receiving emails with attachment
6. Searching information text, videos
7. How LAN work in laboratory, Sharing of Computer and printer in Network.

Part – B Lab Course on C Programming – I

1. Program using standard input output statements
2. Program using formatted input output statements
3. Program using various arithmetic operators
4. Program using control statement (if, if-else, if-else nesting ,switch)
5. Program using various loops(for, while ,do-while, nesting)
   (eg prime ,factorial, fibbonacci, Armstrong etc)
6. Program using 1-D arrays(eg:-sorting and searching)
7. Program using 2-D array(eg:-matrix multiplication operation)
8. Finding sum of diagonal element of matrix
9. Finding maximum element from Matrix

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Syllabus for UG-CS 121 -Internet Computing
Semester – II

Unit-1 Introduction to Website: **L:08 M:10**

1.1 Introduction

1.2 Site Types

1.3 Site Structure

1.4 Site Organization Model

1.5 Site Planning and Testing

Unit- 2 Web Design Process: **L:08 M:12**

2.1 What is Web Design?

2.2 Web Design Pyramid

2.3 Web Process Model

2.3.a Modified Waterfall Model

2.3.b Joint Application Development Model

Unit-3 Page Types and Navigation Theory: **L:06 M:12**

3.1 Page Types

3.2 Page Size and Margins

3.3 What is Navigation and types of Navigation?

Unit-4 Introduction to HTML Programming: **L:14 M:14**

4.1 Structure of HTML Document

4.2 Text Formatting Tags and Character Entity References

4.3 List Tags

4.4 Image and Anchor Tag

4.5 Table Tags

4.6 Frame and Form Tag with Form elements

4.7 Script Tags

Unit-5 Introduction to CSS **L:9 M:12**

5.1 What is CSS

5.2 Types of Style sheet (Internal, External, and Inline)

5.3 Syntax of CSS with Example

5.4 Selectors (class,ID,Group,Element)

References:-

1) The Complete reference –Web Design, Second Edition By Thomas A. Powell, TMH, ISBN-0-07-041186.

2) Internet in easy steps By Dremtech press.

3) How to become web master in 14 days By James L. Mohler, TechMedia.

4) HTML 4.0 By E.Stephen Mack & Janan Platt, BPB publication.

5) Web References www.w3c.org ,W3Schools.com

6) Teach yourself Vbscript in 21 days By Keith Brophy, SAMS publishing, ISBN-13:9781575211

North Maharashtra University, Jalgaon

F. Y. B. Sc. (Computer Science)

Syllabus for UG-CS 122: C programming II

Semester - II

Unit-1. Function **L:10 M:12**

1.1 Function Introduction and Needs

1.2 Declaration and Prototypes

1.3 Function calling (Call by value, call by reference)

1.4 Function with return

1.5 Function with argument

1.6 Recursion

1.7 Storage Class Specifiers

1.8 String Functions(strlen().strcat(),strcmp(),strrev(),strcpy())

Unit-2. Pointers **L:10 M:12**

2.1Introduction

2.2 Address and arguments,

2.3Declaration, accessing value through a pointer.

2.4 Address arithmetic, array and pointer.

2.5 Function and pointer, pointer to pointer.

2.6 Dynamic memory allocation and releasing dynamically allocated memory.

Unit-3. Structure and union **L:10 M:12**

3.1 Introduction. declaration and accessing.

3.2 Nested structure.

3.3 Self referential structure,

3.4 Array of structure.

3.5 Pointer to structure, bit fields

3.6 Introduction ,declaration

3.7 Typedef

3.8 Comparison of Structure and Union

Unit-4. **Graphics** **L: 5 M:12**

4.1 Introduction to Graphics in C

4.2 Initgraph(), putpixel(),line(),circle(),rectangle(),ellipse(),arc(), closegraph(),outtextxy(), setcolor(), setbgcolor(), bar()

Unit-5. **File handling in c language** **L:10 M:12**

5.1Concept of files, records, field,.

5.2 Accessing a files, various mode of file opening, closing files

5.3 Various Functions like: fprintf(),fscanf(),getc(),putc(),getw(),putw(), feof(), rewind(), fseek(), ftell(), fputs(),fgets().

5.4 Command line argument.

References :-

1. "C" Programming – Denis Ritchie.
2. Let us C – Yashwant P. Kanetkar,BPB publication.
3. Programming with C – Byron Gottfried – Tata McGRAW-Hill
4. Understanding pointers in "C" - Yashwant P. Kanetkar,BPB publication.
5. Programming in C-E.Balguruswami
6. C programming in easy step – Wiley publication

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Practical's for UG-CS 203: Lab Course on Paper I & II

Semester II

Part-A Lab Course on Internet Computing

1. Demonstration of the Basic Tags of HTML
2. Demonstrate the List Tags
3. Design Web Page showing information of your college using various text Formatting tags.
4. Design Web Page to create image gallery using image and link tags.
5. Design a web site on a theme_____ using frames.
6. Design online admission form using form tag and elements
7. Demonstration of CSS
8. Demonstration of class and ID Selectors

Part-B Lab Course on C Programming II

1. Program using function (call by value, call by reference, recursive)
2. Program using user define string function (at least two practical)
3. Program using pointers (arrays, functions, structures)
4. Program using structures (at least two practical)
5. Program using graphics function (at least two practical)
6. Simple program using file (to be cover all functions)
7. Program using files with structures
8. Program using command line argument