



॥ अस्तस्यै नमः ॥

EPARK NO: 9257 21237-91
FAX NO: 0277-252163
GRAM: UTTARODIYA

उत्तर महाराष्ट्र विद्यापीठ

NORTH MAHARASHTRA UNIVERSITY
P.B NO.: 80, LMAVNI NAGAR, JALGAON - 425 001 (M.S.)

Rs = 1 ३ ३३

परिपत्रक क्र. २६/२००९.

7

विषय :- प्रथमवर्ष विज्ञान (इन्फॉर्मेशन टेक्नॉलॉजी) साठी नॉर्मस्,
विषयाचे गट आणि अभ्यासक्रमाची प्रत पाठविणेबाबत.

उत्तर महाराष्ट्र विद्यापीठाच्या मा.अधिकाऱ मंडळाने घेतलेल्या निर्णयानुसार उत्तर महाराष्ट्र विद्यापीठाशी संलग्नित असलेल्या सर्व कला, विज्ञान आणि वाणिज्य महाविद्यालयांचे मा.प्राचार्य यांना विदित करण्यांत येते की, शैक्षणिक वर्ष २००९-२०१० पासून नविन सुरु होणाऱ्या प्रथमवर्ष विज्ञान (इन्फॉर्मेशन टेक्नॉलॉजी) साठी नॉर्मस्, विषयाचे गट आणि अभ्यासक्रम तयार करण्यात आला असून त्यास मान्यता देण्यांत आली असून त्याची प्रत सोबत आपणांस पाठविली आहे.


करिता; मा.प्राचार्य, कला, विज्ञान आणि वाणिज्य महाविद्यालय यांना विनंतीपूर्वक कळविण्यांत येते की, प्रथमवर्ष विज्ञान (इन्फॉर्मेशन टेक्नॉलॉजी) साठी नॉर्मस्, विषयाचे गट आणि अभ्यासक्रम आपल्या महाविद्यालयातील संबंधित प्राध्यापक तसेच विद्यार्थी यांच्या नजरेस आणून त्यानुसार विद्यार्थ्यांना योग्य ते मार्गदर्शन करावे ही विनंती.

कळावे,

संदर्भ क्र.समवि/१२/BS&IT/2346 /२००९.

दिनांक : १४.८.२००९

आपला विश्वासू,


उपकुलसचिव.
(प्रवेश/पात्रता विभाग)

सोबत :- वरीलप्रमाणे.

प्रत माहितीसाठी सादर :-

१. उत्तर महाराष्ट्र विद्यापीठाशी संलग्नित असलेल्या सर्व कला, विज्ञान आणि वाणिज्य महाविद्यालयांचे मा.प्राचार्य,
२. मा.अधिष्ठाता व सर्व सदस्य, विज्ञान विद्याशाखा, उ.म.वि., जळगांव.
३. मा.परीक्षा नियंत्रक, उ.म.वि., जळगांव.
४. मा.उपकुलसचिव, संलग्नता, परीक्षा-पूर्वार्ध/उत्तरार्ध विभाग, उ.म.वि., जळगांव.
५. मा.सहा.कुलसचिव, संलग्नता, परीक्षा-पूर्वार्ध/उत्तरार्ध, सभा व दफतर विभाग, उ.म.वि., जळगांव.
६. मा.सिवरटीम ऑनॅलिस्ट, उ.म.वि., जळगांव.



उत्तर महाराष्ट्र विद्यापीठ

NORTH MAHARASHTRA UNIVERSITY

P.B.NO.: 80, UMAVINAGAR, JALGAON - 425 001 (M.S.)

B.Sc. (Information Technology)

* Norms to Start F.Y.B.Sc. (I.T.)

Max intake to be given for F.Y.B.Sc. (I.T.) should not exceed 30 students.

Computing facility -

If the college already has the lab of 15 Computers then they should provide Min. 3 hours of lab time / student / week otherwise should purchase 15 Computers with 3 Dmp.

With internet connection on all 15 Computers.

Teaching Staff -

Qualification: M.Sc. (Computer Science) / M.Sc.(Information Tech.)/ M.C.A./ MCS/M.E.(Computers) /M.Tech.(Computers) with 55% marks (50% OBC/SC/ST/NT).

Library : I.T. Odiented Magazines at least 2 Books of related subjects (courses). Worth Rs.10,000 should be purchased.

Tuition Fees :

एह्.वाय.बी.एस्सी.	(आय.टी.) साठी	रु. २५००/-
एस्.वाय.बी.एस्सी.	(आय.टी.) साठी	रु. ३५००/-
टी.वाय.बी.एस्सी.	(आय.टी.) साठी	रु. ६०००/-

१) सत्तर अभ्यासक्रमासाठी महाविद्यालयात प्रत्यक्ष प्रत्येक विद्यार्थ्याला इंटरनेट वापरणेसाठी उपलब्ध होणे आवश्यक आहे.

२) तसेच प्रत्यक्ष महाविद्यालयाने कॉम्प्युटर लॅन करणे देखील आवश्यक आहे.

Groups : List attached, but Principal of college should give groups as per the convenience of the college & should not allow the student to take I.T. & Computer Science at a time.

NORTH MAHARASHTRA UNIVERSITY, JALGAON
(2001-2002)

Subject Groups for F.Y.B.Sc. with
Information Technology as one of the students.

Sr.No.	SUB.1	SUB.2	SUB.3	SUB.4
1	Info.Tech.	Physics	Electronics	Mathematics
2	Info.Tech.	Physics	Electronics	Statistics
3	Info.Tech.	Physics	Electronics	Geography
4	Info.Tech.	Physics	Electronics	Zoology
5	Info.Tech.	Physics	Electronics	Botany
6	Info.Tech.	Physics	Electronics	Chemistry
7	Info.Tech.	Physics	Electronics	Geology
8	Info.Tech.	Physics	Electronics	Microbiology
9	Info.Tech.	Physics	Electronics	Biochemistry
10	Info.Tech.	Physics	Mathematics	Statistics
11	Info.Tech.	Physics	Mathematics	Geography
12	Info.Tech.	Physics	Mathematics	Zoology
13	Info.Tech.	Physics	Mathematics	Botany
14	Info.Tech.	Physics	Mathematics	Chemistry
15	Info.Tech.	Physics	Mathematics	Geology
16	Info.Tech.	Physics	Mathematics	Microbiology
17	Info.Tech.	Physics	Mathematics	Biochemistry
18	Info.Tech.	Physics	Statistics	Geography
19	Info.Tech.	Physics	Statistics	Zoology
20	Info.Tech.	Physics	Statistics	Botany
21	Info.Tech.	Physics	Statistics	Chemistry
22	Info.Tech.	Physics	Statistics	Geology
23	Info.Tech.	Physics	Statistics	Microbiology
24	Info.Tech.	Physics	Statistics	Biochemistry
25	Info.Tech.	Physics	Geography	Zoology
26	Info.Tech.	Physics	Geography	Botany
27	Info.Tech.	Physics	Geography	Chemistry
28	Info.Tech.	Physics	Geography	Geology
29	Info.Tech.	Physics	Geography	Microbiology
30	Info.Tech.	Physics	Geography	Biochemistry
31	Info.Tech.	Physics	Zoology	Botany
32	Info.Tech.	Physics	Zoology	Chemistry
33	Info.Tech.	Physics	Zoology	Geology
34	Info.Tech.	Physics	Zoology	Microbiology
35	Info.Tech.	Physics	Zoology	Biochemistry
36	Info.Tech.	Physics	Botany	Chemistry
37	Info.Tech.	Physics	Botany	Geology
38	Info.Tech.	Physics	Botany	Microbiology
39	Info.Tech.	Physics	Botany	Biochemistry
40	Info.Tech.	Physics	Chemistry	Geology
41	Info.Tech.	Physics	Chemistry	Microbiology
42	Info.Tech.	Physics	Chemistry	Biochemistry
43	Info.Tech.	Physics	Geology	Microbiology

44	Info. Tech.	Physics	Geology	Biochemistry
45	Info. Tech.	Physics	Microbiology	Biochemistry
46	Info. Tech.	Electronics	Mathematics	Statistics
47	Info. Tech.	Electronics	Mathematics	Geography
48	Info. Tech.	Electronics	Mathematics	Zoology
49	Info. Tech.	Electronics	Mathematics	Botany
50	Info. Tech.	Electronics	Mathematics	Chemistry
51	Info. Tech.	Electronics	Mathematics	Geology
52	Info. Tech.	Electronics	Mathematics	Microbiology
53	Info. Tech.	Electronics	Mathematics	Biochemistry
54	Info. Tech.	Electronics	Statistics	Geography
55	Info. Tech.	Electronics	Statistics	Zoology
56	Info. Tech.	Electronics	Statistics	Botany
57	Info. Tech.	Electronics	Statistics	Chemistry
58	Info. Tech.	Electronics	Statistics	Geology
59	Info. Tech.	Electronics	Statistics	Microbiology
60	Info. Tech.	Electronics	Statistics	Biochemistry
61	Info. Tech.	Electronics	Geography	Zoology
62	Info. Tech.	Electronics	Geography	Botany
63	Info. Tech.	Electronics	Geography	Chemistry
64	Info. Tech.	Electronics	Geography	Geology
65	Info. Tech.	Electronics	Geography	Microbiology
66	Info. Tech.	Electronics	Geography	Biochemistry
67	Info. Tech.	Electronics	Zoology	Botany
68	Info. Tech.	Electronics	Zoology	Chemistry
69	Info. Tech.	Electronics	Zoology	Geology
70	Info. Tech.	Electronics	Zoology	Microbiology
71	Info. Tech.	Electronics	Zoology	Biochemistry
72	Info. Tech.	Electronics	Botany	Chemistry
73	Info. Tech.	Electronics	Botany	Geology
74	Info. Tech.	Electronics	Botany	Microbiology
75	Info. Tech.	Electronics	Botany	Biochemistry
76	Info. Tech.	Electronics	Chemistry	Geology
77	Info. Tech.	Electronics	Chemistry	Microbiology
78	Info. Tech.	Electronics	Chemistry	Biochemistry
79	Info. Tech.	Electronics	Geology	Microbiology
80	Info. Tech.	Electronics	Geology	Biochemistry
81	Info. Tech.	Electronics	Microbiology	Biochemistry
82	Info. Tech.	Mathematics	Statistics	Geography
83	Info. Tech.	Mathematics	Statistics	Zoology
84	Info. Tech.	Mathematics	Statistics	Botany
85	Info. Tech.	Mathematics	Statistics	Chemistry
86	Info. Tech.	Mathematics	Statistics	Geology
87	Info. Tech.	Mathematics	Statistics	Microbiology
88	Info. Tech.	Mathematics	Statistics	Biochemistry

89	Info. Tech.	Mathematics	Geography	Zoology
90	Info. Tech.	Mathematics	Geography	Botany
91	Info. Tech.	Mathematics	Geography	Chemistry
92	Info. Tech.	Mathematics	Geography	Geology
93	Info. Tech.	Mathematics	Geography	Microbiology
94	Info. Tech.	Mathematics	Geography	Biochemistry
95	Info. Tech.	Mathematics	Zoology	Botany
96	Info. Tech.	Mathematics	Zoology	Chemistry
97	Info. Tech.	Mathematics	Zoology	Geology
98	Info. Tech.	Mathematics	Zoology	Microbiology
99	Info. Tech.	Mathematics	Zoology	Biochemistry
100	Info. Tech.	Mathematics	Botany	Chemistry
101	Info. Tech.	Mathematics	Botany	Geology
102	Info. Tech.	Mathematics	Botany	Microbiology
103	Info. Tech.	Mathematics	Botany	Biochemistry
104	Info. Tech.	Mathematics	Chemistry	Geology
105	Info. Tech.	Mathematics	Chemistry	Microbiology
106	Info. Tech.	Mathematics	Chemistry	Biochemistry
107	Info. Tech.	Mathematics	Geology	Microbiology
108	Info. Tech.	Mathematics	Geology	Biochemistry
109	Info. Tech.	Mathematics	Microbiology	Biochemistry
110	Info. Tech.	Statistics	Geography	Zoology
111	Info. Tech.	Statistics	Geography	Botany
112	Info. Tech.	Statistics	Geography	Chemistry
113	Info. Tech.	Statistics	Geography	Geology
114	Info. Tech.	Statistics	Geography	Microbiology
115	Info. Tech.	Statistics	Geography	Biochemistry
116	Info. Tech.	Statistics	Zoology	Botany
117	Info. Tech.	Statistics	Zoology	Chemistry
118	Info. Tech.	Statistics	Zoology	Geology
119	Info. Tech.	Statistics	Zoology	Microbiology
120	Info. Tech.	Statistics	Zoology	Biochemistry
121	Info. Tech.	Statistics	Botany	Chemistry
122	Info. Tech.	Statistics	Botany	Geology
123	Info. Tech.	Statistics	Botany	Microbiology
124	Info. Tech.	Statistics	Botany	Biochemistry
125	Info. Tech.	Statistics	Chemistry	Geology
126	Info. Tech.	Statistics	Chemistry	Microbiology
127	Info. Tech.	Statistics	Chemistry	Biochemistry
128	Info. Tech.	Statistics	Geology	Microbiology
129	Info. Tech.	Statistics	Geology	Biochemistry
130	Info. Tech.	Statistics	Microbiology	Biochemistry1
131	Info. Tech.	Geography	Zoology	Botany
132	Info. Tech.	Geography	Zoology	Chemistry
133	Info. Tech.	Geography	Zoology	Geology
134	Info. Tech.	Geography	Zoology	Microbiology
135	Info. Tech.	Geography	Zoology	Biochemistry

136	Info. Tech	Geography	Botany	Chemistrey
137	Info. Tech	Geography	Botany	Geology
138	Info. Tech.	Geography	Botany	Microbiology
139	Info. Tech	Geography	Botany	Biochemistry
140	Info. Tech	Geography	Chemistry	Geology
141	Info. Tech.	Geography	Chemistry	Microbiology
142	Info. Tech	Geography	Chemistry	Biochemistry
143	Info. Tech.	Geography	Geology	Microbiology
144	Info. Tech	Geography	Geology	Biochemistry
145	Info. Tech	Geography	Microbiology	Biochemistry
146	Info. Tech	Zoology	Botany	Chemistry
147	Info. Tech	Zoology	Botany	Geology
148	Info. Tech.	Zoology	Botany	Microciology
149	Info. Tech.	Zoology	Botany	Biochemistry
150	Info. Tech	Zoology	Chemistry	Geology
151	Info. Tech.	Zoology	Chemistry	Microbiology
152	Info. Tech.	Zoology	Chemistry	Biochemistry
153	Info. Tech.	Zoology	Geology	Microbiology
154	Info. Tech.	Zoology	Geology	Biochemistry
155	Info. Tech	Zoology	Microbiology	Biochemistry
156	Info. Tech.	Botany	Chemistry	Geology
157	Info. Tech.	Botany	Chemistry	Microbiology
158	Info. Tech.	Botany	Chemistry	Biochemistry
159	Info. Tech.	Botany	Geology	Microbiology
160	Info. Tech.	Botany	Geology	Biochemistry
161	Info. Tech.	Botany	Microbiology	Biochemistry
162	Info. Tech.	Chemistry	Geology	Microbiology
163	Info. Tech.	Chemistry	Geology	Biochemistry
164	Info. Tech.	Chemistry	Microbiology	Biochemistry
165	Info. Tech.	Geology	Microbiology	Biochemistry

॥ अंतरी पेट्यु ज्ञानज्योत ॥



North Maharashtra University,
Jalgaon

Syllabus for F.Y. B.Sc.

Information Technology

w.e.f. July, 2001

NORTH MAHARASHTRA UNIVERSITY, JALGAON.
SYLLABUS FOR F. Y. B. Sc. (IT)
(With Effect From July, 2001)

Class/ Paper	Part - I	Part - II
F. Y. B. Sc. (IT)		
Paper-I	Introduction to Information Technology - I	Introduction to Information Technology-II
Paper-II	Object Oriented Analysis & Design	Programming in C++
Lab Course - I	Lab Course on Internet, Web Designing & HTML	Lab Course on C++
S. Y. B. Sc. (IT)		
Paper-I	Data structures Using STL- I	Data structures Using STL-II
Paper - II	Web scripting Languages-I	Web scripting Languages-II
Lab Course -I	Data Structures STL Lab, CGI/Perl, JAVA scripting	Data Structures STL Lab, Active Server Pages (ASP),
T. Y. B. Sc. (IT)		
Paper I	DBMS	Internet computing
Paper II	System Programming	Operating System
Paper III	Data Communication	Computer Networks
Paper IV	JAVA Programming - I	JAVA Programming- II
Paper V	System Analysis & Design	Software Engineering
Paper VI	Visual Computing - I	Visual Computing - II
Lab Course I	Java Programming Lab	Internet & Java Programming Lab
Lab Course-II	Visual computing-I Lab	Visual computing-II Lab
Lab Course-III	Project(for full year)	

NORTH MAHARASHTRA UNIVERSITY, JALGAON.
SYLLABUS FOR F. Y. B. Sc (Information Technology)
(With Effect From July, 2001)
PART - I

Paper - I:

Introduction to IT-I

Introduction to MS-OFFICE: Installing MS office, The office manager, sharing information with Microsoft Office, the clip board, Alternatives to the clipboard, using the clipboard to cut copy, paste the clipboard viewer, OLE, editing linked and embedded objects.

Word Processing with WORD: Word Basics Undo, Redo, Repeat, Inserting, replacing, formatting, copying and pasting text from one word document to another Printing, Autoformat.

Working with Headers, Footers And Footnotes: Tabs, Tables and sorting, Converting Text to Tables and vice versa Sorting, working with graphics, Importing Graphics, Sizing and cropping graphics with picture command, using word's drawing features, drawing objects, callcuts, filling, wizards, sample documents, Writer's tools, typing symbols and special bulleted list commands, Spellcheck, autocorrect, autotext, grammar checker, Word count and other statistics, table of contents, creating an index, macros, Introduction to Mail-merge.

EXCEL Basics:

Starting Excel. What is Work Book and Sheet ? Creating & Opening Workbook closing & exiting a Workbook. Rename a workbook, Entering & Editing information, Saving a Workbook, Moving within the workbook, Selecting data range, Formatting cells (text aligning the text, rotate the text, appearance of a cell, changing the height & width of rows, & columns, Inserting deleting, Clearing Cells, Rows & Columns, Visibility of rows and column, Using Auto fill to generate various types of data series, Copying Moving, Deleting Sheets, Getting familiar with wizards, Applying various readymade templates, Creating your own templates, Creating & Editing a Formula with and without function, Working with Names, Creating Charts (Adding Data Label, Titles, Changing Colors, Patterns, Borders, Chart types), Inserting, Deleting and formatting Graphics, Auto formatting, Conditional Formatting, Auto correct, Goal seek, Creating Scenarios, Auditing, Sorting of Information, Spell check a workbook, to send a workbook using email, Create & Remove a page break, Reverse the last action perform Using Filter and Advanced Filters, Validation, Taking Time, Sum Average, If Data base Functions (Dcount, Daverage, Dmax, Dmin, Dsum), Financial Functions (PMT, NPER, NPV), Setting and Resetting the print Area, Configuring the Printer, Printing of Workbook, Assignments.

An Introduction To Function: Parts of a function, functions requiring add-ins, the function wizard, examples of functions by category, error message from functions, Excel's Chart features, chart parts and terminology, instant charts with the chart wizards, creating, rotating, deleting charts, setting the default chart type, Working with graphics with Excel, creating and placing graphic objects, resizing, positioning graphics, drawing lines and shapes, Example of graphics in Excel, Sources of graphics in Excel, Excel slide show, Excel Command macros, using worksheet as database, sorting excel database, cross tabulating DB. Automating What-if projects, organizational tips, scenario manager, finding the right number with solver, editing and troubleshooting worksheets, using the infor-window to find errors, using the auditing commands to troubleshoot.

Internet:

Introduction to InterNet: History, working of Internet, Use & applications of Internet. Study of Web Browsers: IE (latest version), Netscape Navigator(latest version), Search engines, chatting, Online messenger services(YAHOO, MSN Messenger, AOL) email, newsgroups, FTP- detail discussion.

HTML:

History of HTML, Web Page Design Issues, HTML document representation, character encoding set, HTML elements, attributes, entity references (numeric, character), Structure of HTML document, discuss all block level tags, text level tags, linking tags, images maps, tables, frames, forms.

References:

1. **HTML for the world wide web, Castro, ISBN-81780532, AWL Pvt Ltd.**
2. **HTML: No experience required.**
3. **SAMS Teach your self: Microsoft Office 2000 in 24 Hours**
4. **Microsoft office 2000, Sagman, ISBN-98/235 9052, WL Private Ltd.**
5. **Office 2000: The complete reference, Nelson, 2000, TMH.**

Paper- I

Introduction to IT-II

Introduction

Internet fundamentals and web browsers. Scripting Languages, Client-Side and Server-Side Scripting .

Introduction to VBScript

Constants, Variables and Data types, Mathematical Operations, Processing Arrays and Collections, Looping and Decision Structures, Relational and Logical Operators, CASE Statement.

VBScript Functions and Objects

Data Conversion Functions, Mathematical Functions, Data Formatting functions, Text Manipulation Functions, Date and Time Functions, Built in Objects.

Introduction to ASP

What is ASP? . Comparison with HTML and VBscript, ASP and SSI Directives, #config, #echo, #exec, #lastmod, #size, #include etc.. Modular ASP code.

Web Applications

Objects, Properties, Methods and events, ASP Object Model , Study of Response, Request, Application , Session and Server Objects, Error Handling.

Scripting Objects

Dictionary FileSystemObject and Collections, Displaying file and folder information. Opening files, TextStream Object.

SQL and Databases

Review of Database Concepts. Creating a simple database using MS-Access, Data Access Basics, Querying Databases with SQL ,SELECT Statement ,INSERT Statement ,UPDATE Statement ,DELETE Statement ,Data Source Name (DSN), Using ADO .Connection Object ,Recordset Object .Paging through Recordsets

ASP Components

Creating Instance of a Component. Ad Rotator Component, Content Linking Component, Browser Capabilities Component

ASP and E-Commerce

Using Browser Capabilities . Component Processing Cookies . Counting page hits

Discussions on

Web Servers : Personal Web Server, JWS, Apache, IIS etc

Net Applications : Implementation details of Shopping Cart, Guest Book, Discussion Forum, On line Chat . On line results etc.

References

1. **ASP 3 Programming Bible**, Eric A. Smith, IDG Books India, 2000, ISBN 81-265-0049-2.
2. **Beginning Active Server Pages 3.0**, David Buser etc., Wrox Press Ltd, 1999, ISBN 81-7366-149-9

Paper-II

Object Oriented Analysis & Design

Object Modeling: Objects & classes, Links & associations, Generalization and inheritance, Grouping constructs, Aggregation, Generalization as extension and restriction, Multiple inheritance, Meta data candidate keys. Dynamic modeling: Events & states Nesting. Concurrency. Functional modeling: Data flow diagrams Specifying operation.

Analysis Object modeling, Dynamic modeling, functional modeling, adding operations.

System Design: Subsystems, Concurrency, Allocation to processors and tasks Management of data stores, Control implementation, boundary condition Architectural frameworks. Object design, Optimization, Implementation of Control. Adjustment of inheritance, Design of association, Documentation, Comparison of methodologies.

Implementation: Using a programming language, a database system, programming styles, reusability, extensibility, robustness, programming in the large, case study.

Introducing UML (Unified Modeling Language):

Components of UML : Class diagram, Object diagram, Component diagram, Use case diagram, Activity diagram etc.

Using UML : Object orientation, Modeling classes and working with relationships in UML.

References:

1. Booch G. "Object Oriented Analysis and Design", 2nd edition, Beramin/Cummins Publishing Co.
2. Reera Wirts-Brock, et.al, "Designing Object Oriented Software", Prentice Hall of India.
3. Rumbaugh J. Et al "Object Oriented Modeling and Design". Prentice Hall of India.
4. Sams Teach yourself UML in 24 Hours.

Part-II

Paper II :

Programming in C++

- 1. Introduction to C++:** Features, Applications, Structure of C++ program, Class, Object, Interface & implementation, members, methods, member functions, outside member functions as inline, data hiding.
- 2. Data types, Operators, expressions and Control Structures:** Character set, keywords, tokens, identifiers, variables & constants, data types, operators (arithmetic, relational, logical, bit wise, compound assignment, increment & decrement, conditional, special operators like scope resolution, member dereferencing, memory management, type cast operators), operator precedence & associativity, manipulators, operator overloading, expression & qualifiers, different control structures.
- 3. Arrays and strings:** operations on arrays, multidimensional, strings manipulations, arrays of strings.
- 4. Use of Functions:** Function components, parameter passing by value & reference, return by reference, default argument, inline functions, function overloading, function templates, arrays & functions scope & extent of variables, functions with variable no. of arguments, recursive functions. Use of structure of Unions.
- 5. Pointers and Runtime binding:**
Pointer variables, address operator & runtime memory management, pointers to pointers, arrays of pointers, pointers to functions & structures, constant pointer, pointer constant, pointer arithmetic, this pointer, dynamic memory allocation.
More about classes and objects:
Constructs, destructors, constructor overloading, default constructor, copy constructor, passing objects as arguments, returning objects from functions, friend function & classes, structures & classes
Inheritance: derived class, forms of inheritance, member accessibility, constructor & destructor, overloaded member functions, abstract classes multilevel, multiple, hierarchical inheritance
Streams computation with console & files, About exception handling.

Lab Course -I

Laboratory Assignments:

MS-Office (MS-Word, MS-Excel, MS-PowerPoint)

Practicals based on MS-Word

These assignments should cover all most all the features of MS-Word covered in the Theory syllabus

Practicals based on MS-Excel

These assignments should cover all most all the features of MS-Excel covered in the Theory syllabus

Practicals based on MS-PowerPoint

These assignments should cover all most all the features of MS-PowerPoint covered in the Theory syllabus

Internet Surfing:

1. Setting up an Internet A/c(dial up connection)
2. Email:
 - a. Creation of an E-mail a/c, sending & receiving mails
 - b. Sending attachments, maintaining folders, bcc, cc, block junk mails, changing password and profile
3. WWW:
 - a. Understanding URL
 - b. Visiting websites
 - c. Downloading files with FTP, Saving images, setting them as wall paper
4. Chatting
 - a. Create chat ID
 - b. Participating chat rooms, discussion forums
 - c. Online messaging

HTML

1) Create a HTML Page(s) to demonstrate use of:

1. Internal Links
2. External Links
3. Use of Images
4. Various types of lists.

2) Create a HTML Page to demonstrate use of:

1. Logical styles such as bold, italics, emphasis, address, pre-formatted text
2. External Links.
3. Character entity reference characters (any 2)
4. Various types of lists.

3) Create HTML Page(s) to demonstrate use of linking using image map. The image map should contain at least 5 images.

4) Create a HTML page to demonstrate use of

1. Animated Images & text
2. Scrolling text
3. Static background
Paragraph and Division

5) Create a HTML page for calendar of the current month. The calendar should contain a Photograph at the beginning. Make use of appropriate colors for dates, advertisement(s) at the bottom.

6) Create HTML page that shows the year wise statement of sale & revenue, split in to quarterly sale for 5 products of your choice. Page should also contain the logo for the company.

7) Create a HTML page to demonstrate use of frames.

The page should contain appropriate number of frames to demonstrate followings: Left pane should contain at least 3 shows the names of product. Which when selected should show the information about the products in the right pane. Try to make your pages as appealing and attractive as possible with the use of various formatting elements.

The top pane should contain advertisements the bottom pane should contain a running flash line.

8) Create a HTML page that contains a table with images (at least 9). When clicked on a image it should display the description of the image in the new window. Table should be properly formatted. Images should have tooltips.

9) Create a HTML page to demonstrate use of frames.

The page should contain appropriate number of frames to demonstrate followings: Left pane should contain at least 3 shows the names of product. Which when selected should show the information about the products in the right pane. Try to make your pages as appealing and attractive as possible with the use of various formatting elements.

The top pane should contain advertisements the bottom pane should contain a running flash line.

Part-II

Lab Course - I

Laboratory Assignments:

1. Write program/s to implement concept of polymorphism – operator overloading.
2. Write program/s to implement function overloading.
3. Write program to implement recursion.
4. Write program that uses dynamic memory allocation.
5. Write program/s to implement concept of Inheritance (for all forms of inheritance that known)
6. Write a program to implement use of friend function.
7. Write a program to implement use of friend class.
8. Write program/s to show different methods of object initialization and cleanup (constructors, destructors, parameterized constructor, copy constructor, dynamic initialization through constructors)
9. Write program/s that uses console I/O operations that you know.

References:

1. Object Oriented programming using with C++ : Balagurusamy
2. Programming in C++ : VijayMukhi
3. Mastering C++: K.R. Venugopal, Rajkumar, T Ravishankar

