

SYLLABI FOR
ALL OTHER UG, PG AND DIPLOMA
PROGRAMMES
(Revised in the BoS held on 07/06/2014)



Department of Computer Science & Applications
Gandhigram Rural Institute - Deemed University
Gandhigram-624 302.
Dindigul District
Tamil Nadu
India.

Programme		Course
Diploma	Textile Technology	Introduction to Computers and Office Automation
UG Programmes	UG	Introduction to Computers and Office Automation
	B.Com	E-Commerce
	IDE	Information Technology
PG Diploma	Sanitary Inspector Commercial Horticulture	Web Programming
PG Programmes	PG(Social Sciences)	Introduction to Computers and SPSS
	PG (Science)	Web Programming
	MDA - I	Computer Fundamentals and Office Automation
	MDA –II	Internet and Web Technology
	MDA - III	Fundamentals of Statistics and SPSS
	M.Sc Chemistry	Applications of Computers in Chemistry
	IDE	1. Java Programming
		2. E- Commerce

**INTRODUCTION TO COMPUTERS AND OFFICE
AUTOMATION
(Theory and Practical)**

(For all UG and Diploma Programme)

(2 +1 Credit)

- UNIT I:** Definition of a computer - Computer terminologies - Anatomy of a computer - Generations of computers - Types of computers.
- UNIT II:** Input devices - Output devices - Storage devices - Source data entry devices.
- UNIT III:** MS-Word: Introduction - features - Document creation - Document editing: cursor movements - selecting text - copying text - moving text - finding and replacing text - Spelling and Grammar - Page setup - Mail Merge - Table creation.
- UNIT IV:** MS-Excel : Introduction - Advantages & applications - Organization of workbook - Editing a worksheet - Range - Formatting worksheet - Chart: creation - changing type - Print options - Built-in functions.
- UNIT V:** MS-Power Point: Introduction - features - creating presentation - viewing - saving and close presentation - Changing Layout - Changing Designs - Slide transition - Adding animation effects - inserting table, charts, pictures, clipart in presentation.

Reference Books:

1. Fundamentals of Information Technology, S.K.Bansal, A.P.H. Publishing company, New Delhi, 2002.
2. 2007 Microsoft Office System step by step, Joyce Cox, Joan Preppernau, Steve Lambert and Curtis Frye, 2007

COMPUTER FUNDAMENTALS AND OFFICE AUTOMATION (Theory and Practical)

For MDA Programme - I Semester (3 +1 Credit)

UNIT I: Definition of a computer - Computer terminologies - Anatomy of a computer - Generations of computers - Types of computers - Types of operating system - Types of programming languages - assembler - translator - compiler – cross compiler

UNIT II: Input devices - Output devices - Storage devices - Source data entry devices.

UNIT III: MS-Word: Introduction - features - Document creation - Document editing: cursor movements - selecting text - copying text - moving text - finding and replacing text - Spelling and Grammar - Page setup - Mail Merge - Table creation.

UNIT IV: MS-Excel : Introduction - Advantages & applications - Organization of workbook - Editing a worksheet - Range - Formatting worksheet - Chart: creation - changing type - Print options - Built-in functions.

UNIT V: MS-Power Point: Introduction - features - creating presentation - viewing - saving and close presentation - Changing Layout - Changing Designs - Slide transition - Adding animation effects - inserting table, charts, pictures, clipart in presentation.

Reference Books:

1. Fundamentals of Information Technology, S.K.Bansal, A.P.H. Publishing company, New Delhi, 2002.
2. 2007 Microsoft Office System step by step, Joyce Cox, Joan Preppernau, Steve Lambert and Curtis Frye, 2007

E-COMMERCE - (4 Credit) (Theory)

FOR B.COM Programme - VI Semester

UNIT I: E-Commerce - The revolution is just beginning - What is E-commerce - Difference between E-commerce and E-business - why study E-commerce – Seven unique features of E-commerce technology - Types of E-commerce - E-commerce I and II - Understanding E-commerce organizing themes

UNIT II: E-commerce business models –Major Business to Consumer (B2C) -Major Business to Business (B2B) - Business model in emerging E-commerce areas. Building an E-commerce website – Choosing server software – Choosing the hardware for an E-commerce site

UNIT III: The E-commerce security environment - Security threats in the E-commerce environment - Technology solutions - Policies, procedures and laws

UNIT IV: Credit card E-commerce transactions – B2B payments systems – E-commerce digital payment systems in the B2B arena – B2B payment systems

UNIT V: Online marketing communication - Understanding ethical, social and political issues in E-commerce

Reference Book:

1. E-Commerce 2014, Ken Laudon, Carol Traver, 10/e, TataMcGraw Hill, 2013

UG - INTER DEPARTMENT ELECTIVE

INFORMATION TECHNOLOGY (Theory) (2 +1 Credit)

- UNIT I:** Information technology today - introduction to IT- Information systems - software and data - IT in business and industries – application areas of IT - computers in hiding - GPS (Global positioning System)
- UNIT II:** Communication technologies: network definition- Advantages of networks - Types of networks: LAN, MAN, WAN - Network topologies - Communication channels: twisted pair, co-axial and fiber optics - Internetworking devices: bridges, routers and gateways.
- UNIT III:** Internet: definition - Internet terminologies - Applications of Internet: e-mail, World Wide Web, video conferencing, usenet, telnet, VoIP, e-commerce - New Internet technologies.
- UNIT IV:** Multimedia - introduction - Tools of multimedia: paint and draw applications, graphics effects and techniques, sound and music, video - Multimedia authoring tools - Delivering multimedia - Multimedia on web
- UNIT V:** Personal, social and ethical issues: computers and operator health - viruses - computer crime - cryptography - burning issues

Reference Books:

1. Introduction to Information Technology, ITL education solution limited, Pearson Education India, New Delhi, July 2011.
2. Fundamentals of Information Technology, 2/e, Alexis leon and Mathew leon, Vikas publication, New Delhi, 2009.
3. Internet for everyone, 2/e, Alexis leon and Mathew leon, Vikas publication, New Delhi, 2011.

INTERNET AND WEB TECHNOLOGY
(Theory and Practical)
FOR MDA Programme-II Semester (3+1 Credit)

UNIT I: Information technology: introduction - Information systems - software and data - IT in business and industries - Application areas of IT- Computers in hiding - GPS (Global positioning System)

UNIT II: Communication technologies: network definition - advantages of networks - types of networks: LAN, MAN, WAN - network topologies - Communication channels: twisted pair, co-axial and fiber optics – Inter networking devices: bridges, routers and gateways.

UNIT III: Internet: definition - Internet terminologies - Applications of Internet: e-mail, World Wide Web, video conferencing, UseNet, telnet, VoIP, e-commerce - New Internet technologies.

UNIT IV: HTML: introduction - head and body sections - designing body section - ordered and unordered lists - table handlings frames - forms - example programs

UNIT V: Multimedia - introduction - Tools of multimedia: paint and draw applications, graphics effects and techniques, sound and music, video - Multimedia authoring tools - Delivering multimedia - Multimedia on web.
Personal, social and ethical issues: computers and operators health- viruses - computer crime - cryptography –burning issues.

Reference Books:

1. Introduction to Information Technology, ITL education solution limited, Pearson Education India, New Delhi, July 2011.
2. Fundamentals of Information Technology, 2/e, Alexis leon and Mathew leon, Vikas publication, New Delhi, 2009.
3. Internet for everyone, 2/e, Alexis leon and Mathew leon, Vikas publication, New Delhi, 2011.

FOR ALL PG-SCIENCE AND PG DIPLOMA PROGRAMMES

WEB PROGRAMMING (Theory and Practical) (2 + 1 Credit)

- UNIT I:** Computer: definition - anatomy of a computer - generations of computers - types of computers - storage devices - input and output devices - computer terminologies
- UNIT II:** HTML : introduction - head and body sections - designing title - designing headings - designing body section – alignment tags
- UNIT III:** Ordered and unordered list - Tables - using colors - paragraph tags - Hyperlink - Embedding images and videos
- UNIT IV:** Forms and Frames: form elements, buttons - frame layouts, floating frames.
- UNIT V :** XML: introduction - syntax - XML document structure – document type definitions – some simple DTD examples.

Reference Books:

1. Internet and World Wide – How to Program, Deitel, Fourth Edition, Pearson Prentice Hall, 2009.
2. XML and web services unleashed – Scmelzer, Vandersypen, Bloomberg,et.al. Pearson Education 2002

FOR ALL PG SOCIAL SCIENCE PROGRAMMES

INTRODUCTION TO COMPUTERS AND SPSS (Theory and Practical) (2 + 1 Credit)

UNIT I: Computer: definition - computer terminologies - functional units of a computer - generations of computers- types of computers - input and output devices - storage devices.

UNIT II: Statistical terms: mean, median, mode, standard deviation, variance, frequency, hypothesis, nominal and ordinal variable and standard error
SPSS: introduction - Windows in SPSS - Basic file types.

UNIT III: Data editor: variable view - data view - entering and editing data - reading data from spreadsheet, database and text file.
Data transformation: computing variable - functions: arithmetic, statistical and string functions - Rank cases - Recode: into same variable, into different variable - Automatic Recode.

UNIT IV: File handling and file transformation: Sort cases - Merging data files - Splitting a data file - select cases.
Working with output: viewer - draft viewer - pivot table - advantages of pivot table.

UNIT V: Analyzing data: frequencies - descriptive - crosstabs - summarize - OLAP cubes - Multiple response analysis - T-tests: one-sample, independent and paired test - One way analysis of variance - Linear regression.
Charts: introduction - types - creating and editing.

Reference Books:

1. Fundamentals of Information Technology, S.K.Bansal, A.P.H. Publishing company, New Delhi, 2002.
2. Statistical Methods, R.S.N. Pillai and Bhagavathi, 17/e, S.Chand and company Limited, reprint 2007.
3. SPSS Manual

FUNDAMENTALS OF STATISTICS AND SPSS
(Theory and Practical)
FOR MDA Programme - III SEMESTER
(3+1 CREDITS)

UNIT I: Basic Statistics: definition - data-variable - Measures of central tendency: mean - median - mode - Measures of dispersion: range - standard deviation.

Graphical representation - advantages - construction of graph - histogram.

UNIT II: SPSS: introduction - Windows in SPSS – Basic file types. Data editor: variable view - data view - entering and editing data - Reading data from spreadsheet, database and text file.

UNIT III: Data transformation: computing variable - functions: arithmetic, statistical and string functions - Rank cases - Recode: into same variable, into different variable - Automatic Recode.

UNIT IV: File handling and file transformation: Sort cases - Merging data files - Splitting a data file - select cases.
Working with output: viewer - draft viewer - pivot table - advantages of pivot table.

UNIT V: Analyzing data: frequencies - descriptive - crosstabs - summarize - OLAP cubes - Multiple response analysis - T-tests: one-sample, independent and paired test - One way analysis of variance - Linear regression.
Charts: introduction - types - creating and editing.

Reference Books:

1. Statistical Methods, R.S.N. Pillai and Bhagavathi, 17/e, S.Chand and company Limited, reprint 2007.
2. SPSS Manual

APPLICATIONS OF COMPUTERS IN CHEMISTRY
(Theory and Practical)

FOR M.Sc. CHEMISTRY Programme
(3 + 1 Credits)

UNIT I Introduction to C - character set - constants - reserved words - variables - data types - operators - expressions - comments - Input / Output statements.

UNIT II Control structures: introduction - Branching statements: if, switch case - Loops: while, do... while, for - go to, break and continue.

UNIT III Functions: user defined function - library function - recursive function - Arrays: single dimensional - multi dimensional - array initialization.

Pointers: introduction - advantages - declaring pointer variable - address operator - dynamic storage allocation.

UNIT IV Applications of C language in Chemistry: solving simple problems in C such as calculation of

1. Molecular weight of an organic compound
2. Ionic strength of an electrolyte
3. Thermodynamic parameters
4. Average rate constant
5. NMR frequency values of nuclei
6. Concentration of complexes using Beer - Lambert Law

UNIT V : ChemDraw: significance - toolbar - reactions scheme - drawing an intermediate - using rings - Fischer projections - perspective drawings - Newman projections - drawing stereochemistry - drawing bonds - editing bonds - drawing acyclic chains - drawing orbital's, symbols, arrows, arcs and other shapes - Typing equations in MS Word .

Reference Books:

1. Programming in ANSI C, E.Balagurusamy, 5^e, Tata - McGraw Hill publishing, New Delhi, August 2010.
2. Computers and their applications to Chemistry, Ramesh Kumari , Narosa Publishing House , New Delhi , 2002.
3. Computers in Chemistry, K.V. Raman, Tata McGraw Hill Publishing Company, 1999.
4. ChemDraw8 Manual.

PG - INTER DEPARTMENT ELECTIVE

1. JAVA PROGRAMMING - (4 Credit)

UNIT I: Introduction – Object-Oriented Programming Concepts, encapsulation, inheritance, polymorphism, features of Java, types of Java programs, Java architecture. literals - integer, floating point, character, string and boolean literals. data types - integer, floating point , character and boolean. variables. The structure of a Java program – comments, expressions and statements, type conversion, block statements and scope. Operators – arithmetic, bitwise relational, boolean logical and ternary. Operator precedence. Control statements – if...else, switch, while , do...while, for..., break, continue and comma statement. Arrays - one-dimensional and multi-dimensional arrays.

UNIT II: Classes – defining a class, the new operator and objects, the dot operator, method declaration and calling, constructors, instance variable hiding, this in constructor, method overloading, passing objects as parameters to methods. inheritance – creating subclasses, method overriding, final class, final method, final variables, object destruction and garbage collection, recursion, static method, static variables and

static block. package, the import statement, access modifier, interfaces, defining interfaces, implementing an interface.

UNIT III: wrapper classes – the number class - Byte, Short, Integer, Long, Float, Double, Character and Boolean classes. mathematical methods - exceptions -types of exceptions - catching exceptions, nested try blocks, hierarchy of multiple catch blocks, throw statement, creating your own exceptions, throws statement, the finally block, checked and unchecked exceptions. Input and Output classes - i/o streams, the file class, byte stream, InputStream, OutputStream, disk file handling, FileInputStream, FileOutputStream, ByteArrayInputStream, ByteArrayOutputStream, filtered byte streams, BufferedInputStream, BufferedOutputStream, DataInputStream, DataOutputStream, SequenceInputStream, ObjectOutputStream, ObjectInputStream, random access file, character stream, CharArrayReader, CharArrayWriter, InputStreamReader, OutputStreamWriter, FileWriter, FileReader, BufferedReader, BufferedWriter.

UNIT IV: strings – the String class, equality operator(==) and equals method, string concatenation with + , the StringBuffer class. threads - multitasking, creating a thread, states of a thread, multithreaded programming, thread priorities, join method, controlling the threads, synchronizing methods, inter-thread communication – wait, notify and notifyAll.

UNIT V: Applets – applet basics, methods of building an applet, some general methods of applet, displaying text in status bar, embedding applet information, the html applet tag, reading parameters into applets, colors in applet, getting documentbase and codebase, interfaces in applet, multimedia in applet, playing audio clips, images in applet, applet showing other html pages. graphics - drawing lines, rectangles, ovals and circles, arcs, polygons and polyline. Creating a graphics clip,

colors in graphics, constructors for Color class, color methods, setting paint modes, fonts in graphics, determining fonts available - in the system - setting fonts.

Note: For Input/Output printf method defined in Console class (Jdk1.5) will be used along with System.out.println method.

Text Book:

1. Programming in Java2, Dr.K.Somasundaram, Jaico Publishing House, New Delhi, 2009. Chapters: 1-17.

Reference Books:

1. Introduction to JAVA Programming, K. Somasundaram, Jaico Publishing House, New Delhi, 2013.
2. Java2: The Complete Reference-Fourth Edition, H.Schildt, TMH Publishing Company, New Delhi,2001. Foundation Classes, Mathew T.Nelson, McGraw-Hill, 1998.
3. Core JAVA2-Volume 1, 2-C.S.Hortmann and G. Comill, The Sun micro System press, Pearson Education Asia, 2000.
4. Do 'n' Learn JAVA – A Practical Approach, K.Somasundaram, Anuradha Publications, Chennai, 2013.

2. E-COMMERCE - (4 Credit)

UNIT I: E-Commerce - The revolution is just beginning - What is E-commerce - Difference between E-commerce and E-business - why study E-commerce – Seven unique features of E-commerce technology - Types of E-commerce - E-commerce I and II - Understanding E-commerce organizing themes

UNIT II: E-commerce business models –Major Business to Consumer (B2C) -Major Business to Business (B2B) - Business model in

emerging E-commerce areas. Building an E-commerce website –
Choosing server software – Choosing the hardware for an E-commerce site

UNIT III: The E-commerce security environment - Security threats in the E-commerce environment - Technology solutions - Policies, procedures and laws

UNIT IV: Credit card E-commerce transactions – B2B payments systems – E-commerce digital payment systems in the B2B arena – B2B payment systems

UNIT V: Online marketing communication - Understanding ethical, social and political issues in E-commerce

Reference Book:

1. E-Commerce 2014, Ken Laudon, Carol Traver, 10/e, TataMcGraw Hill, 2013