



**The Kelkar Education Trust's  
V. G. Vaze College of Arts, Science and Commerce  
(Autonomous)**

**Syllabus for T.Y.B.COM**  
(June 2023 Onwards)

**Programme: B.COM**

## SEMESTER-V

### Computer Systems and Applications Paper -I

#### *Modules at a Glance*

Sr.No.	Modules	No. of Lectures
1	Data Communication, Networking and Internet	18
2	Database and MySQL	18
3	Spread Sheet	09
<b>Total</b>		<b>45</b>

Sr. No.	Modules / Units
<b>1</b>	<b>Data Communication, Networking and Internet</b>
	<p>a) Data Communication Component, Data representation, Distributed processing. (Conceptonly)</p> <p><b>b) Network Basics and Infrastructure</b></p> <ul style="list-style-type: none"><li>• Definition, Types (LAN, MAN, WAN)Advantages.</li><li>• Network Structures – Server Based, Client server, Peer toPeer.</li><li>• Topologies – Star, Bus, Ring.</li><li>• Network Media, Wired – Twisted Pair, Co-axial, Fiber Optic and Wireless – Radio andInfrared.</li><li>• Network Hardware: Hubs, Bridges, Switches,Routers.</li><li>• Network Protocols – TCP/IP, OSIModel.</li></ul> <p><b>c) Internet</b></p> <ul style="list-style-type: none"><li>• Definition, Types of connections, sharing internet connection, HotSpots.</li><li>• Services on net- WWW,Email-Blogs.</li><li>• IP addresses, Domain names, URLs, Hyperlinks, WebBrowsers</li><li>• Searching Directories, Search engines, Boolean search (AND, OR, NOT), Advanced search, Meta SearchEngines.</li><li>• Email – POP/SMTP accounts in Email, Different parts of an Email address. Receiving and sending emails with attachments by scanning attachments for viruses.</li><li>• Cyber Crime, Hacking, Sniffing,Spoofing.</li></ul>

2	Database and MySQL
	<p><b>a) Introduction :</b> Introduction to Databases, Relational and Non-relational database system MySQL as a Non-procedural Language. View of data.</p> <p><b>b) MySQL Basics :</b> Statements (Schema Statements, Data statements, Transaction statements), names (table &amp; column names), data types (Char, Varchar, Text, Mediumtext, Longtext, Smallint, Bigint, Boolean, Decimal, Float, Double, Date, Date Time, Timestamp, Year, Time), Creating Database, inserting data, Updating data, Deleting data, expressions, built-in-functions – lower, upper, reverse length, Itrim, rtrim, trim, left, right, mid, concat, now, time, date, curdate, day, month, year, dayname, monthname, abs, pow, mod, round, sqrt missing data(NULL and NOT NULL DEFAULT values) CREATE, USE, ALTER (Add, Remove, Change columns), RENAME, SHOW, DESCRIBE (CREATE TABLE, COLUMNS, STATUS and DATABASES only) and DROP (TABLE, COLUMN, DATABASES statements), PRIMARY KEY FOREIGN KEY (One and more columns) Simple Validity checking using CONSTRAINTS.</p>
	<p><b>c) MySQL Simple queries :</b> The SELECT statement (From, Where, Group By, Having, Order By, Distinct, Filtering Data by using conditions. Simple and complex conditions using logical, arithmetic and relational operators (=, !=, &lt;, &gt;, &lt;&gt;, AND, OR, NOT, LIKE) Aggregate Functions: count, sum, avg, max, min.</p> <p><b>d) Multi-table queries:</b> Simple joins (INNER JOIN), SQL considerations for multi table queries (table aliases, qualified column names, all column selections selfjoins).</p> <p><b>e) Nested Queries (Only up to two levels) :</b> Using sub queries, sub query search conditions, sub queries &amp; joins, nested sub queries, correlated sub queries, sub queries in the HAVING clause. Simple Transaction illustrating START, COMMIT, and ROLLBACK.</p>

3	Spread Sheet
	<p><b>a) Creating and Navigating worksheets and adding information to worksheets</b></p> <ul style="list-style-type: none"> <li>• Types of data, entering different types of data such as texts, numbers, dates, functions.</li> <li>• Quick way to add data Auto complete, Autocorrect, Auto fill, Auto fit. Undo and Redo.</li> <li>• Moving data, contiguous and non contiguous selections, Selecting with keyboard. Cut-Copy, Paste. Adding and moving columns or rows. Inserting columns and rows.</li> <li>• Find and replace values. Spellcheck.</li> <li>• Formatting cells, Numbers, Date, Times, Font, Colors, Borders, Fills.</li> </ul> <p><b>b) Multiple Spreadsheets</b></p> <ul style="list-style-type: none"> <li>• Adding, removing, hiding and renaming worksheets.</li> <li>• Add headers/footers to a Workbook. Page breaks, preview.</li> <li>• Creating formulas, inserting functions, cell references, Absolute, Relative (within a worksheet, other worksheets and other workbooks).</li> </ul> <p><b>c) Functions</b></p> <ul style="list-style-type: none"> <li>• Financial functions: FV, PV, PMT, PPMT, IPMT, NPER, RATE</li> <li>• Mathematical and statistical functions. ROUND, ROUNDDOWN, ROUNDUP, CEILING, FLOOR, INT, MAX, MIN, MOD, SQRT, ABS, SUM, COUNT, AVERAGE</li> </ul> <p><b>d) Data Analysis</b></p> <ul style="list-style-type: none"> <li>• Sorting, Subtotal.</li> <li>• Pivot Tables- Building Pivot Tables, Pivot Table regions, Rearranging Pivot Table.</li> </ul>

**Course Learning objectives:**

1. To understand the basic concepts of data communication, layered model, protocols and inter-working between computer networks and switching components in telecommunication systems.
2. To provide basic knowledge of MS-Excel for Statistical Techniques to the students.
3. To identify spreadsheet terminology and concepts, create formulas and functions, use formatting features, and generate charts, graphs, and reports.
4. To analyse numerical data by using statistical tools and functions.
5. Be able to write SQL statements that create database objects.

## **Course Learning Outcomes:**

**After completing this course , students**

**Will able to....**

1. Understand the various database structures.
2. Create database, and perform various commands related to database.
3. Plot Column, Line, Pie and Bar charts for the given data.
4. Understand how to use excel and its features.
5. After completing the practical course students are getting knowledge about the MS- Excel, Students are able to draw diagram and graphs by using MS-Excel, As well as they write small programme in R software for drawing diagram such as Bar Diagram, Pie Diagram and Graphs such as Histogram, Ogive curve etc.
6. Write complex SQL queries to retrieve information from databases with many tables to support business decision making

### **❖ Scheme of Examination**

<b>Type</b>	<b>Marks</b>	<b>Duration</b>
Theory	60	2 hours
Practical	15	1 hour per batch of 10
Internal Assessment (Class Test)	15	30 Minutes
	10	---

### **• Practical Examination Pattern- Semester V**

<b>Sr. No.</b>	<b>Topic</b>	<b>Marks</b>
01	MySQL	05
02	Spread Sheet	05
03	Journal	05

**❖ Practical examination to be conducted 2 to 3 weeks before the theory examination.**

**❖ Software Requirement : MS-Excel 2010, MYSQL 5.1 or above version**

**❖ Hardware**

For a batch of 20 students minimum 10 computers with appropriate hardware and software installed on each computer. During practical hours maximum two student may share one computer.

## SEMESTER-VI

### 2. Computer Systems and Applications Paper - II

#### *Modules at a Glance*

Sr.No.	Modules	No. of Lectures
1	Advanced Spread Sheet	18
2	Basic html	18
3	Advance html	09
	<b>Total</b>	<b>45</b>

Sr. No.	Modules / Units
<b>1</b>	<b>Advanced Spread Sheet</b>
	<b>a) Multiple Spreadsheets</b> <ul style="list-style-type: none"><li>• Creating and using templates, Using predefined templates, Adding protection option.</li><li>• Creating and Linking Multiple Spreadsheets.</li><li>• Using formulas and logical operators.</li><li>• Creating and using named ranges.</li><li>• Creating Formulas that use reference to cells in different worksheets.</li></ul>
	<b>b) Functions I</b> <ul style="list-style-type: none"><li>• Database Functions LOOKUP, VLOOKUP,HLOOKUP</li><li>• Conditional Logic functions IF, Nested IF, COUNTIF, SUMIF,AVERAGEIF</li><li>• String functions LEFT, RIGHT, MID, LEN, UPPER, LOWER, PROPER, TRIM, FIXED</li></ul>
	<b>c) Functions II</b> <ul style="list-style-type: none"><li>• Date functions TODAY, NOW, DATE, TIME, DAY, MONTH, YEAR, WEEKDAY, DAYS360</li><li>• Statistical Functions COUNTA, COUNTBLANK, CORREL,</li></ul>

	<p>LARGE,SMALL</p> <p><b>d) Data Analysis</b></p> <ul style="list-style-type: none"> <li>• Filter with customize dcondition.</li> <li>• The Graphical representation of data Column, Line, Pie and Barcharts.</li> </ul>
<b>2</b>	<b>HTML</b>
	<p><b>a) Basic HTML</b></p> <ul style="list-style-type: none"> <li>• HTML – BASIC TAGS</li> <li>• HTML – ELEMENTS</li> <li>• HTML – ATTRIBUTES</li> <li>• HTML – FORMATTING</li> <li>• HTML – PHRASE TAGS</li> <li>• HTML – META TAGS</li> <li>• HTML – COMMENTS</li> <li>• HTML – IMAGES</li> <li>• HTML – TABLES</li> <li>• HTML – LISTS</li> <li>• HTML – TEXT LINKS</li> <li>• HTML – IMAGE LINKS</li> <li>• HTML – EMAIL LINKS</li> <li>• HTML – FRAMES</li> <li>• HTML – IFRAMES</li> <li>• HTML – BLOCKS</li> <li>• HTML – BACKGROUNDS</li> <li>• HTML – COLORS</li> <li>• HTML – FONTS</li> </ul>
<b>3</b>	<b>ADVANCED HTML</b>
	<ul style="list-style-type: none"> <li>• HTML – FORMS - HTML Form Attributes, HTML Form Elements, HTML Input Types, HTML Input Attributes, HTML Input form* Attributes</li> <li>• HTML – MARQUEES-The &lt;marquee&gt; Tag Attributes</li> <li>• HTML JAVASCRIPT-External JavaScript, Internal Script, Event Handlers, Hide Scripts from Older Browsers, The &lt;noscript&gt; Element, Default Scripting Language</li> <li>• HTML Graphics - HTML Canvas Graphics, HTML SVG Graphics</li> <li>• HTML: Media, Multimedia, Video, Audio, Plug-ins,YouTube Videos</li> </ul>

- Note :**
- 1)Theory 03 lectures per week.
  - 2) Practical batch size 20-25, 01 practical = 03 theory lectures per week.
  - 3) 10 Practical's are to be completed in each semester.

## Semester VI

Topic	Number of Practical's
Advanced Spread Sheet	04
Basic html	04
Advance html	02

Minimum 6 practical's are to be recorded in the journal in the Semester VI  
(Minimum 04 on html, 02 on Advanced Spread Sheet)

### ❖ Suggested list of Practical's for Semester VI

1. Calculation of DA, HRA, PF, Gross Salary and Net Salary using SpreadSheet
2. Calculation of Income Tax using SpreadSheet
3. Filtering data and Graphical representation of data using SpreadSheet
4. Using VLOOKUP and HLOOKUP using SpreadSheet
5. Introduction to HTML. Create a basic HTML file
6. Create a static webpage using table tags of HTML
7. Create a static web page which defines all text formatting tags of HTML in tabular format
8. Create webpage using list tags of HTML
9. Create webpage to include image using HTML tag
10. Create employee registration webpage using HTML form objects

### Course Learning Objectives:

1. Make meaningful representations of data in the form of charts and pivot tables.
2. Draw analysis on data using spreadsheets and use interpretation to make decisions.
3. Define HTML and common terminology related to HTML.
4. Recognize correct HTML syntax. Be able to write a brief, error-free HTML code.
5. Basics of HTML5.

### Course Learning Outcomes:

**After completing this course , students**

**Will able to....**

1. Plot Column, Line, Pie and Bar charts for the given data.
2. Understand how to use excel and its features.
3. Be able to use the HTML programming language



4. Resolves written HTML codes.
5. Be able to use the Design Programs.
6. Uses Microsoft Expression Web 4 programme.
7. Designs site and page via Microsoft Expression Web 4 programme
8. Uses the program Web Page Maker
9. Designs site and page via Web Page Maker programme
10. Design web pages using HTML 5 elements

### **Scheme of Examination**

<b>Type</b>	<b>Marks</b>	<b>Duration</b>
Theory	60	2 hours
Practical	15	1 hour per batch of 10
Internal Assessment(Class Test)	15	30 Minutes
Over all Participation and Behaviour	10	---

### **Practical Examination Pattern- Semester VI**

<b>Sr. No.</b>	<b>Topic</b>	<b>Marks</b>
01	Advanced Spread sheet	05
02	Htмл	05
03	Journal	05

- ❖ Practical examination to be conducted 2 to 3 weeks before the theory examination.
- ❖ Software Requirement : Spreadsheet **2010, Notepad/word pad**
- ❖ Hardware  
For a batch of 20 students minimum 10 computers with appropriate hardware and software installed on each computer. During practical hours maximum two student may share one computer.