



Janardan Bhagat Shikshan Prasarak Sanstha's
CHANGU KANA THAKUR
ARTS, COMMERCE & SCIENCE COLLEGE, NEW
PANVEL (AUTONOMOUS)

Re-accredited 'A+' Grade by NAAC

'College with Potential for Excellence' Status Awarded by UGC

'Best College Award' by University of Mumbai

Program: B.Com.

**Revised Syllabus of T.Y.B.Com Computer Systems and
Applications - Semester V and VI**

Choice Based Credit & Grading System (75:25)

***Revised Syllabus of Courses of B.Com. Programme at Semester V
with effect from the Academic Year 2021-2022***

Elective Courses (EC)

2. Ability Enhancement Courses (AEC)

2. Computer Systems and Applications Paper - I

Modules at a Glance

Course Objectives:-

1. To understand the types of topology
2. Study the computer networking and the layers of OSI model and TCP/IP model.
3. Understand the fundamentals of wireless networks.
4. To learn how to creating and navigating worksheets in MS-Excel.
5. To learn various data structures in MySql

Course Outcomes:-

1. Identify the different types of topology.
2. Describe the functions of each layer in OSI and TCP/IP model.
3. Explain the basic concepts of wireless network
4. To understand how to creating and navigating worksheets in MS-Excel.
5. Students will be able to choose appropriate data structure for given problem in MySql

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

Sr. No.	Modules / Units
1	Data Communication, Networking and Internet
	<p>a) Data Communication Component, Data representation, Data Flow, Distributed processing, Telecommunications</p> <p>b) Network Basics and Infrastructure</p> <ul style="list-style-type: none"> • Definition, Types (LAN, MAN, WAN) Advantages. • Network Structures – Server Based, Client server, Peer to Peer. • Topologies – Star, Bus, Ring. • Network Media, Wired – Twisted Pair, Co-axial, Fiber Optic and Wireless – Radio and Infrared. • Network Hardware: Hubs, Bridges, Switches, Routers, Modems • Network Protocols – TCP/IP, OSI Model. <p>c) Internet</p> <ul style="list-style-type: none"> • Definition, Types of connections, sharing internet connection, Hot Spots. • Services on net- WWW, Email-Blogs. • IP addresses, Domain names, URLs, Hyperlinks, Web Browsers • Searching Directories, Search engines, Boolean search (AND, OR, NOT), Advanced search, Meta Search Engines. • Email – POP/SMTP accounts in Email, Different parts of an Email address. Receiving and sending emails with attachments by scanning attachments for viruses. • Cyber Crime, Hacking, Sniffing, Spoofing
2	Database and MySQL
	<p>a) Introduction :To Databases, Relational and Non-relational database system MySQL as a Non-procedural Language. View of data.</p> <p>b) MySQL Basics :Statements (Schema Statements, Data statements, Transaction statements), names (table & 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, ltrim, 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>
3	Database and MySQL
	<p>a) MySQL Simple queries : TheSELECT statement (From, Where, Group By, Having, Order By, Distinct, Filtering Data by using conditions. Simple and complex conditions using logical, arithmetic and relational operators (=, !=, <, >, <>, AND, OR, NOT, LIKE) Aggregate Functions – count, sum, avg, max, min.</p> <p>b) Multi-table queries:Simple joins (INNER JOIN), SQL considerations for multi table queries(table aliases, qualified column names,all column selections self joins).</p> <p>c) Nested Queries (Only up to two levels) :Using sub queries, sub query search conditions, sub queries & joins, nested sub queries, correlated sub queries, sub queries in the HAVING clause.</p> <p>Simple Transaction illustrating START, COMMIT, and ROLLBACK.</p>

Sr. No.	Modules / Units
4	Spread Sheet
	<p>a) Creating and Navigating worksheets and adding information to worksheets</p> <ul style="list-style-type: none"> Types of data, entering different types of data such as texts, numbers, dates, functions. Quick way to add data Auto complete, Autocorrect, Auto fill, Auto fit. Undo and Redo. Moving data, contiguous and non contiguous selections, Selecting with keyboard. Cut-Copy, Paste. Adding and moving columns or rows. Inserting columns and rows. Find and replace values. Spell check. Formatting cells, Numbers, Date, Times, Font, Colors, Borders, Fills. <p>b) Multiple Spreadsheets</p> <ul style="list-style-type: none"> Adding, removing, hiding and renaming worksheets. Add headers/Footers to a Workbook. Page breaks, preview. Creating formulas, inserting functions, cell references, Absolute, Relative (within a worksheet, other worksheets and other workbooks). <p>c) Functions</p> <ul style="list-style-type: none"> Financial functions: FV, PV, PMT, PPMT, IPMT, NPER, RATE Mathematical and statistical functions. ROUND, ROUNDDOWN, ROUNDUP, CEILING, FLOOR, INT, MAX, MIN, MOD, SQRT, ABS, SUM, COUNT, AVERAGE <p>d) Data Analysis</p> <ul style="list-style-type: none"> Sorting, Subtotal. Pivot Tables- Building Pivot Tables, Pivot Table regions, Rearranging Pivot Table.

Note :

- a) Theory 03 lectures per week.
b) Practical batch size 20-25, 01 practical = 03 theory lectures per week.
c) 10 Practical's are to be completed in each semester.

Semester V

Topic	Number of Practical's
Spread sheet	04
MySQL	06

Minimum 6 practical's are to be recorded in the journal in the Semester V
[Minimum 4 on MySQL, 2 on MS-Excel)

❖ Scheme of Examination

Type	Marks	Duration
Theory	75	2 ½ hours
Practical	20	1 hour per batch of 10
Active Participation and Class conduct	05	---

• Practical Examination Pattern- Semester V

Sr. No.	Topic	Marks
01	MySQL	05
02	Spread Sheet	05
03	Journal	05
04	Viva	05

- Practical examination to be conducted 2 to 3 weeks before the theory examination. Marks out of 25 to be submitted to the University before commencement of theory examination.
- Software Requirement :
MS-Office 2010
- Hardware
For a batch of 120 students minimum 10 computers with appropriate hardware and software installed on each computer. During practical hours maximum two student may share one computer.
- For in house computing facility fee of rupees 750/- be charged for each student per Semester in the existing fee structure against head of computer fee/computer practical.

❖ Suggested list of Practical's for Semester V

1. Practical Exercises in MySQL creating tables
2. Modifying tables
3. Inserting / Altering data
4. Queries
5. Multi-Table Queries
6. Aggregating Data using Group Function
7. Sub-Queries
8. Simple interest calculations in MS-Excel
9. Compound Interest Calculations
10. Depreciation Calculations
11. Sorting and Sub-Totals
12. Use of Pivot Tables
13. Auto Complete feature of excel
14. AutoFill feature of excel
15. Financial Functions of excel
16. Mathematical functions of excel

***Revised Syllabus of Courses of B.Com. Programme at Semester VI
with effect from the Academic Year 2021-2022***

Elective Courses (EC)

2. Ability Enhancement Courses (AEC)

2. Computer Systems and Applications Paper – II

Course Objectives:-

1. Understand concept of Ecommerce and its types.
2. Be familiarized with concept of E-business and E-business Models.
3. To learn how to creating multiple worksheets, functions, Data Analysis in MS-Excel.
4. Understand the principles of creating an effective web page.
5. To learn to write , test and debug web pages using HTML and CSS.
6. Learn techniques of responsive web design.
7. Develop basic programming skills using JavaScript.

Course Outcomes:-

1. Define and differentiate various types of Ecommerce.
2. Define and Describe E-business and its Models.
3. Describe how to creating multiple worksheets, functions, Data Analysis in MS-Excel.
4. *Describe fundamentals of web page*
5. *Introduce the creation of static webpage using HTML*
6. *Describe the importance of CSS in web development*
7. *Describe the function of JavaScript*

Modules at a Glance

Sr. No.	Modules	No. of Lectures
1	E – Commerce	09
2	Advanced Spread Sheet	09
3	Advanced Spread Sheet	09
4	Web Programming	18
Total		45

Sr. No.	Modules / Units
1	E – Commerce
	a) Definition of E-commerce b) Features of E-commerce c) Types of E-commerce (B2C, B2B, C2C, P2P) d) Business Models in E-commerce (Advertising, Subscription, Transaction Fee, Sales Revenue, Affiliate Revenue) e) Major B2C models (Portal, Etailer, Content Provider, Transaction Broker, Market Creator, Service Provider, Community Provider), Security f) Payment Systems: Digital Cash, Online stored value, Digital accumulating balance payment, Digital credit accounts, digital checking. g) How an Online credit card transaction works? h) Limitation of E-commerce.
2	Advanced Spread Sheet
	a) Multiple Spread sheets <ul style="list-style-type: none"> • Creating and using templates, Using predefined templates, Adding protection option. • Creating and Linking Multiple Spreadsheets. • Using formulas and logical operators. • Creating and using named ranges. • Creating Formulas that use reference to cells in different worksheets. b) Functions <ul style="list-style-type: none"> • Database Functions LOOKUP, VLOOKUP, HLOOKUP • Conditional Logic functions IF, Nested IF, COUNTIF, SUMIF, AVERAGEIF • String functions LEFT, RIGHT, MID, LEN, UPPER, LOWER, PROPER, TRIM, FIXED
3	Advanced Spread Sheet
	a) Functions <ul style="list-style-type: none"> • Date functions TODAY, NOW, DATE, TIME, DAY, MONTH, YEAR, WEEKDAY, DAYS360 • Statistical Functions COUNTA, COUNTBLANK, CORREL, LARGE, SMALL b) Data Analysis <ul style="list-style-type: none"> • Filter with customized condition. • The Graphical representation of data Column, Line, Pie and Bar charts. • Using Scenarios, creating and managing a scenario. • Using Goal Seek • Using Solver • Understanding Macros, Creating, Recording and Running Simple Macros. Editing a Macro(concept only)

Sr. No.	Modules / Units
4	Web Programming
	<p>a) HTML5: Fundamental Elements of HTML, Formatting Text in HTML, Organizing Text in HTML, Links and URLs in HTML, Tables in HTML, Images on a Web Page, Image Formats, Image Maps, Colors, FORMs in HTML, Interactive Elements, Working with Multimedia - Audio and Video File Formats, HTML elements for inserting Audio / Video on a web page</p> <p>b) CSS: Understanding the Syntax of CSS, CSS Selectors, Inserting CSS in an HTML Document, CSS properties to work with background of a Page, CSS properties to work with Fonts and Text Styles, CSS properties for positioning an Element</p> <p>c) JavaScript: Using JavaScript in an HTML Document, Programming Fundamentals of JavaScript – Variables, Operators, Control Flow Statements, Popup Boxes, Functions – Defining and Invoking a Function, Defining Function arguments, Defining a Return Statement, Calling Functions with Timer, JavaScript Objects - String, RegExp, Math, Date, Browser Objects - Window, Navigator, History, Location, Document, Cookies, Document Object Model, Form Validation using JavaScript</p>

Note :

- Theory 03 lectures per week.
- Practical batch size 20-25, 01 practical = 03 theory lectures per week.
- 10 Practical's are to be completed in each semester.

Semester VI

Topic	Number of Practical's
Advanced Spread Sheet	06
Web programming	04

Minimum 6 practical's are to be recorded in the journal in the Semester VI
[Minimum 4 on Advanced Spread Sheet, 2 on Web programming,]

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

- Calculation of DA, HRA, PF, Gross Salary and Net Salary using Spread Sheet
- Calculation of Income Tax using Spread Sheet
- Filtering data and Graphical representation of data using Spread Sheet
- Using VLOOKUP and HLOOKUP using Spread Sheet
- Creating and managing a scenario using Spread Sheet
- Use of Goal Seek and Solver using Spread Sheet
- Design a web page using different text formatting tags in HTML5 .
- Design a web page with links to different pages and allow navigation.
- Design a web page demonstrating all Style sheet types
- Design a web page with Image maps.
- Design a web page with a form that uses all types of controls.
- Design a web page demonstrating different semantics
- Design a web page with different tables.
- Design a web page embedding with multimedia features.

❖ **Scheme of Examination**

Type	Marks	Duration
Theory	75	2½ hours
Practical	20	1 hour per batch of 10
Active Participation and Class conduct	05	---

• **Theory Examination Pattern**

All questions are compulsory

Question No.	Unit No.	Marks	Marks with Internal Option
Q. 1.	Objective type based on I, (II,III) and IV	11+2+2	23
Q. 2.	I	15	30
Q. 3.	II	15	30
Q. 4.	III	15	30
Q. 5.	IV	15	30

• **Practical Examination Pattern- Semester VI**

Sr. No.	Topic	Marks
01	Advanced Spread sheet	05
02	Web programming	05
03	Journal	05
04	Viva	05

- Practical examination to be conducted 2 to 3 weeks before the theory examination. Marks out of 25 to be submitted to the University before commencement of theory examination.
- Software Requirement :
MS-Office 2010
Internet Explorer
- Hardware
For a batch of 120 students minimum 10 computers with appropriate hardware and software installed on each computer. During practical hours maximum two student may share one computer.
- For in house computing facility fee of rupees 750/- be charged for each student per Semester in the existing fee structure against head of computer fee/computer practical.