Resolution No.: BOS/100623/AC/260623

Bharatiya Vidya Bhavan's

M. M. College of Arts, N.M. Institute of Science, H.R.J. College of Commerce

(Bhavan's College) Autonomous

(Affiliated to University of Mumbai)

Syllabus for: T. Y. B. Com.
COMPUTER SYSTEMS AND APPLICATIONS

Program: B.Com.

Program Code: BH. BCom.

Course Code: (BH. BCOMTS.8)

with effect from academic year 2023-24

Programme: B.Com.				Semester: V	
Course: <u>Computer Systems and Applications I</u>				**Course Code: BH.BCOMTSV.8**	

Teaching Scheme				**Evaluation Scheme (Theory)**	
Lecture (Periods per week)	**Practical (Periods per week per batch)**	**Tutorial (Periods per week per batch)**	**Credits (Theory +Practical)**	**Continuous Internal Assessment (CIA)**	**End Semester Examination (ESE)**
3	3	--	2+1	**Marks: 40**	**Marks: 60**

Pre-requisites: Nil

Course Objectives:

1. To understand the data communication system, networking and internet along with cyber crimes
2. To learn the concept of database and basics of MySQL, the non-procedural language
3. To learn simple queries, nested queries and multi-table queries in MySQL
4. To learn creating and navigating worksheets and adding information to worksheets, use of Multiple Spreadsheets, Built –in-Functions and Data Analysis using spread sheet.

Course Outcomes:

1. Learner understands the concept of data communication system, networking and its use, internet and its security codes along with common cyber crimes
2. Learner understands the concept of database, its use and Basics of MySQL
3. Learner can write commands in MySQL to solve simple, nested and multi-table queries
4. Learner can create worksheet, add information in worksheet, make use of multiple spread sheets and can perform data analysis using spread sheet.

Detailed Syllabus: (per session plan)

Module	Description	Periods

I	**DATA COMMUNICATION, NETWORKING AND INTERNET**
	
	(a) **Data Communication** Components, Data representation, distributed processing (Concepts only).
	(b) **Network Basics and Infrastructure**
	    (i) Definition, Types (LAN, MAN, WAN) Advantages
	    (ii) Network Structures – Server Based, Client server, Peer to Peer
	    (iii) Topologies – Star, Bus, Ring, Mesh
	    (iv) Network Media, Wired – Twisted air, Co-axial, Fibre Optic and Wireless – Radio and Infrared.
	    (v) Network Hardware: Hubs, Bridges, Switches, Routers
	    (vi) Network Protocols – TCP/IP, OSI Model
	(c) **Internet**
	    (i) Definition, Types of connections, Sharing internet connection, Hot Spots.
	    (ii) Services on net – WWW, Email-Blogs.
	    (iii) IP addresses, Domain names, URLs, Hyperlinks, Web Browsers
		09

		(iv) Searching Directories, Search engines, Boolean search (AND, OR, NOT), Advanced search, Meta Search Engines. (v) Email-POP/SMTP accounts in Email, Different parts of an Email address. Receiving and sending emails with attachments by scanning attachments for viruses. (vi) Cyber Crime, Hacking, Sniffing, Spoofing, Filing a complaint on cyber crime cell.	
II		**DATABASE AND MySQL** 1. Introduction to Databases, Relational and Non-relational database system, MySQL as a Non-procedural Language. Views of data. 2. **MySQL Basics**: (a) Statements (Schema Statements, Data statements, Transaction statements), names (table & column names), data types (Char, Varchar, Text, Medium text, Longtext, Smallint, Bigint, Boolean, Decimal, Float, Double, Date, Date Time, Time Stamp, Year, Time), Creating Database, inserting data, Updating data, Deleting data, expressions, Missing data (NULL and NOT NULL, DEFAULT values), PRIMRY KEY, FOREIGN KEY (One and more columns). Simple Validity Checking using CONSTRAINTS. (b) Built-in-functions – lower, upper, reverse, length, ltrim, rtrim, trim, left, right, mid, concat, now, time, data, curdate, day, month, year, dayname, monthname, abs, pow, mod, round, sqrt. (c) Commands and Statements: CREATE, USE, ALTER (Add, Remove, Change columns), RENAME, SHOW, DESCRIBE (CREATE TABLE, COLUMNS, STATUS and DATABASES only) and DROP (TABLE, COLUMN, DATABASES statements).	12
III		**DATABASE AND MySQL** (a) **MySQL Simple queries**: The SELECT statement (From, Where, Group By, Having, Order By, Distinct), Filtering Data by using conditions and complex conditions using logical, arithmetic and relational operators (=, !=, <, >, <>, AND, OR, NOT, LIKE) Aggregate Functions – count, sum, avg, max, min. (b) **Multi-table queries**: Simple joins (INNER JOIN), SQL considerations for multi table queries (table aliases, qualified column names, all column selections, self joins). (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. Simple Transaction illustrating START, COMMIT and ROLLBACK.	12
IV		**SPREAD SHEET** **(a) Creating and Navigating worksheets and adding information to worksheets** (i) Types of data, entering different types of data such as texts, numbers, dates, functions. (ii) Quick ways to add data, Auto complete, Auto correct, Auto fill, Auto fit, Undo and Redo. (iii) Moving data, contiguous and non-contiguous selections. Selecting with keyboard, Cut-Copy Paste. Adding and moving columns or rows. Inserting columns and rows. (iv) Find and replace values. Spell check. (v) Formatting Cells, Numbers, Date, Time, Font, Colors, Borders, Fills. **(b) Multiple Spreadsheets**	12

		(i)	Adding, removing, hiding and renaming worksheets.	
		(ii)	Add Headers/Footers to a Workbook. Page breaks, previews.	
		(iii)	Creating formulas, inserting function, cell references, Absolute, Relative (within a worksheet, other worksheets and other workbooks).	
	(c) Functions			
		(i)	Financial functions: FV, PV, PMT, PPMT, IPMT, NPER, RATE	
		(ii)	Mathematical and statistical functions. ROUND, ROUNDDOWN, ROUNDUP, CEILING, FLOOR, INT, MAX, MIN, MOD, SQRT, ABS, SUM, COUNT, AVERAGE	
	(d) Data Analysis			
		(i)	Sorting, Subtotal.	
		(ii)	Pivot Tables – Building Pivot Tables, Pivot Table regions, Rearranging Pivot Table.	
	Total			45

Text Books:

1. **Computer Systems and Applications by Dr. Faiyaz Gadiwalla & Mukesh N. Tekwani, Sheth Publications Pvt. Ltd.**
2. **Computer Systems and Applications by Verus D'Sa, Manan Prakashan**
3. https//cybercrime.gov.inv

List of Topics for the practical:

Software Requirement: MS-Excel 2010, MySQL version 5 or 5.1

Sr. No.	Topic of the Practical	No. of practical
1	MySQL	6
2	Spread Sheet	4

Details of Conduct of Practical Examination (Evaluation Scheme): At the end of the semester, examinations of 2 hours duration and 60 marks shall be held.

Details of Continuous Internal Assessment (CIA)

For continuous internal assessment, it is proposed to hold one class test (for 20 marks) and Practical examination (for 20 marks). Duration for each will be ½ hours.

Any other information: Batch size of practical batch/Tutorial batch as prescribed by University of Mumbai.

Programme: B.Com.				Semester: VI	

Course: <u>Computer Systems and Applications II</u>	Course Code: BH.BCOMTSVI.8

Teaching Scheme				Evaluation Scheme (Theory)	
Lecture (Periods per week)	**Practical (Periods per week per batch)**	**Tutorial (Periods per week per batch)**	**Credits (Theory +Practical)**	**Continuous Internal Assessment (CIA)**	**End Semester Examination (ESE)**
3	3	--	2+1	**Marks: 40**	**Marks: 60**

Pre-requisites: Nil

Course Objectives:

1. To understand the concept and use of E-Commerce
2. To learn further use of multiple worksheets
3. To learn advanced functions and data analysis
4. To learn programming in Visual Basic.

Course Outcomes:

1. Learner understands the concept and use of E-Commerce
2. Learner can make use of multiple worksheets for calculations by liking the worksheets
3. Learner can use advanced formulae for calculations and can do data analysis by representing data graphically
4. Learner can write programs in Visual Basic.

Detailed Syllabus: (per session plan)

Module	Description	Periods
I	**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, Subscriptions, Transaction fee, Sales Revenue, Affiliate Revenue) (e) Major B2C models (Portal, E-tailer, Content Provider, Transaction Broker, Market Creator, Service Provider, Community Provider). (f) E-Commerce Security: Integrity, Non repudiation, Authenticity, Confidentiality, Privacy, Availability. (g) Encryption ad Decryption: Definition, Digital signatures, SSL. (h) Paytm Systems: Digital cash, online stored value, digital accumulating balance paytm, Digital credit amount, digital checking. (i) How an online credit card transaction works. SET protocol. (j) Limitations of E-commerce. (k) M-commerce (Definition and feature).	09

II	**ADVANCED SPREAD SHEET**	12
	(a) Multiple Spread Sheets	
	(i) Creating and using templates, using predefined templates, adding protection option.	
	(ii) Creating and linking multiple spreadsheet.	
	(iii) Using formulas and logical operators.	
	(iv) Creating and using named ranges.	
	(v) Creating formula that use reference to cells in different worksheets.	
	(b) Functions	
	(i) Database functions LOOKUP, VLOOUP, HLOOKUP	
	(ii) Conditional logic function IF, Nested IF, COUNTIF, SUMIF, AVERAGEIF	
	(iii) String function LEFT, RIGHT, MID, LEN, UPPER, LOWER, PROPER, TRIM, FIXED	
III	**ADVANCED SPREAD SHEET**	12
	(a) Functions	
	(i) Date functions TODAY, NOW, DATE, TIME, DAY, MONTH, YEAR, WEEKDAY, DAYS360	
	(ii) Statistical functions COUNTA, COUNTBLANK , CORREL, LARGE, SMALL	
	(b) **Data Analysis**	
	(i) Filter with customized condition.	
	(ii) The graphical representation of data column, line, pie and bar chart	
	(iii) Using scenarios, creating and managing a scenario	
	(iv) Using goal seek	
	(v) Using solver	
	(vi) Understanding macros, creating, recording and running simple macros. Editing a macro (Concept only)	
IV	**VISUAL BASIC**	12
	(a) Introduction to visual basic, introduction graphical user interface (GUI) programing language (procedural, object oriented, event driven), writing VB projects. The visual basic environment	
	(b) Introduction to VB controls. Text boxes, frames, check boxes, option button, designing the user interface. Default and cancel property, tab order, coding for controls using text, caption, value property and set focus method.	
	(c) Variable, constant and calculation. Variable and constant, data type (string, integer, currency, single, double, date).naming rules/conventions. Constant (named and intrinsic), declaring variable, val function, arithmetic operation, formatting data.	
	(d) Decision and condition. Condition, comparing numeric variable and constant, comparing string, comparing text property of text box, compound condition (And, Or, Not). If statement, if then- else statement LCase and Ucase function, Using if statement with Option Button & Check Boxes, MsgBox (Message box) statement input Validation: is Numeric function.	
	(e) Sub-procedures and sub-function, using common dialog box, creating a new sub-procedure, writing a function procedure. Simple loops using for next statement and do while statement and display output using MsgBox statement.	
	Total	45

Text Books:

1. **Computer Systems and Applications by Dr. Faiyaz Gadiwalla & Mukesh N. Tekwani, Sheth Publications Pvt. Ltd.**
2. **Computer Systems and Applications by Verus D'Sa, Manan Prakashan**

List of Topics for the practical:

Software Requirement: MS-Excel 2010, VB 6.0.

Sr. No.	Topic of the Practical	No. of practical
1	Advanced Spread Sheet	6
2	Introduction to Visual Basic	4

Details of Conduct of Practical Examination (Evaluation Scheme): At the end of the semester, examinations of 2 hours duration and 60 marks shall be held.

Details of Continuous Internal Assessment (CIA)

For continuous internal assessment, it is proposed to hold one class test (for 20 marks) and Practical examination (for 20 marks). Duration for each will be ½ hours.

Any other information: Batch size of practical batch/Tutorial batch as prescribed by University of Mumbai.