SOPHIA GIRLS' COLLEGE

(AUTONOMOUS)

AJMER

SYLLABUS

2023 (Batch)

FOR

B.A. / B.Sc. / B.Com. / English Honours /Economics Honours Vocational Computer Application

As per NEP Guidelines & Under Choice Based Credit System

NEP

Semester – I and IV

BACHELOR OF ARTS

Eligibility for admission in First Year of BA is 10+2 examination of any Board with at least 45% marks. With regard to admission on reserved category seats government rules will be applicable.

SCHEME OF EXAMINATION

The number of the paper and the maximum marks for each paper together, with the minimum marks required to pass are shown against each subject separately. It will be necessary for a candidate to pass in the theory as well as the practical part of a subject/paper, wherever prescribed, separately.

Classification of successful candidates shall be as follows:

First Division	60%	of the aggregate marks prescribed in Semesters I to VI taken together
Second Division	50%	

All the rest shall be declared to have passed the examination.

- For passing a candidate shall have to secure at least 40% marks in each course (Theory and Practical separately).
- No division shall be awarded in Semesters I to V.
- Whenever a candidate appears for a due paper examination, she will do so according to the syllabus in force.
- A candidate not appearing in any examination/absent in any paper of term end examination shall be considered as having DUE in those papers.

Program Outcome

The arts undergraduate program is designed to achieve the following outcomes-

1. To provide opportunities for the holistic development of the students and to enable them to make an effective contribution to the community, society and nation
2. To strive for scholastic excellence, instill moral values, create responsible citizens and to build global competencies
3. To create a conducive environment for experiential learning
4. To instill the core values of faith, integrity, accountability and creativity
5. To enable the students to contribute in building a more sustainable and equitable world
6. To enhance historical, political, environmental, spiritual, moral and ethical consciousness
7. To develop analytical and critical thinking skills in the field of research
8. To sensitize young minds through education towards social, cultural, psychological and economic well-being and to reach out to the underprivileged
9. To integrate and interlink knowledge, skills, values and attitudes to action
10. To provide a general understanding of the concepts and principles of selected areas of study thus enabling the students to decide upon specialized professional choices
11. To mould young girls into mature, responsible, just and empowered women.

Program Specific Outcome

On successful completion of B.A with Vocational Computer Application, the students will be able to-

- Enhance comprehensive understanding of the theory and its application in diverse fields.
- Develop programming skills, networking skills, applications designing and modern techniques of IT.
- Explore technical comprehension in varied areas of Computer Applications and cultivating skills for thriving careers and higher studies.
- Understand management and computing principles with computing knowledge to manage projects in multidisciplinary environments.
- Engage them in lifelong learning.

Examination Pattern

Maximum Marks : 50 **Duration : 2½Hrs.**

Section A 10 * 1 =10 marks

Contains 10 Questions of 1 mark each & all are compulsory to do.
Three questions from each unit (but 4 questions from one unit) 3 + 3 + 4 = 10 Questions

Section B 3+3+4 = 10 marks

Contains 3 questions with internal choice (Two questions from each unit).
(2 Questions of 3 marks & 1 Question of 4 marks)
Student has to do 3 questions and at least one question from each unit.

Section C 3 * 10 = 30 marks

Contains 3 questions with internal choice (Two questions from each unit).
Each Question carries 10 marks. Student has to do 3 questions and at least one question from each unit.

Note:

1. A Laboratory Exercise File should be prepared by each student for each practical paper and should be submitted during practical examinations.
2. One internal and one external examiner shall conduct two practical exams, in a day, of a batch of 60 students.
3. Duration of practical exam is 3 hours.
4. Practical of 40 marks distribution is as under:
   20 marks for practical examination exercise for 4 questions.
   10 marks for Viva-voce
   10 marks for Laboratory Exercise File.

Course Structure for B.A. I Year

Semester – I								
Paper Code	Nomenclature	Credits	Contact Hours Per Week	Total Marks		Max. Marks	Min. Marks	Duration
				CIA	ESE			
MNVCA-101	Fundamentals of Computer and PC Software	03	03	25	50	75	30	2 ½ Hr.
MNVCA-102	Practical	02	01	-	25	25	10	2 ½ Hr.
Semester - II								
MNVCA-201	Fundamental of 'C' Programming	03	03	25	50	75	30	2 ½ Hr.
MNVCA-202	Practical	02	01	-	25	25	10	2 ½ Hr.

Semester I

MNVCA – 101: Fundamentals of Computer and PC Software

Max. Marks: 75 **Min. Marks: 30**
Credits: 03 **Duration: 2 ½ hrs**

Learning Outcome: On successful completion of the course, the students will be able to

1. Describe the computer system and identify its types.
2. Illustrate the use of different input devices.
3. Categorize different output devices on the basis on operation.
4. Summarize the different aspects of data processing.

Unit - I

Introduction to Computer: Definition, Diagram, Characteristics, Classification of Computers: Analog Computers, Digital Computers, Hybrid Computers, Classifications of computer on the basis of size and speed, different type of computers, Indian Super Computer, Applications of Computers

Input Devices: keyboard, mouse, touch pad, and touch screens, data scanning devices, and optical recognition systems: bar code readers, optical mark readers, Optical character reader. Digital camera

Unit – II

Output Devices: Hard copy devices: Printer (impact printers), dot matrix printer, line printer, (non-impact printers), inkjet, laser printer, 3D printer, barcode printers. Soft copy devices: (Computer Display) CRT, Flat Panel Display: LCD, plasma display panel.

Introduction to memory: classifications, volatile memory, non-volatile memory

Software: System software, application software, programming software.

MS-Word: Introduction to MS-Word, Features, Application Areas and its uses, types of views, Creating & Saving: New Document, copy, cut, paste, paste special, clipboard, undo, redo, Fonts, Paragraphs: Indentation and Spacing, Columns & Breaks, Styles, Find, Replace & Goto. Inserting Tables, Picture, ClipArt, Shapes, Smart Art and Charts, Symbols and Equations, Hyperlink, Bookmark. Header & Footer. DropCap, Textbox, WordArt, Date and Time. Table of contents, Footnotes and Endnotes, Page background. Mail merge, Macros, Auto correct and Auto Text. Comments, Page Setup, Size, Margins, Gutter, Orientation.

UNIT-III

MS-Excel: MS-Excel: Introduction, Features, Application Areas and its uses, views and its types, formatting and its types. **Charts**: Line, bar, column, area, pie. Pivot Tables, Data management (Sort, filters, Validation, consolidation, Text to column), auditing and tracing.

Functions and Formulas -Text: char, concatenate exact, find, left, right, mid, lower, upper, proper, search, substitute, trim. **Logical:** and, or, not **Math and trig:** abs, int, even, odd, fact, mod, pi, power, product, round, roman, sign, sqrt, trim. **Statistical:** Average, count. Protecting sheet and workbook.

MS-PowerPoint: Introduction to PowerPoint, Features, Application Areas and its uses, Creating Presentations through Blank Presentations, Templates, Slide Master, Views of PowerPoint, Formatting of Presentations: Inserting Graphics and Animations, Formatting & Customizing Presentations: Slide Transactions, Custom Animation, Inserting sounds. Set up and Custom Slide Show, Handouts.

Reference Books:

- Pradeep K. Sinha, Priti Sinha, "Computer Fundamentals". BPB Publications.
- Rajaraman, V., "Fundamental of Computers". Prentice Hall India, New Delhi.
- Fundamentals Of Information Technology, 2E , Alexis Leon & Mathews Leon,Vikas Publishing
- Microsoft Office 2007 – Joyce Cox & Joan Preppernau – PHI Publication
- Working in Microsoft Office- Ron Mans Field, TMH

Semester II

MNVCA – 201: Fundamentals of 'C' Programming

Max. Marks: 75 **Min. Marks: 30**
Credits: 03 **Duration: 2 ½ hrs**

Learning Outcome: On successful completion of the course, the students will be able to

1. Understand basic concepts of programming language
2. Choose the loops and decision making statements to solve the problem
3. Implement different operations on array
4. Design, implement, test and debug programs that use different data types, such as simple variables, arrays, and structures.

Unit – I

'C' Language: Character Set, Keywords, Constants, Variables, Data Types, Type Conversion, Instruction & its types: **Input Output Instructions**, Operators & Expressions: Arithmetic, Relational, Logical, Conditional, Arithmetic Instructions.

Control Instructions: Decision Control (if, if-else, if else ladder, nested if, switch case), Loop Control (while, for, do-while, Nesting Loops), Jump statements (break, continue, goto)

Unit – II

Arrays: - Concept of Arrays, one dimensional array & Two dimensional array, Storage strategy, Array Initialization, Operations on Arrays (traversing, addition, subtraction, transpose), Search - linear & binary. Sorting - bubble sort & selection sort.

Functions: - Declaration, Calling (Call by value, Call by reference) & Definition of functions, Recursion, Storage Class (auto, static, register, extern), Scope rules (Local, Global).

UNIT-III

Pointers: - Pointers and addresses, Pointers as Function arguments, Pointers and Arrays, Address Arithmetic. Character Pointers, String handling and String functions (strlen, strcat, strcmp, strcmpi, strrev, strcpy).

Structure and Union: Basics, Structures and Functions, Arrays of Structures, structure pointer variables. Union definition and its use.

Reference Books:

- Let Us 'C' -Yashavant PKanetkar, BPB Publications
- Programming in Ansi 'C' – Balaguruswami – TMH.
- C' Programmiung Language – Kernighan & Ritchie - PHI
- C' How to Program – Dietel & Dietel – PHI
- C' Programmiung - Dr. Neeraj Bhargava & Dr. Ritu Bhargava, Alka Publicationas

Course Structure for B.A. II Year

Paper Code	Nomenclature	Credits	Contact Hours Per Week	Total Marks		Max. Marks	Min. Marks	Duration
				CIA	ESE			
Semester III								
MNVCA-301	Database Management System	03	03	25	50	75	30	2 ½ Hr.
MNVCA-302	Practical	02	01	-	25	25	10	2 ½ Hr.
Semester IV								
MNVCA-401	Web Technology	03	03	25	50	75	30	2 ½ Hr.
MNVCA-402	Practical	02	01	-	25	25	10	2 ½ Hr.

Semester III

MNVCA-301: Database Management System

Max. Marks: 75 **Min. Marks: 30**
Credit: 03 **Duration: 2½ Hrs**

Learning Outcome: On successful completion of the course, the students will be able to

1. Understanding of Database Concepts.
2. Proficiency in Database Design.
3. Competence in Querying and Manipulating Data.
4. Gain knowledge of transaction management, including the ACID properties of transactions, transaction states, and the use of transaction logs for recovery.
5. Understand concurrency control mechanisms such as locking, and learn how to ensure data consistency and handle concurrent access to the database.

Unit – I

Introduction of DBMS: Basic DBMS terminology, DBMS v/s File processing system, advantages and disadvantages of DBMS, DBA and his responsibilities, Database Abstraction, physical and logical data independence, architecture of DBMS: Client/server architecture, 2 Tier & 3 Tier. Data Models: Overview of hierarchical, network and relational models.

Entity-Relationship Model: Concept, Entity, Entity Set, Attributes, degree of relationship, Relationships, keys(types), Generalization, Specialization, Aggregation, Implementation of sequential , random & indexed sequential file organization.

Unit – II

Relational Algebra: Set Operators (Union, Intersection, Set-Difference, Cartesian product), **Relational Operators:** (Select, Project, Rename, Join), Decomposition of Relation Schemes, Dependencies and its types, Normalization up to BCNF. Relational query language: DDL, DML, DCL, Database Integrity, Security, authorization access matrix, concurrency control, locking, Serializability, recovery techniques. Transaction management: life cycle of transaction, ACID Properties, E. F. Codd's rules.

Unit – III

Constraints: Null Constraint, Primary Key, Unique key constraint, Foreign Key constraint, domain key constraint, Check Constraints, & Not Null.

Introduction to SQL: Characteristics of SQL, Advantages of SQL, SQL data types and literals, Types of SQL commands, SQL operators, Searching, Matching & Basic Oracle Functions: String, Numeric, and Aggregate Functions. Tables, views and indexes, Queries based on group by clause, order by clause, having clause, Unions, Intersection, Minus SQL. Sub queries & joins.

Reference Books:

- Fundamentals of Database Systems- Elmasri And Navathe
- An Introduction to Database Management System - Bipin C. Desai
- An Introduction to Database system-C.J. Date Narosa Publishing House.
- SQL, PL/SQL The Programming Language of Oracle -Ivan Bayross

- Understanding SQL- Martin Gruber

Semester IV

MNVCA-401: Web Technology

Max. Marks: 75 **Min Marks: 30**
Credit: 03 **Duration: 2½ Hrs**

Learning Outcome: On successful completion of the course, the students will be able to:

1. Get familiar with basics of the Internet contrast between static and dynamic webpages
2. Implement the functions of Date, Math and String objects
3. Design website using both the scripting languages
4. Impart knowledge server side programming using PHP
5. Develop the decision making statement logic under different concepts using XAMP server

Unit I

Introduction of HTML: introduction, markup language, editing common tags, headers, text styles, working with Links: creating a hyperlink, selecting hyperlink color, linking different sections of the webpage, formatting text, horizontal rules and more line breaks, unordered lists, nested and ordered lists.

Working with images: inserting an image, adding border to image, aligning an image, using image as hyperlink.

Working with tables: creating table, specifying caption to a table, setting width of table and table columns, setting cell spacing and padding, spanning rows and columns, image maps.

Unit II

Basic HTML forms, working with frames: creating vertical and horizontal frames, applying hyperlink targets to a frame.

Cascading style sheets: inline, internal and external style sheets.

PHP ─ Introduction, Common Uses of PHP, Characteristics of PHP, PHP ─ Environment Setup (XAMPP),

PHP ─ Syntax, Variable, Local Variables, Global Variables, Static Variables, Constants, Operator Types, Precedence of Operators

Unit – III

PHP: Decision Making: If...Else Statement, ElseIf Statement, Switch Statement,

Loop Types: while, do...while, for, for each, break, continue,

Arrays: Numeric Array, Associative Arrays, Multidimensional Arrays, Strings function, Web Concepts, GET and POST, File Inclusion, File & I/O

PHP : Functions, Cookies, Sessions, Sending, File Uploading, Error and Exception Handling, **PHP PHP and MySQL**: Connecting to MySQL Database, Create MySQL Database Using PHP, Insert MySQL Database Using PHP, Delete Data to MySQL Database, Retrieving Data from MySQL Database

Reference Books:-

- Introduction to Java Programming, Y. Daniel Liang, PHI.
- Java Complete Reference, Patrick Naughton, Tata McGraw Hill.
- The Java Handbook, Patrick Naughton, Tata McGraw Hill.
- PHP A Beginners Guide – VikramVaswani – McGraw Hill
- Programming PHP – Kevin Tatroe, Peter Macintyre – O'Reilly
- PHP & My SQL Web Development – Laura Thompson & Luke Welling – Addison Wesley