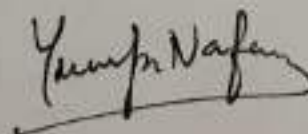


HAMIDIA GIRLS' DEGREE COLLEGE, ALLAHABAD
UNIVERSITY OF ALLAHABAD

Syllabus for Vocational Subject in B.A.
Computer Application in Social Sciences (CAS)

		B.A. I	Marks
Paper I	Computer Fundamentals		40
Paper II	Introductory Statistics		40
Internal Assessment	Assignment I		15
	Assignment II		15
External Assessment	Practical and Viva-Voce		40
Total			150
		B.A. II	
Paper I	C Programming		40
Paper II	Design of Experiments, Sampling Theory & Simulation		40
Internal Assessment	Assignment I		15
	Assignment II		15
External Assessment	Practical and Viva-Voce		40
Total			150
		B.A. III	
Paper I	Web Designing and Software Tools		75
Paper II	Advanced Statistical Analysis		75
Internal Assessment	Assignment I		10
	Assignment II		10
	On the Job Training and Project		25
External Assessment	Practical and Viva-Voce		30
Total			225



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Computer Applications in Social Sciences

B.A. I

Paper I - Computer Fundamentals

Introduction: Introduction to computer system, uses, types. **Data Representation:** Number systems (Binary, Octal & Hexadecimal) and character representation (ASCII & EBCDIC), Types of software, Operating system as user interface, C.P.U.

Memory and Devices: Primary, secondary, auxiliary memory, RAM, ROM, cache memory, hard disks, optical disks, Input and output devices - keyboard, mouse, scanner, OCR, OMR, barcode reader, web camera, LCD & LED monitor, printer, plotter.

Computer Networks & Internet: Introduction to computer network, data communication, LAN, MAN, WAN, internet, intranet, extranet. **Internet:** Web page, Home page, website, internet browsers, URL, Hypertext, ISP, Web server, www, search engines

Word Processing: MS-Word basics, formatting text and documents, working with headers, footers and footnotes, tabs, tables and sorting, Working with graphics and introduction to mail merge.

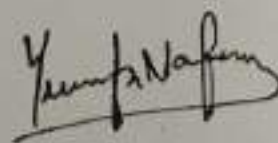
Spreadsheet: MS-Excel basics, rearranging worksheets, Introduction to functions, Excel chart features, Using worksheet as a Database.

Presentations: MS- PowerPoint basics, creating presentation the easy way, working with graphics, Inserting various objects (Picture, Organizational Chart, Audio, Video etc) in slide, Adding Animation effects in slide.

Overview of Emerging Technologies: Bluetooth, cloud computing, big data, data mining, mobile computing and embedded systems.

Use of Computers in Education and Research: Academic Search Engines: Google Scholar, Microsoft Academic, BASE etc. e-Library, Domain specific packages such as SPSS.

Applications: Computer applications in Artificial Intelligence, Medicine and advanced applications.



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Computer Applications in Social Sciences

B.A. I

Paper II – Introductory Statistics

Introduction to statistics & process of statistical research. Collecting data, Summarizing data numerically and graphically, Methods for determination of patterns and relationship among variables, Brief introduction to Averages and dispersion, Common Elements of research design, Contemporary description and analysis of single samples of data.

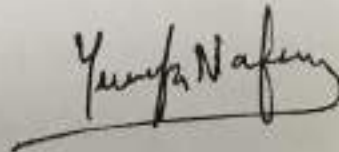
Graphical data presentation methods for determination of patterns and relationship among variables.

Introduction to Correlations and Regression.

Frequency distribution, relative frequency, probability distribution. Brief introduction to some specific distribution (Binomial, Poisson, and Normal). Concepts of Expected values and Standard error, Concept of Hypothesis tests. Tests of Significance. Introduction and applications of z test, t-test, Chi-square test, F test, Non-parametric tests. Test for independence, Drawing conclusions.

Basics of Questionnaire designing and it's reliability analysis.

Creating and editing data file & Managing data.



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Computer Applications in Social Sciences

B.A. II

Paper I - C Programming

Algorithm: An Introduction, Properties of an algorithm, algorithm logic, flowchart.

Program design and implementation issues: programming system design technique, Programming technique, basic constructs of structured programming, modular designing of programs

Programming Environment Languages - Low level programming language, Middle level programming language, High level programming language, object code, source code, executable code, Translator - assembler, compiler and interpreter.

Introduction to the C Language: The C Language and its Advantages, The Structure of a C Program, Writing and Building an Executable Version of a C Program, Debugging-Examining and Running a C Program, Character set, Constants, Variables, keywords, identifiers, data types, storage classes- automatic or local variables, global variables, static variables. Basic input & output function – printf() and scanf()

C Operators: Operators and its different types, Precedence of operators.

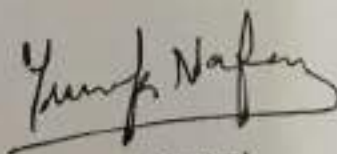
Flow control instructions: decision control instructions- if, if-else, nested if-else, loop control instructions - for loop, while loop, do while; break, continue, goto, switch case control structure.

Arrays: what is an array, array declaration, array initialization, accessing individual elements of an array, two dimensional arrays, passing an array element to a function.

Function: Need of function, declaring function, defining function, calling function, types of function, parameter passing. Recursion, Library functions.

Strings: what are strings, standard library string function strlen(), strcpy(), strcat(), ~~strcmp(), strcmp(), character & string input output functions.~~

An overview of Structure.



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Computer Applications in Social Sciences

B.A. II

Paper II – Design of Experiments, Sampling Theory & Simulation

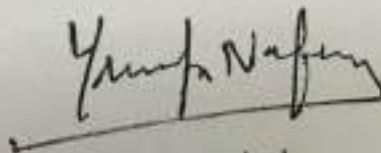
Introduction to Experimental design and their basic principles. Completely randomized, randomized block, factorial, nested, Latin squares, Split-plot and Incomplete block designs, Response surface and covariance adjustment procedures.

Analysis of Variance and residuals.

Analysis of covariance , Interactions effects, Dummy Variables.

Sampling, Design principles pertaining to planning and execution of a sample survey, simple random, stratified random, systematic and one- and two-stage cluster sampling designs, Emphasis on statistical considerations in analysis of sample survey data , Chance Errors in Sampling, Sampling error. Concept of non-sampling errors.

Basic concept and examples of Monte Carlo simulation.



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Computer Applications in Social Sciences

B.A. III

Paper I – Web Designing and Software Tools

Web Design Principles: Basic principles involved in developing a web site, Planning process, Five Golden rules of web designing, Designing navigation bar, Page design , Home Page Layout, Design Concept.

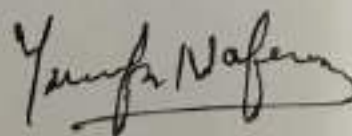
Basics in Web Design: Brief History of Internet, What is World Wide Web, Why create a web site, Web Standards, Audience requirement.

Introduction to HTML: What is HTML, HTML Documents, Basic structure of an HTML document, Creating an HTML document, Mark up Tags, Heading-Paragraphs, Line Breaks, HTML Tags.

Elements of HTML: Introduction to elements of HTML, Working with Text, Working with Lists, Tables and Frames, Working with Hyperlinks, Images and Multimedia, Working with Forms and controls.

Introduction to Cascading Style Sheets: Concept of CSS, Creating Style Sheet, CSS Properties, CSS Styling(Background, Text Format, Controlling Fonts), Working with block elements and objects, Working with Lists and Tables, CSS Id and Class, Box Model (Introduction, Border properties, Padding Properties, Margin properties), CSS Advanced(Grouping, Dimension, Display, Positioning, Floating, Align, Pseudo class, Navigation Bar, Image Sprites, Attribute sector), CSS Color, Creating page Layout and Site Designs.

Introduction to: JavaScript, Bootstrap, Adobe Dreamweaver, Adobe Flash, Available Software for Graphic Designing, Animation Techniques, Python.



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Computer Applications in Social Sciences

B.A. III

Paper II –Advanced Statistical Analysis

Regression Analysis: Bivariate and Multiple

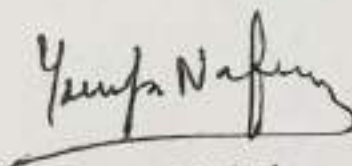
Multidimensional scaling: Concept and models with examples.

Principle Component Analysis, Factor Analysis and Rotation.

Cluster analysis: Concept and procedures.

Discriminant Analysis: Concept, applications and examples.

Logistic regression: Concept, applications and examples.



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