2.6.1 Teachers and students are aware of the stated programme and course outcomes of the programmes offered by the institution.

LPCPS
LUCKNOW PUBLIC COLLEGE OF PROFESSIONAL STUDIES

LUCKNOW PUBLIC COLLEGE OF PROFESSIONAL STUDIES

BACHELOR OF COMPUTER APPLICATION (BCA)

(SESSION 2022-2023)

2.6.1 Teachers and students are aware of the stated programme and course outcomes of the programmes offered by the institution.

BACHELOR OF COMPUTER APPLICATION (BCA)

(THREE YEAR PROGRAMME)

After Completing Bachelors in Computer Applications (BCA) students are able to improve their fundamental computer literacy, their basic understanding of operative systems and a working knowledge of software commonly used in academic and professional environment by using word processor, spreadsheet and other application software. Students will also develop skills to present ideas effectively and efficiently through professional presentations - Designing and delivering an effective presentation and developing the various IT skills to electronic databases. Student can use the Systems Analysis Design paradigm to critically analyze a problem and solve problems (programming networking database and Web design) in the Information Technology environment. Function effectively on teams to accomplish a common goal. BCA program enables student Develop IT oriented security issues and protocols and make them able to design a web page.

Programme Outcomes (PO):

- To develop skilled and professionally motivated technocrats, equipped with critical reasoning and ethical values that fosters scientific temperament with a sense of social responsibility.
- To produce knowledgeable and competent human resources who are employable in all walks of life.
- To create, identify and implement appropriate techniques, resources, and modern engineering and IT tools.
- To impart expertise required for planning, designing and building complex software systems as well as provide support to automated systems.
- To develop caliber in the students to tackle both personal and social challenges and improve the quality of life.
- Students after this course have the option to join Indian Civil Services as IAS, IFS etc.

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- Science graduates can go to serve in industries or may opt for establishing their own industrial unit.
- After the completion of the B.C.A. degree there are various other options available for the science students. Often, in some reputed universities or colleges in India and abroad the students are recruited directly by big MNC's after their completion of the course.
- Apart from the research jobs, students can also work or get jobs in Marketing, Business & Other technical fields. B.C.A. graduates also recruited in the banking sector to work as customer service executives. Students can also find employment in government sectors.

Program Specific Outcomes (PSO):

- Ability to acquire knowledge in various fields of computer science, and to apply in industry, entrepreneurship and/or higher studies, for a thriving career.
- Understanding to incorporate knowledge of computing and technological advances appropriate to the program.
- Ability to develop software systems to enable the convenient use of the computing system and possess technical credentials.
- Ability to exercise the principles of management and strategic concepts required for teamwork as well as team management.
- To prepare broadly educated, ethical and responsible citizens.

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Syllabus

Paper Code	Subject List
	Semester-1
BCA 101	ESSENTIAL OF PROFESSIONAL COMMUNICATION
BCA 102	PRINCIPLES OF MANAGEMENT
BCA 103	MATHEMATICS-1
BCA 104	COMPUTER FUNDAMENTALS & PROGRAMMING IN C
BCA 105	FUNDAMENTALS OF ENVIRONMENT SCIENCE
BCA106P	COMPUTER APPLICATION LAB
BCA107P	PROGRAMMING IN C LAB
BCA108P	PROFESSIONAL COMMUNICATION LAB
	Semester-2
BCA 201	MATHEMATICS II
BCA 202	ADVANCED PROFESSIONAL COMMUNICATION
BCA 203	DIGITAL ELECTRONICS AND COMPUTER ORGANISATION
BCA 204	DATA STRUCTURE USING C
BCA 205	ACCOUNTING & FINANCIAL MANAGEMENT
BCA206P	ADVANCED PROFESSIONAL COMMUNICATION LAB
BCA207P	DATA STRUCTURE LAB
BCA208P	DIGITAL ELECTRONICS AND COMPUTER ORGANISATION LAB
	Semester-3
BCA301	COMPUTER BASED NUMERICAL AND STATISTICAL TECHNIQUE
BCA302	OBJECT ORIENTED PROGRAMMING USING JAVA
BCA303	OPERATING SYSTEM
BCA304	MANAGEMENT INFORMATION SYSTEM
BCA305	COMPUTER ARCHITECHTURE
BCA306P	COMPUTER BASED NUMERICAL AND STATISTICAL TECHNIQUE LAB
BCA307P	OBJECT ORIENTED PROGRAMMING USING JAVA LAB
BCA308P	OPERATING SYSTEM LAB
	Semester-4
BCA-401	DISCRETE MATHEMATICS
BCA-402	BUSINESS ECONOMICS
BCA-403	COMPUTER GRAPHICS AND MULTIMEDIA SYSTEM
BCA-404	DATABASE MANAGEMENT SYSTEM
BCA-405	SOFTWARE ENGINEERING
BCA-406P	COMPUTER GRAPHICS AND MULTIMEDIA SYSTEM LAB

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BCA-407P	DATABASE MANAGEMENT SYSTEM LAB
BCA-408P	SOFTWARE ENGINEERING LAB
Semester-5	
BCA-501	DATA COMMUNICATION AND COMPUTER NETWORK
BCA-502	DESIGN AND ANALYSIS OF ALGORITHM
BCA-503	WEB DESIGN CONCEPT
BCA-504	UNIX AND SHELL PROGRAMMING
BCA-5051	ELECTIVE PAPER 1-DATA MINING AND WAREHOUSING
BCA-5052	ELECTIVE PAPER 2: SOFTWARE TESTING METHODOLOGY
BCA-5053	ELECTIVE PAPER 3: OPEN SOURCE SOFTWARE
BCA-5054	ELECTIVE PAPER 4: INFORMATION SYSTEM: ANALYSIS, DESIGN & IMPLEMENTATION
BCA-506P	UNIX AND SHELL PROGRAMMING LAB
BCA-507P	WEB DESIGN LAB
BCA-508P	VIVA VOCE ON SUMMER TRAINING
Semester-6	
BCA-601	E-COMMERCE
BCA-602	CYBER LAW AND INTERNET SECURITY
BCA-603	MOBILE COMPUTING
BCA-6041	ELECTIVE PAPER 1: OPTIMIZATION TECHNIQUE
BCA-6042	ELECTIVE PAPER 2: MICROPROCESSOR
BCA-6043	ELECTIVE PAPER 3: DATA COMPRESSION
BCA-6044	ELECTIVE PAPER 4: CRYPTOGRAPHY
BCA-605P	ADVANCED TECHNOLOGY (DOTNET LAB)

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COURSE OUTCOMES (COs)

SEMESTER I

THEORY
ESSENTIAL OF PROFESSIONAL COMMUNICATION:
BCA-101

- Students shall be able to understand English when it is spoken in various contexts and modify language to convey ideas to the audience clearly and concisely.
- Students shall be able to speak intelligibly using appropriate word stress, sentence stress and elementary intonation patterns.
- Students shall be able to write well-presented business document in the required format (Reports, Proposal, Business Letter, Basic E-mail etiquettes).
- Students shall locate direct information with associative comprehension and convey ideas accurately with aspects of grammar and vocabulary.

THEORY
PRINCIPLE OF MANAGEMENT:
BCA-102

- The students will be able to identify, analyze and express one's own stance on social responsibility and ethics of business circumstances.
- The students will be able to cogitate on evolution, functions and principles of Management, and comprehensively grasp managers' tasks such as planning, decision-making, directing, negotiating and problem-solving.
- The students will be able to develop cognizance of the importance of human behavior and analyze the complexities associated with management of the group behavior in the organization.

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- The students will be able to understand the traits, dimensions, and styles of effective leaders and, the relationship between strategic, tactical, and operational plans for effective Management.

THEORY
MATHEMATICS:
BCA-103

- Demonstrate competency in the areas that comprise the core of the mathematics major.
- Demonstrate the ability to understand and write mathematical proofs.
- Be able to use appropriate technologies to solve mathematical problems.
- Be able to construct appropriate mathematical models to solve a variety of practical problems.
- . Obtain a full-time position in a related field or placement.
-

THEORY
COMPUTER FUNDAMENTAL & PROGRAMMING IN C:
BCA-104

Upon successful completion of this course, students will be able to understand

- Block diagram/components & Characteristics of Computer along with its generations.
- Various types of input & output devices
- number system along with their mutual conversion
- classification of computer language & concepts of language translator
- the basic terminology used in computer programming
- Understands the basic concepts of algorithm, flowchart, constant, variables, and data type, operators, & expression & be able to design & solve complex problems.
- Write, compile and debug programs in C language.
- Exercise different user defined data types to solve problems.

2.6.1 Teachers and students are aware of the stated programme and course outcomes of the programmes offered by the institution.

- Design programs involving decision structures, loops and functions.
- Study thoroughly the arrays, character arrays & strings
- Learn & write programs using predefined & userdefined functions for breaking a problems into logical modules that can be solved structures, unions & pointers for solving computational problems.
- Explain the difference between call by value and call by reference
- Understand the dynamics of memory by the use of pointers and Structures.

THEORY

FUNDAMENTAL OF ENVIORNMENTAL SCIENCES:

BCA-105

- Appreciate concepts and methods from ecological and physical sciences and their application in environmental problem solving. Ecosystem Links between environmental components and their role.
- Basic Structure of atmosphere and their functions Current problems related issues Students will apply knowledge of the sciences within an interdisciplinary context in solving environmental issues such as environmental health, food and agriculture, energy, waste and pollution, climate change, management, and loss of biodiversity.
- Basic knowledge about water recourses, current problems related issues, water born diseases, technologies of water treatment.
- Level of sound and their units, sources and effects of noise pollution, control measures.
- Concept of non Conventional energy resources, types and various applications of renewable resources and current potentials of energy resources.

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COMPUTER APPLICATION LAB:

BCA-106P

- To understand the concept of program and its development procedure.
- To understand the concept of algorithms and Flowcharts for solving problems
- To understand the use of the C programming language to implement various algorithms, and develops the basic concepts and terminology of programming in general.
- Introduces the more advanced features of the C language

PRACTICAL

PROGRAMMING IN C LAB:

BCA-107P

- Recognize and understand the syntax and construction of C programming code
- Know the steps involved in compiling, linking and debugging C code.
- Write the C code for a given algorithm.
- Understand using header files
- Acquire logical thinking, Implement the algorithms and analyze their complexity, Identify the correct and efficient ways of solving problems
- Read, understand and trace the execution of programs written in C language.
- Learn the methods of iteration or looping and branching
- Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.
- Develop conditional &iterative statements to write C program
- Understand proper use of user defined functions
- Implement real time applications using the power of C language features.

PRACTICAL

PROFESSIONAL COMMUNICATION LAB:

BCA-108P

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2.6.1 Teachers and students are aware of the stated programme and course outcomes of the programmes offered by the institution.

- To learn the basics of English grammar
- To learn to create sentences in English and basic techniques for appearing the GD and Interviews.
- To learn basics of letter writing
- To learn to write different types of applications and report writing techniques.

SEMESTER II

THEORY

MATHEMATICS-II:

BCA-201

- Demonstrate competency in the areas that comprise the core of the mathematics major.
- Demonstrate the ability to understand and write mathematical proofs.
- Be able to use appropriate technologies to solve mathematical problems.
- Be able to construct appropriate mathematical models to solve a variety of practical problems.
- . Obtain a full-time position in a related field or placement.

THEORY

ADVANCED PROFESSIONAL COMMUNICATION:

BCA-202

- Students will be able to understand and apply knowledge of human communication and language processes as they occur across various contexts, e.g., interpersonal, intrapersonal, small group, organizational, media, gender, family, intercultural communication, technologically mediated communication, etc. from multiple perspectives.
- Presentation skills training courses provide strategies to plan, structure and deliver powerful presentations. Learn how to structure presentations in order to deliver effective messages as well as receive the coaching to dramatically improve your personal presentation. This specific program is one of the leading presentation skills training courses developed to help people engage audiences.
- A group discussion among students is being organized to see and evaluate their thinking skills, listening abilities and how they are communicating their

thoughts. One should learn to control the conversation through listening attentively and then having the perseverance to mould it towards his/her own direction.

- Develop, exhibit and accurate sense of self and nurture a deep understanding of personal motivation. Develop an understanding of and practice personal and professional responsibility.
- To practice and develop writing processes pertaining to invention, revision, organization, drafting through multiple drafts, editing, and adjusting for rhetorical context (purpose, audience, persona). To 4 discuss and share writing and reading with one another and develop a shared vocabulary for talking about writing.

THEORY
DIGITAL ELECTRONICS AND COMPUTER ORGANIZATION:
BCA-203

- Convert different type of codes and number systems which are used in digital transmission and computer systems.
- Apply the codes and number systems converting circuits and Compare different types of logic families which are the basic unit of different types of logic gates in the domain of economy, performance and efficiency.
- Analyze different types of digital electronic circuit using various mapping and logical tools and know the techniques to prepare the most simplified circuit using various mapping and mathematical methods.
- Design different types of with and without memory element digital electronic circuits for particular operation, within the real time of economic, performance, efficiency, user friendly and environmental constraints.
- Assess the nomenclature and technology in the area of various memory devices used and apply the memory devices in different types of digital circuits for real world application.

THEORY
DATA STRUCTURE USING C:
BCA-204

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- Understand the concept of Dynamic memory management, data types, algorithms, Big O notation. Understand basic data structures such as arrays .Link List its types & various operations that can be performed on link list. Students will be able to understand array & Linked list implementation of stacks and queues. Basic operation of Stack & queue. Analysis of recursive Algorithms& their types.
- Concept of tree its terminology, various tree representation techniques. Implementation of Tree traversal. Binary Search Trees Balanced Search Trees: AVL, RBT, Splay-Heaps: Binary heap. Various type of searching techniques. Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data. Describe the hash function and concepts of collision and its resolution methods. Representation –Graph & its types, Adjacency & Incidence matrix. Spanning Tree, Minimum cost spanning tree. Graph Traversal algorithm. Shortest path algorithms: Unweight shortest path, Dijikstra's algorithm..Solve problem involving graphs, trees and heaps.

THEORY
ACCOUNTING AND FINANCIAL MANAGEMENT:
BCA-205

- Demonstrate the role of accounting in business in economic world.
- Explain the principles of accounting and book keeping.
- Apply accounting rules in determining financial results and preparation of financial statement.
- Rectify errors caused during preparation of Final accounts.
- Use software in preparation of Financial Statements.

PRACTICAL
ADVANCE PROFESSIONAL COMMUNICATION LAB:
BCA-206P

- Comprehend conversations and speeches.

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- Speak with clarity and confidence, thereby enhancing their employability skills.
- Identify his/her creative self, and express effectively the same in writing.
- Explain the advantages of teamwork and how the tasks could be completed effectively when done as a cohesive unit.
- Realize that selecting goal is a fundamental component to long-term success of an individual.
- Enable students to understand different aspects of leadership and evaluate in their own strengths.
- Be more organized and disciplined.

PRACTICAL
DATA STRUCTURE LAB:
BCA-207P

- Be able to design and analyze the time and space efficiency of the data structure.
- Be capable to identity the appropriate data structure for given problem.
- Have practical knowledge on the applications of data structures.

PRACTICAL
DIGITAL ELECTRONICS AND COMPUTER ORGANIZATION LAB:
BCA-208P

- Understand the computer structure with its components, instruction cycle and interrupts.
- Recognize the internal and external memory with its characteristics and different models.
- Understand the I/O modules, I/O channels and processes. Understand the DMA concept.
- Study advanced architecture of system with parallel processing models and RISC and CISC.

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SEMESTER III

THEORY

COMPUTER BASED NUMERICAL AND STATISTICAL TECHNIQUES: BCA-301

- On completion of Course the student will be able to get Familiar with calculation and interpretation of errors in numerical method. The numerical methods to find out solution of transcendental & algebraic equations using different methods under different conditions. Methods to find solution of simultaneous equations by various methods
- On completion of Course the student will be able to get understands the concepts of finite differences. Gains knowledge about to interpolation for equal & unequal intervals .Relationship between different operators.
- On completion of Course the student will be able to get numerical Integration by trapezoidal & Simpson's rule. Distinguish methods of Taylor series, Euler's, Modified Euler's and RungeKutta methods to find solutions of differential equations.
- On completion of Course the student will be able to get various methods involved for Testing the hypothesis

THEORY

OBJECT ORIENTED PROGRAMMING USING JAVA: BCA-302

- Upon completion of this course, students should be able to understanding of the principles and practice of object oriented analysis and design in the construction of robust, maintainable programs which satisfy their requirements. The concept of OOP as well as the purpose and usage principles of inheritance, polymorphism, encapsulation and method overloading.
- Upon completion of this course, students should be able to identify classes, objects, members of a class and the relationships among them needed for a specific problem.
- Able to use class and proper class protection mechanism to provide security.
- Ability to implement, compile, test and run Java programs comprising more than one class, to address a particular software problem.

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- Demonstrate the ability to use simple data structures like arrays in a Java program. To demonstrate the ability to understand and use Exception handling and file handling mechanism. Arrange the concrete and abstract classes in an appropriate hierarchy.
- Explain the fundamental concepts and features of Java Programming language. Use and create Packages and Interfaces in a Java program Implements the Multithreading concepts

THEORY
OPERATING SYSTEM:
BCA-303

- Understand the basic working process of an operating system.
- Understand the importance of process and scheduling.
- Understand the issues in synchronization and memory management.

THEORY
MANAGEMENT INFORMATION SYSTEM:
BCA-304

- Students would be able to understand the usage of MIS in organizations and the constituents of the MIS.
- The student would understand the classifications of MIS, understanding of functional MIS and the different functionalities of these MIS. This would be followed by case study on Knowledge management.
- This module leads to linking MIS to business strategy and the areas in which MIS would lead to strategic advantage. This would be followed by case study and guest lecture.
- The student learns the functions and issues at each stage of system development. Further different ways in which systems can be developed are also learnt.
- This module provides understanding about emerging MIS technologies like ERP, CRM, SCM and trends in enterprise applications.

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THEORY
COMPUTER ARCHITECTURE:
BCA-305

- The student should understand the major architectural styles and appreciate the compromises that they encapsulate.
- They should be able to read outline descriptions of real processors and understand in which way their designs fit into the frameworks described in the course.
- They should also be able to understand the impact of design choices in programming in the context of a specific architecture.

PRACTICAL
COMPUTER BASED NUMERICAL AND STATISTICAL TECHNIQUE LAB:
BCA-306P

- Modeling a system or situation (using technology, if appropriate) in order to solve the problems using multiple approaches.
- Implementing the logic for finding the roots of transcendental equation using C Language.
- Implementing the logic for developing the C program for equal & unequal Interpolation methods.
- Implementing the logic for numerical Integration in C language
- Judge if the results are reasonable, and then interpret and clearly communicate the results

PRACTICAL
OBJECT ORIENTED PROGRAMMING JAWA LAB:
BCA-307P

- Implement Object Oriented programming concepts using basic syntaxes of control Structures, strings and function for developing skills of logic building activity.
- Identify classes, objects, members of a class and the relationships among them needed for a finding the solution to specific problem.

- Demonstrates how to achieve reusability using inheritance, interfaces and packages and describes faster application development can be achieved.
- Demonstrate understanding and use of different exception handling mechanisms and concept of multithreading for robust faster and efficient application development.

PRACTICAL

OPRATING SYSTEM LAB:

BCA-308P

- To make students able to implement CPU scheduling algorithms (like FCFS, RR, SJF, Priority) and Bankers algorithm used for deadlock avoidance and prevention.
- Students will also be able to implement page replacement (like FIFO, LRU, and Optimal) and memory management algorithms (like Sequential, Indexed, Linked File Allocation and Paging Memory Technique).

SEMESTER IV

THEORY

DISCRETE MATHEMATICS:

BCA-401

- Be able to reason at multiple levels of detail and abstraction, being aware, in particular, of the applicability and limitations of tools from mathematics and theoretical computer science.
- Recognize the context in which a computer system may function, including its interactions with people and the physical world.
- Able to communicate with, and learn from, experts from different domains throughout their careers.

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- Possess a solid foundation that allows and encourages them to maintain relevant skills as the field evolves.
- To be able to manage their own career development and advancement.
- Manage their own learning and development, including managing time, priorities, and progress.
- Have developed interpersonal communication skills as part of their project experience.
- Work effectively both individually and as members of teams.
- Make effective presentations to a wide range of audiences about technical problems and their solutions.
- Encompass an appreciation of the interplay between theory and practice.

THEORY

BUSINESS ECONOMICS:

BCA-402

- Develop an understanding of the applications of managerial economics.
- Interpret regression analysis and discuss why it's employed in decision-making.
- Discuss optimization and utility including consumer behaviour.
- Assess the relationships between short-run and long-run costs.
- Analyze perfectly competitive markets including substitution.
- Explain uniform pricing and how it relates to price discrimination and total revenue.

THEORY

COMPUTER GRAPHICS AND MULTIMIDIA SYSTEMS:

BCA-403

- Students will demonstrate an understanding of contemporary graphics hardware.
- Students will create interactive graphics applications in C++ using one or more graphics.
- Students will create interactive graphics applications in C++ using one or more graphics application programming interfaces.
- Students will write program functions to implement graphics primitives.

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- Students will write programs that demonstrate geometrical transformations.

THEORY
DATA BASE MANAGEMENT SYSTEM:
BCA-404

- Understand, appreciate and effectively explain the underlying concepts of database Technologies.
- Design and implement a database schema for a given problem-domain.
- Normalize a database and Populate and query a database using SQL DML/DDL commands.
- Declare and enforce integrity constraints on a database.
- Concept of transaction and concurrency.

THEORY
SOFTWARE ENGINEERING:
BCA-405

- Understand the importance of the stages in the software life cycle.
- Understand the various process models.
- Be able to design software by applying the software engineering principles.

PRACTICAL
COMPUTER GRAPHICS AND MULTI MEDIA SYSTEM LAB:
BCA-406P

- To develop the programs for computer graphics using C language.
- Demonstrate simple 2D animations using animation software (Like Dreamweaver 8.0, Flash Player 8.0)
- Prepare simple scenes using image editing software. (like Photoshop)

PRACTICAL
DBMS LAB:
BCA-407P

- Demonstrate an understanding of the relational data model.

- Transform an information model into a relational database schema and to use a data definition language and/or utilities to implement the schema using a DBMS.
- Formulate, using relational algebra, solutions to a broad range of query problems.
- Formulate, using SQL, solutions to a broad range of query and data update problems.

PRACTICAL
SOFTWARE ENGINEERING LAB:
BCA-408P

- Create models for software applications.
- Use the different UML notations for designing software.

SEMESTER V

THEORY
DATA COMMUNICATION AND COMPUTER NETWORK:
BCA-501

- Explain how communication works in computer networks and to understand the basic terminology of computer networks.
- Explain the role of protocols in networking and to analyze the services and features of the various layers in the protocol stack.
- Understand design issues in network security and to understand security threats, security services and mechanisms to counter.

THEORY
DESIGN AND ANALYSIS OF ALGORITHAM:
BCA-502

- Able to walk through insert and delete for different data structures.
- Ability to calculate and measure efficiency of code.
- Appreciate some interesting algorithms like Huffman, Quick Sort, and Shortest Path etc.

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- Able to walkthrough algorithm.
- Improve programming skills.

THEORY
WEB DESIGN CONCEPT:
BCA-503

- Understand, analyze and apply the role of languages like HTML, DHTML, CSS, XML, JavaScript, VBScript, ASP, PHP and protocols in the workings of the web and web applications. Analyze a web project and identify its elements and attributes in comparison to traditional projects.
- Understand, analyze and create web pages using HTML, DHTML and Cascading Styles Sheets.
- Understand, analyze and build dynamic web pages using JavaScript and VB Script (client side programming).
- Understand, analyze and build interactive web applications.
- Understand, analyze and build web applications using PHP.
- Understand, analyze and create XML documents and XML Schema.

THEORY
UNIX AND SHELL PROGRAMMING:
BCA-504

- Will be able to describe and use the LINUX operating system.
- Will be able to describe and use the fundamental LINUX system tools and utilities.
- We will able to describe and write shell scripts in order to perform basic shell programming.
- Will be able to describe and understand the LINUX file system.

THEORY *(ELECTIVE)*
DATA MINING AND DATA WAREHOUSHING:
BCA-505

- Have a deeper understanding of database systems and their underlying theory to be able to improve the decision-making process.
- Understand the technology of data warehousing.

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- Understand data mining concepts and techniques.

PRACTICAL
UNIX LAB:
BCA-506P

- Learn UNIX structure, commands, and utilities.
- Describe and understand the UNIX file system.
- Write shell scripts in order to perform shell programming.
- Acquire knowledge about text processing utilities, process management and system operation of UNIX.

PRACTICAL
WEB DESIGN LAB:
BCA-507P

- Successfully created HTML document with Tables, Frames using different tags layout.
- Successfully run a HTML program using JavaScript with variables, control structures and popup boxes.
- Understand object based programming and run programs with function objects.
- Understand JavaScript and Successfully run programs of JavaScript with HTML.

VIVA VOCE ON SUMMER TRAINNING
BCA-508P

SEMESTER VI

THEORY
E-COMMERCE:
BCA-601

- Have knowledge of e-commerce, its components, structure of e-banking, rules and regulations on ecommerce.

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2.6.1 Teachers and students are aware of the stated programme and course outcomes of the programmes offered by the institution.

- Acquire a good knowledge of e-commerce, both the technical and business aspects.
- Understand the principles and practices of e-commerce and its related technologies.
- Discuss the trends in e-Commerce and the use of the Internet.
- Explain the economic consequences of e-Commerce.

THEORY
CYBER LAW AND INTERNET SEQURITY:
BCA-602

- Understand the consequences of ignoring and non-compliance with ethical imperatives.
- Learn about the best ethical practices and models.
- Develop a sound methodology in resolving ethical conflicts and crisis.
- Learn about the issues directly related to information technology environment and professionals.

THEORY
MOBILE COMPUTING:
BCA-603

- Have the understanding of different generations, terminologies, systems, operations and design of wireless and mobile communications.
- Acquire sufficient knowledge about IEEE 802.11 and Bluetooth standards.
- Be able appreciate the contribution of Mobile and Wireless Communication networks to overall technological growth.
- Understand the concepts and technology involved in 3G, 4G and 5G Networks.

THEORY
OPTIMIZATION TECHNIQUES:
BCA-6041

After the completion of the course, students are expected to have the ability to:

- Understand the theory of optimization methods and algorithms developed for solving various types of optimization problems.

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- Develop and promote research interest in applying optimization techniques in problems of Engineering and Technology.
- Apply the mathematical results and numerical techniques of optimization theory to concrete Engineering problems.

THEORY
MICROPROCESSOR:
BCA-6042

After the completion of the course, students are expected to have the ability to:

- Identify the basic element and functions of 8085 microprocessor.
- Describe the general architecture & organization of 8085.
- Analyze and suggest various machine cycles and addressing modes.
- Apply the programming techniques in developing the assembly language program.
- Differentiate various types of interrupt in 8085 microprocessor.

THEORY
DATA COMPRESSION:
BCA-6043

- After the completion of the course, students are expected to have the ability to:
- Understand the concepts of commonly used lossless and lossy compression techniques.
- Analyze the applications of Huffman coding, loss less image compression, Text compression, Audio Compression.
- Analyze various Image compression and dictionary based techniques.
- Understand the statistical basis and performance metrics for lossless compression.
- Understand the concept of scalar quantization in data compression techniques.

Principal
Lucknow Public College of Professional Studies
Vinamra Khand, Gomtinagar, Lucknow

2.6.1 Teachers and students are aware of the stated programme and course outcomes of the programmes offered by the institution.

THEORY

CRYPTOGRAPHY:

BCA-6044

- After the completion of the course, students are expected to have the ability to:
- Learn the basic concepts of security threats, mechanisms and symmetric cryptography
- Understand the conventional encryption algorithms.
- Understand modern block cipher and public key encryption techniques analysis.
- Understand the concept of Hash functions and message authentication.

ADVANCED TECHNOLOGY (DOT NET) LAB

BCA-605P

Course Outcomes (Cos):

At the end of this course students will be able to:

- CO-1. Understand the concept of Programming Console applications using VB.NET.
- CO-2. Illustrate Exception Handling concepts.
- CO-3. Build web applications using web controls.

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