BACHELOR IN COMPUTER APPLICATIONS (BCA)

PROGRAMME OUTCOMES

PO1: Demonstrate a continuous pursuit of knowledge and skills in advanced areas of computer applications and emerging technologies, fostering personal and professional growth in the digital era.

PO2: Effectively adapt to and manage the rapidly evolving technological, social, economic, and cultural environments that influence the field of computing and its applications in society.

PO3: Equip themselves with essential technical skills and domain-specific knowledge to secure gainful employment in areas such as software development, database management, networking, cyber security, and other ICT-related professions.

PO4: Disseminate comprehensive knowledge of core computing domains, including programming, data structures, operating systems, web technologies, and software engineering, enabling students to gain a competitive advantage in today's technology-driven world.

PO5: Exhibit proficiency in the tools, techniques, and methodologies used for effective problem-solving and decision-making in computing, including algorithmic thinking, data analysis, and application development.

PO6: Utilize principles of software project management and system design to guide the development, deployment, and maintenance of computer applications, ensuring alignment with organizational needs and industry best practices.

PO7: Engage in research and exploratory activities that offer insights into complex computing challenges, fostering innovation and the creation of effective, technology-driven solutions.

PO8: Effectively address contemporary challenges in information technology and organizational environments, demonstrating strong teamwork, communication, and collaborative skills to enhance productivity and project success.

BACHELOR IN COMPUTER APPLICATIONS

1st SEMESTER

MAJOR	Fundamentals of Computing & Problem Solving using C, Mathematical Foundations of Computer Science
Skill Enhancement Course	Web Development-I
Ability Enhancement Course	English-I
Value Added Course	Environmental Science
MINOR	Business Organisation and Management, Basics Concepts of Chemistry, Basic Mathematics, Basics in Biotechnology, Introduction to Statistics, Managerial Skills
Multi Disciplinary Course	Basics of Home Science-I, Basic Components of Hindustani Music Vocal, Basic Studies in Hindustani Instrumental Music, Society & Culture in India, Financial Literacy, Foundations of Management, Marketing Management

Name of the Course- Fundamentals of Computing & Problem Solving using C
Course Code- 24CSC401MI01

Course Outcomes-

CO1: Gain knowledge of essential computing concepts and its applications in various fields.

CO2: Develop proficiency in writing, debugging, and executing C programs to efficiently solve computational problems.

CO3: Demonstrate an understanding of data types, control structures, functions, arrays, and pointers.

CO4: Cultivate problem-solving skills through algorithmic thinking and programming techniques in C.

CO5: Apply modular programming principles to effectively organize and structure code for improved maintainability, scalability, and code reuse in C programming projects.

Name of the Course- Mathematical Foundations of Computer Science
Course Code- 23BCA401DS01

Course Outcomes-

CO1: Understand and solve the problems on set, relation and functions.
CO2: Understand the concepts of trigonometry.
CO3: Solve the problems on limit and continuity.
CO4: Understand the concepts of derivative and solve the problems on derivative.
CO5: Understand the concept of Matrix and Determinants.

Name of the Course- Web Development-I
Skill Enhancement Course(SEC)
Course Code- 24CSC401SE01

Course Outcomes-

CO1: Gain knowledge about various aspects related to web development
CO2: Understand server side and client side scripting
CO3: Develop proficiency in writing codes for web development using HTML and DHTML.
CO4: Demonstrate an understanding of various interactive tools useful in developing interactive sites
CO5: Learn different style layouts to be applied during web sites development.

Name of the Course- Environmental Science
Value Added Course(VAC)
Course Code- 23EVSX01VA01

Course Outcomes-

CO1: Gain in-depth knowledge on natural processes and resources that sustain life and govern economy.
CO2: Understand the consequences of human actions on the web of life, global economy, and quality of human life.
CO3: Develop critical thinking for shaping strategies (scientific, social, economic, administrative, and legal) for environmental protection, conservation of biodiversity, environmental equity, and sustainable development.

CO4: Acquire values and attitudes towards understanding complex environmental economic- social challenges, and active participation in solving current environmental problems and preventing the future ones.
CO5: Adopt sustainability as a practice in life, society, and industry.

Name of the Course- English-I
Ability Enhancement Courses(AEC)
Course Code- 23ENGX01AE01

Course Outcomes-

CO1: To introduce basic concepts of phonetics and train them to transcribe speech sounds using the symbols given in OALD (Oxford Advanced Learner's Dictionary).
CO2: To enable students understand basic grammar and vocabulary so that they can use it for their everyday communication.
CO3: To build elementary level Reading skills of the students to enable them to read and speak sentences frequently .

MINOR SUBJECTS IN BCA-1st YEAR(1st Semester)

Name of the Course- Business Organisation and Management
Course Code- 24COM401MI01

Course Outcomes-

CO1: Students will understand the fundamental concepts of business, trade, industry, and commerce, and learn various forms of business organizations and the evolution of management thoughts.
CO2: To understand and describe the concepts and processes of planning and organizing, including different types of authority, decentralization, and delegation.
CO3:Students will understand the concepts and processes of staffing, including recruitment, selection, and training, and learn about major leadership theories.
CO4: To understand the concepts and importance of motivation and control, including majormotivation theories and techniques of control.

Name of the Course- Basics Concepts of Chemistry
Course Code- 24CHE401MI01

Course Outcomes-

CO1: Understand the atomic models by various atomic theories.

CO2: Understand the structural idea and relevance in describing shapes of s, p and d orbitals.
CO3: Understand the periodicity in atomic and ionic radii, electronegativity, ionization energy, electron affinity of
elements of the periodic table and anomalous behavior of elements.
CO4: Recapitulate the mole concept.
CO5: Develop skills in using the mole concept for stoichiometric calculations.
CO6: Learn to apply stoichiometric principles to determine the quantities of reactants and products involved in chemical reactions.
CO7: Gain knowledge about the structure and bonding in organic molecules, including the concept of hybridization, bond angles, bond polarity and resonance.
CO8: Explore the fundamental types of organic reactions, including substitution, addition, elimination, and rearrangement reactions.

Name of the Course- Basic Mathematics
Course Code- 24MAT401MI01

Course Outcomes-
CO1: Understand and compute partial derivatives up to the second order for multivariable functions.
CO2: Use methods of integration to solve many real life problems.
CO3: Obtain maxima and minima of several functions. PLO1, PLO2
CO4: Define matrices, recognize their types, and perform matrix addition, subtraction, and multiplication.
CO5: Solve several system of linear equations using matrices.

Name of the Course- Basics in Biotechnology
Course Code- 24CBT401MI01

Course Outcomes-
CO1: Provide students with a comprehensive understanding of the field of biotechnology, including its historical background, scope, and significance.
CO2: Students will understand the fundamental concepts in biology, chemistry, and related disciplines that form the foundation of biotechnology.
CO3: Students will understand necessary skills required in biotechnology research settings.

CO4: Explore real-world applications of biotechnology in various sectors, such as medicine, agriculture, industrial biotechnology, and environmental biotechnology.

Name of the Course- Introduction to Statistics
Course Code- 24STA401MI01

Course Outcomes-

CO1: Students Acquired the Knowledge of Statistics and Importance in Various Areas.
CO2: Students Acquired the Knowledge to Represent Data in Tables and Graphs.
CO3: Students Acquired the Knowledge of Various Types of Data, Measures of Central Tendency and Dispersion.
CO4: Students Acquired the Knowledge of Correlation, Regression Diagnostics, Partial and Multiple Correlations.
CO5: Students Acquired the Knowledge of Independence and Association between Two Attributes.

Name of the Course- Managerial Skills
Course Code- 24IMS401MI01

Course Outcomes-

CO1: Understand the essential managerial skills and the applications.
CO2: Learn how to solve an analytical problem, and why employee empowerment and delegation of work are crucial.
CO3: Know the importance of team building and group behavior in an organization.
CO4: Analyze the importance of communication and motivation skills in developing effective and efficient managers.

MDC SUBJECTS IN BCA-1ST YEAR(1st Semester)

Name of the Course- Basics of Home Science-I
Course Code- 24HSCX01MD01

Course Outcomes-

CO1: To Acquire Knowledge of Various Concepts of Foodand Nutrition.
CO2: To Impart Basic Knowledge ofTextiles Fibres, yarn and Various Stitches.

CO3: To observe the key concepts related to the development of human.
CO4: To gain knowledge of family resourcemanagement .
CO5: To explain the role of extension worker in extension education.

Name of the Course- Basic Components of Hindustani Music Vocal
Course Code- 24MUSVX01MD01

Course Outcomes-

CO1: They efficiently displayed their mastery over Swarmalika in one of the prescribed Ragas, which became the fulcrum to learning the intrinsic nature of the Raga.
CO2: They skilfully exhibited Drut Khayals in the two specified Ragas. This became a preamble to acquiring performance skills. Students achieved deciphering of the twelve musical notes by the ear, giving them a resilient hold on the Swaras.
CO3: They brilliantly recited the Thekas with their Dugun and Tali-Khali in the given Talas, achieving a stable foothold on rhythm. The student will now acknowledge the different aspects of Harmonium and will know its playing techniques. The students will be equipped with the knowledge of Shuddha ,Vikritswaras and Saptak. The students will attain the ability of playing Alankaars on Harmonium. They will skillfully play nationalsong/anthem on harmonium.

Name of the Course- Basic Studies in Hindustani Instrumental Music
Course Code- 24MUSIX01MD01

Course Outcomes-

CO1: They efficiently displayed their mastery over Swarmalika in one of the prescribed Ragas on Sitar Vadya, which became the fulcrum to learning the intrinsic nature of the Raga.
CO2: They skilfully exhibited Drut Gat in one specified Ragas. This became a preamble toacquiring performance skills. Students achieved deciphering of the twelve musical notes bythe ear, giving them a resilient hold on the Swaras.
CO3: They brilliantly recited the Thekas with their Dugun and Tali-Khali in the given Talas, achieving a stable foothold on rhythm.The student will now acknowledge the different techniques of Sitar.

Name of the Course- Society & Culture in India
Course Code- 24SOCX01MD01

Course Outcomes-

CO1: It would helps to understand the various types of society.

CO2: Students would enable to understand the trend of social change in society.

CO3:Students would enable to understand the modernization and westernization of society.

CO4: Students would gain knowledge about social mobility.

Name of the Course- Financial Literacy
Course Code- 24COMX01MD01

Course Outcomes-

CO1: Understand the significance of financial literacy and the process of financial planning, including the preparation of personal, family, business, and national budgets.

CO2: Identify and differentiate between various types of banks and banking products/services, as well as post office savings schemes and services provided by India Post Payments Bank.

CO3: Gain knowledge about different life insurance policies, health insurance plans, and property insurance policies, and understand the offerings of post office life insurance schemes.

CO4: Familiarize with key terms and concepts used in stock markets, including various types of shares, market indices, and stock market transactions, as well as the taxation on capital gains and mutual funds.

Name of the Course- Foundations of Management
Course Code- 24IMSX01MD01

Course Outcomes-

CO1: Provide a strong foundation to the students on fundamentals of management

CO2: Enrich their knowledge of functional areas of management and provide an understanding of various management theories and their applications

CO3: Various approaches to problem-solving & decision-making

CO4: Will learn the control processes and their importance**.**

Name of the Course- Marketing Management
Course Code- 24IMSX02MD01

Course Outcomes-

CO1: Relate the corporate function of marketing
CO2: Outline the macro and microenvironment in molding a company's marketing function
CO3: Differentiate the consumer and institutional buyer behavior
CO4: Compare and contrast goods and services and define the target segments for the products
CO5: Select the right promotion and distribution channel for a product.

BACHELOR IN COMPUTER APPLICATIONS (BCA)

2nd SEMESTER

MAJOR	Digital Logic Design, Data and File Structures
Skill Enhancement Course	Web Development-II
Ability Enhancement Course	Hindi Bhasha Sanvardhan (One), Sanskrit and Modern Indian Languages
Value Added Course	Digital and Technological Solutions
MINOR	Fundamentals of Accounting, Corporate Leadership, Business Mathematics, Elementary Probability Theory, Principles of Gene Manipulation, Chemistry of Metals & Non- Metals, Hydrocarbons and Solutions
Multi-disciplinary Course	Basics of Home Science-II, Applied Theory of Hindustani Music Vocal, Technical Components of Hindustani Music Instrumental, Business Documentation, Marketing Management, Rural Society in India, Foundations of Management

Name of the Course- Digital Logic Design
Course Code- 23BCA402DS01

Course Outcomes-

CO1: Understand the concept of logic gates.
CO2: Understand and use of number system and their conversion.
CO3: Learn the concept of combinational circuit and sequential circuits.
CO4: Understand the concept of Computer Organization and instruction sets.
CO5: Explore concepts related to Memory Organization and Input Output Organization.

Name of the Course- Data and File Structures
Course Code- 23BCA402DS02

Course Outcomes-

CO1: Understand the fundamental concepts of data structures.

CO2: Design and implement various data structures to solve computational problems.

CO3: Apply data structures for efficient storage and retrieval of information.

CO4: Develop algorithms for searching and sorting data.

CO5: Implement file handling operations in a programming environment.

Name of the Course- Web Development-II
SKILL ENHANCEMENT COURSE
Course Code- 24CSC402SE01

Course Outcomes-

CO1: Understand the fundamental concepts of XML and its structure

CO2: Work with XML schema and Web casting techniques for Web development.

CO3. Learn the concept of Website planning.

CO4: Get acquaintance with different web technologies like AJAX, JSON.,Node.js, MongoDB etc..

CO5: Learn fundamentals and essentials of PHP programming.

Name of the Course- Hindi Bhasha Sanvardhan (One)
ABILITY ENHANCEMENT COURSE
Course Code- 23HNDX01AE01

Course Outcomes-

CO1: शुद्ध हिन्दी के प्रयोग में अभिवृद्धि होगी।' (There will be an increase in the use of pure Hindi.)

CO2: 'व्यवसाय एवं रोज़गार की उपलब्धता वाले सभी क्षेत्रों में हिन्दी भाषा में निष्णात युवाओं की सहभागिता में अभिवृद्धि होगी।' (The participation of young people proficient in Hindi language will increase in all fields where business and employment are available.)

CO3: 'अंतरराष्ट्रीय स्तर पर हिन्दी-भाषा के वर्चस्व की स्थापना होगी और हिन्दी-भाषी को देश और विदेश में समुचित सम्मान मिलेगा।' (The dominance of the Hindi language will be established at the international level, and Hindi speakers will receive due respect in the country and abroad.)

Name of the Course- Sanskrit and Modern Indian Languages
ABILITY ENHANCEMENT COURSE
Course Code- 23SKTX01AE01

Course Outcomes-

CO1: Origin, Development and Importance of a Language.
CO2: Indo European and Indo Iranian Language families.
CO3: Vedic Sanskrit and its Literature.
CO4: Classic Sanskrit and its Literature.
CO5: Contribution of Sanskrit to Ancient and Modern Indian Languages.

Name of the Course- Digital and Technological Solutions
Value Added Course(VAC)
Course Code- 23CSAX01VA01

Course Outcomes-

CO1: Knowledge about digital paradigm.
CO2: Realization of importance of digital technology, digital financial tools, e-commerce.
CO3: Know-how of communication and networks.
CO4: Familiarity with the e-governance and Digital India initiatives
CO5: An understanding of use & applications of digital technology.
CO6: Basic knowledge of all machine learning and big data

MINOR SUBJECTS IN BCA-1st YEAR(2nd Semester)

Name of the Course- Fundamentals of Accounting
Course Code- 24COM402MI01

Course Outcomes-

CO1: Students will be able to understand the significance of accounting, including its meaning, objectives, scope, limitations, and the diverse users of accounting information.
CO2: To learn the principles and practices of the double-entry system and gain proficiency in recording various transactions in the journal.
CO3: Develop the ability to manage different subdivisions of the journal, including specialized books like the cash book, purchase book, sales book, and understand their role in accounting.
CO4: Demonstrate competency in preparing a trial balance to ensure accuracy and in generating key financial statements like the trading account, profit and

loss account, and balance sheet for a sole proprietary business, incorporating necessary adjustments.

Name of the Course- Corporate Leadership
Course Code- 24IMS402MI01

Course Outcomes-

CO1: Know the different approaches of leadership and the leadership traits

CO2: Comprehend the power of influencing individuals and its significance in creating high values, courage and moral of employees

CO3: Learn how to motivate and empower employees through relationship building

CO4: Know the importance of a leader as social architect in bringing any corporate or social change.

Name of the Course- Business Mathematics
Course Code- 24MAT402MI01

Course Outcomes-

CO1: Formulate linear programming problems (LPP) and solve them graphically

CO2: Apply the Simplex method to solve LPPs involving up to three variables, including mixed constraints

CO3: Understand and analyze the concept of duality in linear programming

CO4: Obtain compound interest with different types of interest rates.

CO5: Understand the problems related to annuities.

Name of the Course- Elementary Probability Theory
Course Code- 24STA402MI01

Course Outcomes-

CO1: Students Acquainted with the Basic Concepts of Probability Theory

CO2: Students Acquainted with the Methods to Determine Probabilities of Occurring of the Events in Random Experiments

CO3: Students Acquainted with Idea of Random Variables and the Concept of Expectation

CO4: Students Acquainted with the Knowledge about Probability Mass Function and Density Function
CO5: Students Acquainted with the Knowledge to Understand Probability Distributions and It's Applications.

Name of the Course- Principles of Gene Manipulation
Course Code- 24CBT402MI01

Course Outcomes-

CO1: Students will be introduced to the fundamental principles of molecular biology, and genetic engineering providing a solid theoretical foundation for understanding gene manipulation techniques.
CO2: Students will explore the molecular tools commonly used in genetic manipulation.
CO3: Students will be familiarize with genetic manipulation techniques
CO4: Students will explore the diverse applications of gene manipulation techniques in various fields, including biotechnology, medicine, agriculture, and environmental science.

Name of the Course- Chemistry of Metals & Non- Metals, Hydrocarbons and Solutions
Course Code- 25CHE402MI01

Course Outcomes-

CO1: Learn about classification of elements with their properties.
CO2: Understand the minerals and ores, metallurgical processes and refining of metals.
CO3: Define and classify different types of solutions and various ways to express the concentration of solutions.
CO4: Understand the concept of Raoult's law, different types of solutions and colligative properties.
CO5: Basic chemistry of alkane, alkene and alkynes.
CO6: Understand the structure and preparation of benzene.
CO7: Explain the concept of aromaticity and the criteria for a molecule to be considered aromatic.
CO8: Learn and identify the basic organic reaction mechanisms.

MDC SUBJECTS IN BCA-1ST YEAR(2nd Semester)

Name of the Course- Basics of Home Science-II
Course Code- 24HSCX02MD01

Course Outcomes-

CO1: To describe the role and functions of different nutrients in body
CO2: To acquire knowledge about clothing & fabricconstruction
CO3: To identify the developmental milestones of childhood and adolescence stage.
CO4: To comprehend the relationships that characterize art anddesign practice
CO5: To impart awareness skills of becoming a rationalized consumer

Name of the Course- Applied Theory of Hindustani Music Vocal
Course Code- 24MUSVX02MD01

Course Outcomes-

CO1: They efficiently displayed their mastery over Swarmalika in one of the prescribed Ragas, which became the fulcrum to learning the intrinsic nature of the Raga.
CO2: They skilfully exhibited Drut Khayals in the two specified Ragas. This became a preamble to acquiring performance skills. Students achieved deciphering of the twelve musical notes by the ear, giving them a resilient hold on the Swaras.
CO3: They brilliantly recited the Thekas with their Dugun and Tali-Khali in the given Talas, achieving a stable foothold on rhythm. This course focuses on the practical fundamentals of performing a Raag on stage withVilambit and Drut Khayal. Students will be able to perform other lighter compositional forms of Indian Music like, Bhajan, Geet and Ghazal. Students will understand the concept of Laya and Layakari with the Raga and its composition. Students will also learn the basic Vocal exercises like Alankar-Paltas, which are the foundational compositions to learn for beginner student.

Name of the Course- Technical Components of Hindustani Music Instrumental
Course Code- 24MUSIX02MD01

Course Outcomes-

CO1: They efficiently displayed their mastery over Swarmalika in one of the prescribed Ragas, which became the fulcrum to learning the intrinsic nature of the Raga.

CO2: They skilfully exhibited Drut Khayals in the two specified Ragas. This became a preamble to acquiring performance skills. Students achieved deciphering of the twelve musical notes by the ear, giving them a resilient hold on the Swaras.

CO3: They brilliantly recited the Thekas with their Dugun and Tali-Khali in the given Talas, achieving a stable foothold on rhythm. This course focuses on the practical fundamentals of performing a Raag on stage with Vilambit and Drut Khayal. Students will be able to perform other lighter compositional forms of Indian Music like, Bhajan, Geet and Ghazal. Students will understand the concept of Laya and Layakari with the Raga and its composition. Students will also learn the basic Vocal exercises like Alankar-Paltas, which are the foundational compositions to learn for beginner student.

Name of the Course- Business Documentation
Course Code- 24COMX02MD01

Course Outcomes-

CO1: Understand the significance of business documentation and its advantages.

CO2:Learn to identify, draft, and create various business documents while adhering to necessary precautions.

CO3: Gain knowledge of banking documents like cheques, demand drafts, and mutual funds/stock market documents.

CO4: Develop the skills to complete account opening forms for different bank accounts and prepare financial instruments like bills of exchange and promissory notes.

Name of the Course- Marketing Management
Course Code- 24IMSX02MD01

Course Outcomes-

CO1: Relate the corporate function of marketing

CO2: Outline the macro and microenvironment in molding a company's marketing function
CO3: Differentiate the consumer and institutional buyer behavior
CO4: Compare and contrast goods and services and define the target segments for the products
CO5: Select the right promotion and distribution channel for a product.

Name of the Course- Rural Society in India
Course Code- 24SOCX02MD02

Course Outcomes-

CO1: Students would be able to understand the trends of change in rural society.
CO2: Students would be able to critically examine the role of Panchayati Raj institutions in women empowerment.
CO3: Students are expected to have understanding of inter caste relations and Jajmani system in rural society.
CO4: Students would be able to analyse the impact of green revolution on rural society.

Name of the Course- Foundations of Management
Course Code- 24IMSX01MD01

Course Outcomes-

CO1: Provide a strong foundation to the students on fundamentals of management
CO2: Enrich their knowledge of functional areas of management and provide an understanding of various management theories and their applications
CO3: Various approaches to problem-solving & decision-making
CO4: Will learn the control processes and their importance**.**