Kristu Jayanti College
AUTONOMOUS Bengaluru
Reaccredited 'A++' Grade by NAAC | Affiliated to Bengaluru North University

FACULTY OF SCIENCES

Programme Matrix: Bachelor of Computer Applications [2023 Batch]

Programme Outcomes

After successful completion of BCA programme, a student will be able to:

PO1: integrate scientific temper; spirit of enquiry, humanism and reform

PO2: apply scientific knowledge and skills ethically for societal development and entrepreneurship

PO3: design, execute and interpret the results of experiments in Computer Science involving programming concepts, mathematical foundation, electronic components and visualisations techniques

PO4: appraise programming skills by implementing the structure and development methodologies of software systems.

PO5: infer a modern scientific IT tool and techniques to solve problems in the area of computer science

Date of Approval: 10/2/23

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I Semester			
Course Type	**Course Code**	**Course Title**	**Course Outcomes**
DSC	21BCA2T311	C Programming	1. Understand the basic programming concepts and design a solution for computational problems 2. Develop solutions to problems by acquiring the concepts of operators, selection and iterative constructs 3. Analyse the usage of arrays , strings and create modular programs 4. Familiarize with derived data types and develop solutions for real world problems 5. Illustrate the usage of preprocessor directives and perform input/output operations on files.
DSC	21BCA2L211	C Programming Practical	1. Develop C programs using sequential conditional and iterative constructs 2. Design programs using user defined and derived data types, string operations and functions in C language 3. Use structures, files and pointers as per the requirement
DSC	21BCA2T312	Digital Electronics	1. Analyze different number systems used in computers 2. Demonstrate the code conversions and logic gates 3. Solve the SOP expressions using Boolean postulates and karnaugh map techniques 4. Design and construct the combinational circuits 5. Explain the fundamental concepts of sequential circuits.
DSC	21BCA2L212	Digital Electronics Practical	1. Tabulate the truth table of logic circuits and universal gates 2. Construct adder and subtractor circuits using basic gates 3. Explain the encoder and decoder design concepts 4. Design flip-flops using universal gates 5. Create registers using flip-flops.
DSC	21BCA2T313	Computing and Programming Fundamentals	1. Prepare pseudo code, flowchart, algorithm and control structures for computational problems and calculate number system conversions 2. Distinguish different programming paradigms and analyze the features of programming languages 3. Analyze the different types of hardware and categories of software 4. Articulate and summarize the computing paradigms and also future computing techniques 5. Compare and analyze the different case studies of Computer companies and analyze their computing paradigms and its piracy related issues.
AECC	22ENG1T312	Musings in English Literature	1. Articulate the relevant issues of society through the imbibed knowledge of prose 2. Identify and appreciate nuances of poetry 3. Implement the basic concepts of grammar and its usage.

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AECC	21KAN1T313	Saahithya Chinthana I	1: ಸಾಹಿತ್ಯದ ಮೂಲಕ ನಿಸರ್ಗದ ವಿಸ್ಮಯಗಳನ್ನು ಅರಿಯುವರು 2: ಗ್ರಾಮೀಣ ಜೀವನದ ಸೊಬಗನ್ನು ತಿಳಿಯುವರು 3: ಪ್ರೀತಿಯ ವಿಸ್ತಾರದ ಬಗ್ಗೆ ಚರ್ಚಿಸುವರು 4: ಸರ್ವತೋಮುಖ ಬೆಳವಣಿಗೆಯ ಅವಕಾಶ ಪಡೆಯುವರು
AECC	21HIN1T313	Hindi Nibandh Saahitya aur Karyalayi Hindi	1: हिन्दी साहित्य के निबंध विधा का ज्ञान ग्रहण और समझने की क्षमता का विकास 2: विद्यार्थियों में निबंध में सामाजिक यथार्थ और कथा का मुल्यांकन करने का विकास 3: विद्यार्थियों में निबंध में चित्रीत कथा का वर्णन करने का विकास 4: सरकारी कार्यालयी भाषा का ज्ञान एवं निबंध के कथा का विश्लेषण करने का विकास
AECC	22AEN1T311	Listening and Comprehension in English	1. identify the barriers to listening and describe the key components that contribute to effective listening 2. use their grammatical knowledge to refine their speech and writing 3. analyse complex human situations and challenges that emerge from the prescribed texts.

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II Semester			
Course Type	**Course Code**	**Course Title**	**Course Outcomes**
DSC	21BCA2T321	Data Structures	1. Understanding the fundamental analysis of data structures, analyze the dynamic memory management, recursive procedures and usage of pointer variables 2. Identify and evaluate the suitable sorting and searching algorithms for data structure applications 3. Design and examine linear data structures of stack and queue and legal operations permitted on them 4. Articulate and summarize the linked list concepts, operations with its application 5. Compare and construct the non-linear data structures of tree terminologies with its application.
DSC	21BCA2L221	Data Structures Practical	1. Build iterative and/or recursive programs to implement solution to problems 2. Build programs that implements programming concepts searching and sorting operations 3. Develop programs that implements the concepts and operations in static data structures like stack, Queue 4. Develop programs that implements the concepts and operations in dynamic data structures like Linked list and Tree 5. Design programs that performs static and dynamic memory allocation operations.
DSC	21BCA2T322	Java Programming	1. Understand Procedural and Object-oriented Programming Paradigms and compare java programming with C and C++ 2. Design and Analyze reusable programs using the concepts of inheritance, interfaces and packages 3. Identify and Design the concepts of Multithreading and Exception handling to develop efficient and error free codes 4. Design Applet driven life cycle and describe Event handling based applications 5. Summarize the concept of event driven GUI and create applications using AWT concept.
DSC	21BCA2L222	Java Programming Practical	1. Build sequential, decision making and iterative Java programs 2. Develop Java programs using Object oriented programming concepts 3. Design GUI based applications using frames
DSC	21BCA2T323	Computational Mathematics	1. Evaluate problems on matrices using formula, Cramer's rule, matrix method and cayley Hamilton theorem 2. Explain algebraic structures, vector dot product, cross product, scalar triple product and vector triple product 3. Apply the concepts related to direction ratios, equations of line and plane 4. Interpret the concepts of sets and functions.
AECC	22ENG1T322	Glimpses: Readings from English Literature	1. Identify the themes and relevant issues through the study of prose and poetry 2. Develop the skill to identify the pertinent themes and characters in the novel 3. Implement new approaches in speaking and writing skills.
AECC	21KAN1T323	Saahithya Chinthana II	1: ಸಾಹಿತ್ಯದ ಮೂಲಕ ನಿಸರ್ಗದ ವಿಸ್ಮಯಗಳನ್ನು ಅರಿಯುವರು 2: ಗ್ರಾಮೀಣ ಜೀವನದ ಸೊಬಗನ್ನು ಸವಿಯುವರು 3: ವಚನಗಳ ಅಧ್ಯಯನದಿಂದ ಜ್ಞಾನ ವಿಸ್ತಾರವಾಗುವುದು 4: ಸ್ತ್ರೀ–ಸಂವೇದನೆಯ ಅರ್ಥ ತಿಳಿಯುವರು 5: ಸಂವಹನ ಕ್ರಾಂತಿಯ ಪ್ರಭಾವ ಅರ್ಥೈಸಿಕೊಳ್ಳುವರು

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AECC	21HIN1T323	Hindi Kahani Sahitya aur Prayojan Mulak Hindi	• हिन्दी कहानी विधा को समझाने की योग्यता का विकास। • विद्यार्थियों में सामाजिक यथार्थ और मूल्यांकन करने का विकास। • कहानी पठन में रूचि एवं वर्णन करने की क्षमता का विकास। • प्रयोजनमूलक हिंदी के स्वरूप का ज्ञान प्राप्ती और अनुवाद, भाषा कौशल में प्राविण्यता।
AECC	22AEN1T321	Conversation Practice in English	1. Identify the barriers to listening and describe the key components that contribute to effective listening 2. Use their grammatical knowledge to refine their speech and writing 3. Analyse complex human situations and challenges that emerge from the prescribed texts.
AECC	21EVS1T321	Environmental Studies	1. Understand the concept of Environment and ecosystems 2. Gain knowledge on various components controlling the stability of ecosystem 3. Understand the Policies and laws pertaining to the welfare of life forms.

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III Semester			
Course Type	**Course Code**	**Course Title**	**Course Outcomes**
DSC	21BCA2T331	Database Management System	1. Understand and analyze the basic concepts of database, database management system and its architecture 2. Construct and describe entity-relationship model for data tables and illustrate data retrieval and hashing techniques 3. Design and summarise the concepts of relational data model and apply Normalization techniques in relational database management system 4. Develop, examine and analyse sql queries and functions on structured data 5. Compare locking techniques and illustrate the concepts of scheduling.
DSC	21BCA2L231	Database Management System Practical	1. Create basic SQL queries 2. Manage primary and foreign key constraints in the database 3. Execute PL/SQL program to insert and retrieve data from database
DSC	21BCA2T332	Visual Programming	1. Understand the basic concepts of Visual Programming 2. Design a graphical user interface using multiple forms, modules, menus and VB.Net controls 3. Manage and analyze prepared projects with programs 4. Analyze VB.Net controls to resolve defects and revise existing code 5. Integrate connectivity between user interface and the database.
DSC	21BCA2L232	Visual Programming Practical	1. Create basic GUI form 2. Manage form and code in the visual programming 3. Execute MDI form to perform manipulation
DSC	21BCA2T333	Probability and Statistics	1. Analyze univariate data using measures of central tendency, measures of dispersion and skewness 2. Evaluate bivariate data set using correlation and linear regression 3. Apply addition and multiplication probability law and discriminate probability distributions as discrete -binomial, Poisson; and continuous- normal 4. Relate test of significance for means, difference of mean, proportions, difference of proportions, chi-square test for independences of attributes and goodness of fit
AECC	21ENG1T332	Symphony of English Literature	1. Identify the themes and relevant issues through the study of prose and poetry 2. Develop the skill to identify the pertinent themes and characters in the novel 3. Implement new approaches in speaking and writing skills.

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AECC	21KAN1T333	Saahithya Chinthana III	1: ಸಾಹಿತ್ಯದ ಮೂಲಕ ಮಾನವೀಯ ಸಂಬಂಧಗಳನ್ನು ಅರಿಯುವರು 2: ಗ್ರಾಮೀಣ ಜೀವನದ ಸೊಬಗನ್ನು ತಿಳಿಯುವರು 3: ಸಾಮಾಜಿಕ ನ್ಯಾಯದ ಬಗ್ಗೆ ಚರ್ಚಿಸುವರು 4: ಸಾಹಿತ್ಯದಲ್ಲಿ ವಿಹಿತ ಸರ್ವತೋಮುಖ ಬೆಳವಣಿಗೆಯ ಬಗ್ಗೆ ಅರಿಯುವರು 5: ಮಾನವ ಸಮಾನತೆಯ ಮೂಲ ತತ್ವಗಳನ್ನು ಅರ್ಥಮಾಡಿಕೊಳ್ಳುವರು
AECC	21HIN1T333	Hindi Kavitha aur Computer Anuprayog	1: हिन्दी पद्य विधाओं का ज्ञान ग्रहण करने की क्षमता का विकास। 2: विद्यार्थियों में सामाजिक मूल्यांकन और यथार्थ को समझना। 3: विद्यार्थियों में पद्य का वर्णन और विश्लेषण करने की क्षमता का विकास। 4: कंप्यूटर और हिंदी भाषा कौशल का विकास।
AECC	21AEN1T331	Essential English Reading	1. Recognize the techniques of effective reading and demonstrate their competence in comprehension. 2. Articulate their thoughts and structure written compositions as needed in official contexts 3. Formulate their responses to contemporary challenges that emerge from the prescribed texts.

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IV Semester			
Course Type	**Course Code**	**Course Title**	**Course Outcomes**
DSC	21BCA2T341	Software Engineering	1. Demonstrate the basic of software engineering process, ethics and development 2. Analyze the various aspects of software requirement engineering 3. Understand the importance of a system and the concept of various models 4. Understand and analyze the decisions about the system architectural design process 5. Meet the desired needs of the customer with understanding of software testing.
DSC	21BCA2L241	Software Engineering Project	1. Design project development phases using waterfall, prototyping, spiral and agile model 2. Manage the workflow of the project using gantt chart 3. Design use cases using UML diagram.
DSC	21BCA2T342	Basics of Open Source Demystified	1. Differentiate between Open Source and Proprietary software and Licensing 2. Recognize the applications, benefits and features of Open-Source Technologies 3. Gain knowledge to start, manage open-source projects 4. Contribute to open source projects in different technologies technically and non- technically 5. Explore more opportunities to grow visibility and credibility in the industry through open source.
DSC	21BCA2L242	Basics of Open Source Demystified Practical	1. Understand the community operations and governance of open source projects 2. Apply contribution to open source project (design, development, testing and documentation) 3. Evaluate how to learn and grow their industry visibility in open source industry.
DSC	21BCA2T343	Operating System and LINUX	1. Understanding the concepts of different operating systems like, compare batch, time Sharing, and real time and distributed operating system 2. Precise CPU scheduling, disk scheduling, page replacement algorithms and Process Synchronization 3. Explain, file access and file allocation methods 4. Discuss the UNIX file system, Special Tools and Utilities 5. Create System Administration and Shell Programminging.
AECC	21ENG1T342	Ruminations of English Literature	1. Articulate the relevant social issues and thematic representation in prose and poetry 2. Analyse the characters, plot, setting and themes of novel 3. Acquire vital employability skills and employment opportunities with in-depth knowledge of writing skills.
AECC	21KAN1T343	Saahithya Chinthana IV	1: ಸಾಹಿತ್ಯದ ಮೂಲಕ ನಿಸರ್ಗದ ವಿಸ್ಮಯಗಳನ್ನು ಅರಿಯುವರು 2: ಮಾನವೀಯತೆ ರೂಪವೇ ಕರುಣೆ. ಇದರ ಬಗ್ಗೆ ತಿಳಿಯುವರು 3: ಬಡತನ, ಹಸಿವಿನ ತೀವ್ರತೆಯ ಬಗ್ಗೆ ಚರ್ಚಿಸುವರು 4: ಅಭಿವೃದ್ಧಿಯ ನೆಪದಲ್ಲಿ ಅಂತಃಪತನವಾಗುತ್ತಿರುವ ಮಾನವೀಯತೆಯ ಬಗ್ಗೆ ಚರ್ಚಿಸುವರು. 5: ಮಾನವ ಸಮಾನತೆಯ ಮೂಲ ತತ್ವಗಳನ್ನು ಅರ್ಥಮಾಡಿಕೊಳ್ಳುವರು

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AECC	21HIN1T343	Hindi Natak Sahitya aur Antarjaal par Patrikanye, Chitta Lekhan	1: हिन्दी नाटक विधा को समझने की योग्यता का विकास। 2: विद्यार्थियों में सामाजिक यथार्थ और मूल्यांकन करने का विकास। 3: नाटक लेखन, पठन में रूचि और अभिनय कला का विश्लेषण करने का विकास। 4: अंतर्जाल पर पत्रिकाएँ और चिट्ठा लेखन कला में प्राविण्यता।
AECC	21AEN1T341	Fundamentals of English Written Communication	1. Examine the features of effective writing and demonstrate their skills in complex, non-formulaic writing 2. Identify and fix common stylistic errors in written English 3. Analyze the representation of cross-cutting issues in literary works.
AECC	21INC1T341	India and Indian Constitution	1. Evaluate the philosophy of the Constitution and its structure 2. Appraise the powers and functions of various offices under the Constitution 3. Analyze the Indian values, Ideals and the role of Constitution in a Democracy.

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