K.L.E Society's
Raja Lakhamagouda Science Institute (Autonomous), Belagavi

(PO's/PSO's/CO's)

Program: B. Sc. Electronics & Computer Science (UG01C08)

Programme Outcome

PO1: Disciplinary knowledge and skills: Capable of demonstrating comprehensive knowledge and understanding of major concepts, theoretical principles and experimental findings in Electronics & Computer Science and its different subfields.

PO2: Critical thinker and problem solver: Ability to employ critical thinking and efficient problem-solving skills in the four basic areas of Electronics & Computer Science.

PO3: Sense of inquiry: Capability for asking relevant/appropriate questions relating to issues and problems in the field of Electronics & Computer Science, and planning, executing and reporting the results of an experiment or investigation.

PO4: Lifelong learners: Capable of self-paced and self-directed learning aimed at personal development and for improving knowledge/skill development and reskilling.

Programme Specific Outcomes

PSO1: Students will realize and develop an understanding of the impact Electronics & Computer Science on society and apply conceptual understanding of the Electronics & Computer Science in real life.

PSO2: Perform effectively with professional ethics in analytical, scientific and technical domains.

PSO3: Demonstrate subject-related and transferable skills that are relevant to Electronics & Computer Science related job trades and employment opportunities.

Course Outcomes

Semester I

Course Type	Course Code	Course Title	Course Outcome
AECC	**21EN101**	**Generic English-I**	**CO1:** Learn to appreciate literary texts. **CO2:** Obtain the knowledge of literary devices and genres. **CO3:** Acquire the skills of creativity to express one's experiences. **CO4:** Be aware of their social responsibilities. **CO5:** Develop the critical thinking skills.
AECC	**21KA101**	**Kannada**	**CO 1**: Create appreciation for Kannada language and culture through Kannada literature **CO 2:** Creating environmental awareness. **CO 3:** Developing scientific perspective through science literature. **CO 4:** Know the importance and various forms of Kannada Language
AECC	**21HI101**	**Hindi**	**CO1:** Create interest among the students by reading story. **CO2:** Will be familiar with the development sequence of modern Hindi story. **CO3:** Interest towards linguistic correctness will be created. **CO4:** Will be able to acquire writing skills. **CO5:** Know the importance and various forms of Hindi Language.
SEC	**21CS111**	**Digital fluency**	**CO1:** Have an intelligent conversation on the key concepts and applications of artificial intelligence (AI), Big data analytics (BDA), internet of things (IOT), Cloud computing, and cyber security. **CO2:** Develop holistically by learning essential skills such as effective communication, problem solving, design thinking, and team work. **CO3:** Build his or her personal brand has an agile and expensive learner- one who is interested in horizontal and vertical growth?
DSC	**21EL101**	**Electronic devices and circuits**	**CO1:** Study and analyze basic networks using network theorems in a systematic manner. **CO2:** Apply standard device models to explain/calculate critical internal parameters of semiconductor devices

				CO3: Explain the behaviour, characteristics and applications of Varactor diode, Schottky diode, Tunnel diode, LED, LCD and solar cells. CO4: Understand and represent different number systems &understand the basic knowledge of Digital system building blocks & Boolean algebra.
DSC	21EL102	Electronic Devices and Circuits – Lab		CO1: Electric circuit theorems are always beneficial to help find voltage and currents in multi- loop circuits. CO2: Acquire knowledge of and Working principles, characteristics and basic applications of BJT CO3: Single stage, cascaded and feedback amplifier configurations and Frequency response Characteristics of BJT CO4: Gain knowledge between different types of number systems, & their conversions & design of various logic gates
DSC	21CS101	Computer Fundamentals and Programming in C		CO1: Confidently operate Desktop Computers to carry out computational tasks and understand working of Hardware and Software and the importance of operating systems. CO2: Understand programming languages, number systems, peripheral devices, networking, multimedia and internet concepts. CO3: Perform input and output operations using programs in C. CO4: Read, understand and trace the execution of programs written in C language.
DSC	21CS102	Practical (Computer Fundamentals and Programming in C)		CO1: Write a C Program to generate n primes, check it for palindrome, find roots of quadratic equation. CO2: Write a C Program to demonstrate conditional statements. CO3: Write a C Program that performs operations on arrays. CO4; Write a C Program on the concept of pointers, string, structure and union.

Semester II

Course Type	Course Code	Course Title	Course Outcome
AECC	21EN201	Generic English-II	**CO1:** Learn to appreciate literary texts. **CO2:** Obtain the knowledge of literary devices and genres. **CO3:** Acquire the skills of creativity to express one's experiences. **CO4:** Be aware of their social responsibilities.
AECC	21BO311	Environmental Studies	**CO1:** define environmental study and ecology with basic principles. **CO2:** To examine the natural recourses their types and utility. **CO3:** To identify the environmental usages, types of pollutions and their impact. **CO4:** To outline the diversity and explain the conservations and its significance.
AECC	21KA201	Kannada-II	**CO 1:** A good personality is formed by literature based on life values. **CO 2:** Students become ambitious to build a better life by achieving specific goals. **CO 3:** Inspiring to always be enthusiastic in life. **CO 4:** You will get complete knowledge of modern Kannada poetry.
AECC	21HI201	Hindi-II	**CO1:** Create interest among the students by reading story. **CO2:** Will be familiar with the development sequence of modern Hindi story. **CO3:** Interest towards linguistic correctness will be created. **CO4:** Will be able to acquire writing skills. **CO5:** Know the importance and various forms of Hindi Language.
DSC	21EL201	Analog and digital electronics	**CO1:** Explain the behaviour and characteristics of MOSFET & power devices such as UJT, SCR, Diac, Triacetc., **CO2:** Gain the knowledge about linear integrated circuit (Op-Amp), characteristics and studying the applications of op-amp. **CO3:** Understand basic logic families, K-map techniques to reduce/simplify Boolean expressions. **CO4:** Analyse combinational & sequential logic circuits & study the behaviour of registers and counters

DSC	21EL202	Analog and digital electronics - lab	CO1: Acquire knowledge and Working principles, characteristics and basic applications of FET & power control devices. CO2: Develop the skills about the basic concepts for the circuit configuration for the design & applications of linear integrated circuits. CO3: Develop skills to perform the analysis and design of various logic families and combinational circuits. CO4: Analyse and design sequential logic circuits, registers and flip flops.
DSC	21CSC201	**Data Structure Using C**	CO1: Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms. CO2: Describe the concept of recursion, give examples of its use. CO3: Discuss the computational efficiency of the principal algorithms for sorting and searching. CO4: Write programs that use arrays, records, linked structures, stacks, queues, trees, different methods of traversing trees and graphs.
DSC	21CS202	Data Structures using C	CO1: Write a Program to generate Fibonacci series and tower of Hanoi using recursion. CO2: Write a Program for various Searching and Sorting Techniques. CO3: Write Programs that use arrays, records, linked structures, stacks, and queues. CO4: Write programs to implement different methods of traversing trees.

Semester III

Course Type	Course Code	Course Title	Course Outcome
AECC	21EN301	Generic English-III	CO1: Acquired enhanced LSRW (Listening, Speaking, Reading, Writing) skills CO2: Equipped themselves with interpersonal communication skills CO3: Augmented presentation and analytical skills CO4: Ability to critically analyses, interpret and appreciate literary texts CO5: An awareness of social, cultural, religious and ethnic diversities
AECC	21KA301	Kannada-III	CO1: By knowing about Bhakti Sahitya, you will have the quality of humanity. CO 2: Through travel people will learn about the life and culture of different regions CO3: The study of ideological literature will lead to revolution. CO4: Know the importance and various forms of Kannada Language.

AECC	21HI301	Hindi-III	**CO1**: Able to understand One Act plays **CO2:** Learn to write various types of Letters
SEC-2		**Constitution of India**	**CO1**: To realise the significance of constitution of India to students from all walks of life and help them to understand the basic concepts of Indian constitution. **CO2**: To identify the importance of fundamental rights as well as fundamental duties. **CO3**: To understand the functioning of Union, State and Local Govt. in Indian federal system.
DSC	21EL301	Programming in C and Digital Design using Verilog	**CO1**: Apply the acquired knowledge of digital circuits in different levels of modelling using Verilog HDL. **CO2**: Design and verify the functionality of digital circuit/system using test benches. **CO3**: Develop the programs more effectively using directives, Verilog tasks and constructs. **CO4**: Design and analyses algorithms for solving simple problems. **CO5**: Write and execute and debug C codes for solving problems.
DSC	21EL302	Practical	**CO1**: Read, understand and trace the execution of programs written in C language & write C code for given algorithm **CO2**: Design and develop the combinational and sequential circuits using behavioural modelling
DSC	21CS301	**Object Oriented Programming Concepts and Programming in JAVA**	**CO1**: To understand about the core java programming. **CO 2**: Understanding how to create the objects and classes in java programming. **CO3**: To understand about the pillars of java programming such as inheritance, polymorphism and also handling erroneous situations. **CO 4**: To learn input output classes of the java and also to learn about multitasking.
OEC	21CS311	Multimedia & Animation	**CO1**: To get introduce about the multimedia and understand the components of multimedia. **CO2**: Understanding history of animation, applications of animation. **CO 3**: To learn about the types of visual effects and also the voice and video editing.
DSC	21CS302	**Practical (Object Oriented Programming Concepts and Programming in JAVA)**	**CO1**: Understand what is the Fibonacci series is and also to implement the same using repetitive function calling and loops. **CO2**: Practise the occurrence of each element in an array. **CO3**: Learn to perform the multiplication operation on two matrices. **CO4**: To understand the many forms of same methods and constructors. **CO5**: Get to learn the concept of constructor.

Semester IV

Course Type	Course Code	Course Title	Course Outcome
AECC	21EN401	Generic English-IV	**CO1:** Acquired creative, interpretative and critical thinking **CO2:** Skills to communicate confidently and effectively **CO3:** Obtained persuasive and creative social media writing skills **CO4:** Developed analytical and evaluative skills **CO5:** Learnt to identify and understand social contexts and ethical frameworks in the texts
AECC	21KA401	Kannada-IV	**CO1:** Learn to live in harmony by learning about the oppressed race. **CO2:** students will live in tolerance with each other. **CO3:** By understanding the life of common people, one will know the essence of simple life **CO4:** Know the importance and various forms of Kannada Language
AECC	21HI401	Hindi-III	**CO1**: Able to understand Hindi Novels **CO2**: Able to understand the importance of Mass Media and Communication
SEC-2		**Artificial Intelligence**	**CO1:** To get introduce about the concept of artificial intelligence and machine learning. **CO2:** Understanding data analysis process i.e., preparation, modelling, visualization. **CO3:** It is to learn about the robotics, types of robots and also components of robots.
DSC	21EL401	**Electronic Communication-I**	**CO1:** Know the basic concept of Analog Communication, means and medium of communication. **CO2:** Understand the principle of Analog and digital modulation. **CO3:** Familiar with "AM" and "FM "techniques. **CO4:** Understand the basic concept of Pulse Modulation, Carrier Modulation for digital transmission andable to construct simple pulse modulation. **CO5:** Understand the basic concept of Satellite & Optical Fiber Communication
DSC	21EL402		**CO1:** Verify and analyse the working of different modulation techniques. **CO2:** Learn the basic elements of satellite communication &optical fibre transmission link and understand the different kind of losses.

DSC	21CS401	**Database Management System**	**CO1:** To learn about the database management system and also, it's architecture. **CO2:** To understand about the relationship modelling, also the deeper concept of attributes. **CO3:** To handle the relational operations on the data and the process of normalization. **CO 4:** Learning about the transactions, ACID properties.
OEC	21CS411	Multimedia & **Foundations of Data Science**	**CO1:** Understanding about the concept of data science managing data and NOSQL. **CO2:** Learn how to map problems to machine leaning. **CO3:** Get to know the R language. Arrays, matrices, Files. **CO4:** Learning about the Documentation and deployment.
DSC	21CS402	**Practical (Database Management System)**	**CO1:** Understand creation of database and also to learn to modify the values. **CO2:** To learn display of tables and deletion process. **CO3:** To understand remove operation. **CO4:** To learn arrangement of tuples in alphabetic manner. **CO5:** To perform operations like sum and average on database.