

**K.L.E Society's
Raja Lakhamagouda Science Institute (Autonomous), Belagavi
(PO's/PSO's/CO's)**

Program: B. Sc. Physics & Computer Science (UG01C07)

Programme Outcome

- PO1: Disciplinary knowledge and skills: Capable of demonstrating comprehensive knowledge and understanding of major concepts, theoretical principles and experimental findings in Physics & 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 Physics & Computer Science.
- PO3: Sense of inquiry: Capability for asking relevant/appropriate questions relating to issues and problems in the field of Physics & 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 Physics & Computer Science on society and apply conceptual understanding of the Physics & 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 Physics & 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	21PH101	Mechanics and Properties of Matter	CO1: Learn about conservation laws in different frames of reference CO2: Know how g can be determined experimentally and derive satisfaction. CO3: Come to know how various elastic moduli can be determine.

			CO4: Measure surface tension and viscosity and appreciate the methods adopted.
OEC	21PH111	Energy Sources	<p>CO1: To understand the fundamental concepts of reflection, refraction and dispersion of Light.</p> <p>CO2: To explain the fundamentals of instruments based on optical phenomenon.</p> <p>CO3: To describe the working of optical components in various instruments.</p> <p>CO4: To explain the applications of various types of optical components in instruments.</p>
DSC	21PH102	Physics practical	<p>After successful completion of the course, the student,</p> <p>CO1: Will get hands on experience of different equipment.</p> <p>CO2: Will see the difference between simple and torsional pendulum and their use in the determination of various physical parameters.</p> <p>CO3: Will measure surface tension and viscosity CO4: Will know how g can be determined experimentally CO5: Will measure Moment of Inertia of Fly wheel and verify perpendicular and parallel axis theorem for Circular disc.</p>
DSC	21CS101	Computer Fundamentals and Programming in C	<p>CO1: Confidently operate Desktop Computers to carry out computational tasks and understand working of Hardware and Software and the importance of operating systems.</p> <p>CO2: Understand programming languages, number systems, peripheral devices, networking, multimedia and internet concepts.</p> <p>CO3: Perform input and output operations using programs in C.</p> <p>CO4: Read, understand and trace the execution of programs in C language.</p>
DSC	21CS102	Practical (Computer Fundamentals and Programming in C)	<p>CO1: Write a C Program to generate n primes, check it for palindrome, find roots of quadratic equation.</p> <p>CO2: Write a C Program to demonstrate conditional statements.</p> <p>CO3: Write a C Program that performs operations on arrays.</p> <p>CO4; Write a C Program on the concept of pointers, string, structure and union.</p>

Semester II

Course Type	Course Code	Course Title	Course Outcome
AECC	21EN201	Generic English-II	<p>CO1: Learn to appreciate literary texts.</p> <p>CO2: Obtain the knowledge of literary devices and genres.</p> <p>CO3: Acquire the skills of creativity to express one's experiences.</p> <p>CO4: Be aware of their social responsibilities.</p>
AECC	21BO311	Environmental Studies	<p>CO1: define environmental study and ecology with basic principles.</p> <p>CO2: To examine the natural resources their types and utility.</p> <p>CO3: To identify the environmental usages, types of pollutions and their impact.</p> <p>CO4: To outline the diversity and explain the conservations and its significance.</p>
AECC	21KA201	Kannada-II	<p>CO 1: A good personality is formed by literature based on life values.</p> <p>CO 2: Students become ambitious to build a better life by achieving specific goals.</p> <p>CO 3: Inspiring to always be enthusiastic in life.</p> <p>CO 4: You will get complete knowledge of modern Kannada poetry.</p>
AECC	21HI201	Hindi-II	<p>CO1: Create interest among the students by reading story.</p> <p>CO2: Will be familiar with the development sequence of modern Hindi story.</p> <p>CO3: Interest towards linguistic correctness will be created.</p> <p>CO4: Will be able to acquire writing skills.</p> <p>CO5: Know the importance and various forms of Hindi Language.</p>
DSC	21PH201	PHYSICS-II	<p>CO1: Know the vocabulary and concept of physics as it applies to Principal of Electric Field, Gauss's law Electric potential, Capacitance and Dielectrics, current and resistance, direct current circuits, Magnetic Fields, Source of Magnetic Fields, Faraday's Law, Inductance, Alternating current circuits and Electromagnetic waves</p> <p>CO2: Apply Gauss's law of electrostatics to solve a variety of problems.</p> <p>CO3: Describe the magnetic field produced by magnetic dipoles and electric currents.</p> <p>CO4: Explain gradient, curl & divergence concepts and Maxwell laws to articulate the relationship between electric and magnetic fields.</p>
OEC	21PH211	OPTICAL INSTRUMENTS	<p>CO1: To understand the fundamental concepts of reflection, refraction and dispersion of Light.</p> <p>CO2: To explain the fundamentals of instruments based on optical phenomenon.</p>

			<p>CO3: To describe the working of optical components in various instruments.</p> <p>CO4: To explain the applications of various types of optical components in instruments</p>
DSC	21PH102	Physic Practical	<p>CO1: Will get hands on experience of different electrical equipment.</p> <p>CO2: Will have achieved the ability to Choosing testing and experimental procedures on different types of electrical circuit and analyze their operation with different operating conditions.</p> <p>CO3: Will learn fixing units, tabulation of observations, analysis of data (graphical/analytical)</p> <p>CO4: Apply knowledge of electricity and magnetism to explain natural physical processes and related technological advances.</p>
DSC	21CSC201	Data Structure using C	<p>CO1: Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms.</p> <p>CO2: Describe the concept of recursion, give examples of its use.</p> <p>CO3: Discuss the computational efficiency of the principal algorithms for sorting and searching.</p> <p>CO4: Write programs that use arrays, records, linked structures, stacks, queues, trees, different methods of traversing trees and graphs.</p>
DSC	21CS202	Data Structures using C	<p>CO1: Write a Program to generate Fibonacci series and tower of Hanoi using recursion.</p> <p>CO2: Write a Program for various Searching and Sorting Techniques.</p> <p>CO3: Write Programs that use arrays, records, linked structures, stacks, and queues.</p> <p>CO4: Write programs to implement different methods of traversing trees.</p>

Semester III

Course Type	Course Code	Course Title	Course Outcome
AECC	21EN301	Generic English-III	<p>CO1: Acquired enhanced LSRW (Listening, Speaking, Reading, Writing) skills</p> <p>CO2: Equipped themselves with interpersonal communication skills</p> <p>CO3: Augmented presentation and analytical skills</p> <p>CO4: Ability to critically analyses, interpret and appreciate literary texts</p> <p>CO5: An awareness of social, cultural, religious and ethnic diversities</p>

AECC	21KA301	Kannada-III	<p>CO 1: By knowing about Bhakti Sahitya you will have the quality of humanity.</p> <p>CO 2: Through travel literature, people will learn about the life and culture of different regions</p> <p>CO 3: The study of ideological literature will lead to revolution.</p> <p>CO 4: Know the importance and various forms of Kannada Language.</p>
AECC	21HI301	Hindi-III	<p>CO1: Able to understand One Act plays</p> <p>CO2: Learn to write various types of Letters</p>
SEC-2		Constitution of India	<p>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.</p> <p>CO2: To identify the importance of fundamental rights as well as fundamental duties.</p> <p>CO3: To understand the functioning of Union, State and Local Governments in Indian federal system.</p>
DSC	21PH301	Physics-III	<p>CO1: Give an analytical treatment of resonance in the case of open and closed pipes in general and Helmholtz resonators in particular.</p> <p>CO2: Describe the different parameters that affect the acoustics in a building, measure it and control it.</p> <p>CO3: Give the Interference phenomenon and measure the parameters like the wavelength of light using experiments like Michelson interferometer and thin films.</p> <p>CO4: Explain diffraction due to multiple slits, and polarization phenomenon using quarter and half wave plate.</p>
DSC	21PH302	Physics practical	<p>CO1: Improves the skill of handling optical equipment's.</p> <p>CO2: Learns the calibration of Spectrometer</p>
DSC	21CS301	Object Oriented Programming Concepts and Programming in JAVA	<p>CO1: To understand about the core java programming.</p> <p>CO 2: Understanding how to create the objects and classes in java programming.</p> <p>CO 3: To understand about the pillars of java programming such as inheritance, polymorphism and also handling erroneous situations.</p> <p>CO 4: To learn input output classes of the java and also to learn about multitasking.</p>
OEC	21CS311	Multimedia & Animation	<p>CO1: To get introduced about the multimedia and also to understand the components of multimedia.</p> <p>CO2: Understanding history of animation, applications and also methods/techniques of animation.</p>

			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	CO 1: Learn to live in harmony by learning about the oppressed race. CO 2: students will live in tolerance with each other. CO 3: By understanding the life of common people, one will know the essence of simple life CO 4: 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	21PH401	Physics Theory-IV	CO1: Explain the laws of thermodynamics and analyze the thermal system CO2: Apply the laws of kinetic theory and radiation laws to the ideal and practical thermodynamic systems through derived thermodynamic relations.

			<p>CO3: Use the concepts of semiconductors to describe different Semiconductor devices such as diode transistors, BJT, FET etc and explain their functioning.</p> <p>CO4: Functioning of OP-AMPS and use them as the building blocks of logic gates.</p>
DSC	21PH402	Practical's	<p>CO1: Verifies the Stefan's law using black body radiation.</p> <p>CO2: Gives the practical knowledge about working of Operational amplifier</p>
DSC	21CS401	Database Management System	<p>CO1: To learn about the database management system and also, its architecture.</p> <p>CO2: To understand about the relationship modelling, also the deeper concept of attributes.</p> <p>CO3: To handle the relational operations on the data and the process of normalization.</p> <p>CO 4: Learning about the transactions, ACID properties.</p>
OEC	21CS411	Multimedia & Foundations of Data Science	<p>CO1: Understanding about the concept of data science managing data and NOSQL.</p> <p>CO2: Learn how to map problems to machine learning.</p> <p>CO 3: Get to know the R language. Arrays, matrices, Files.</p> <p>CO4: Learning about the Documentation and deployment.</p>
DSC	21CS402	Practical (Database Management System)	<p>CO1: Understand creation of database & also to insert the values and to modify the values.</p> <p>CO2: To learn display of tables and deletion process.</p> <p>CO3: To understand remove operation.</p> <p>CO4: To learn arrangement of tuples in alphabetic manner.</p> <p>CO5: To perform operations like sum and average on database.</p>