

J.K COLLEGE, PURULIA

Department of Computer Science

Attainment of program outcomes, program specific outcomes

Programmed Name	Programmed Outcomes	Programmed Specific Outcomes
B.SC in Computer Science (Honours) (Semester wise)	<ul style="list-style-type: none">✓ To develop problem solving abilities using a computer.✓ To build the necessary skill set and analytical abilities for developing computer based solutions for real life problems.✓ Demonstrate understanding of the principles and working of the hardware and software aspects of computer systems.✓ To enhance skills and adapt new computing technologies for attaining professional excellence and carrying research.✓ To help students build-up a successful career in Computer Science	Sem-I: <ul style="list-style-type: none">✓ Understand the basic principles of Programming using C language.✓ The basic structure of computers & machine instructions and programs, Memory system basic Concepts, Input/output Organization
		Sem-II <ul style="list-style-type: none">✓ Acquire knowledge of various types of data structures, operations and algorithms.✓ Verify the correctness of an argument using propositional and predicate logic and truth tables.✓ Demonstrate the ability to solve problems using counting techniques and combinatorics in the context of discrete mathematics.✓ Explain different types of graphs and trees.

		<p>Sem-III</p> <ul style="list-style-type: none">✓ Understand the history and basic concepts of Operating Systems.✓ Learn various process management techniques including Processes Scheduling, Synchronization, Deadlocks Memory Management techniques, file systems, protection and security.✓ Estimate the computational complexity of different algorithms.✓ Understand the fundamental concept of Object Oriented programming using JAVA.✓ Problem solving and programming capability using Python
		<p>Sem-IV</p> <ul style="list-style-type: none">✓ Understand the basic concepts of database management system, Build database by applying various design techniques and analyze the efficiency of database.✓ Learn to identify, formulate, and solve engineering problems.✓ To understanding of professional and ethical responsibility.✓ Analyze, design, implement, verify, validate, apply, and maintain software systems or parts of software systems

Sem-V

- ✓ To learn the terminology and concepts of the OSI model and the TCP/IP model, Identify the different types of network topologies and protocols.
- ✓ Understand and analyze the theoretical foundation of computer science, understand the notion of regular set, finite automata and Regular expressions.
- ✓ To learn the concept of microprocessors, design and develop assembly language code to solve problems

Sem-VI

- ✓ Learn different technologies used at client Side Scripting Language, Learn XML, CSS, and JavaScript.
- ✓ To provide a strong foundation of fundamental concepts in Artificial Intelligence
- ✓ To learn Predictive Analytics, Graphical models and Reinforcement Learning.

<p>B.SC in Computer Science (Honours) (Year wise)</p>		<p>Part I</p> <ul style="list-style-type: none"> ✓ To understand the basics of computer system, its basic architecture, concept of software and hardware. ✓ To learn different types of number system and coding techniques, conversion of number system. ✓ To learn and solve problems based upon different data structure. ✓ Design new algorithms for new applications and able to analyze the space & time efficiency of most algorithms. ✓ Explain the fundamental of mathematical logic, graphs and its application, recurrence relations and generating function.
		<p>Part II</p> <ul style="list-style-type: none"> ✓ Perform conversions among different number systems, became familiar with basic logic gates and understand Boolean algebra and simplify simple Boolean functions by using basic Boolean properties & design of combinational circuits such as Multiplexers, De-multiplexers, Encoder and Decoder etc. ✓ Understand the design of sequential Circuits such as Flip-Flops, Registers, and Counters. ✓ Understand and analyze the theoretical foundation of computer science. ✓ Understand the notion of finite automata, regular expression and tuning machine. ✓ Understand the difference between object oriented programming and data types in C++. ✓ To learn programming using C++ features such as composition of objects, Operator overloading, inheritance, Polymorphism etc.

		<ul style="list-style-type: none"> ✓ Demonstrate understanding of common numerical methods and how they are used to obtain approximate solutions to otherwise intractable mathematical problems. ✓ Apply numerical methods to obtain approximate solutions to mathematical problems. ✓ Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations. ✓ Analyze and evaluate the accuracy of common numerical methods.
		<p>Part III</p> <ul style="list-style-type: none"> ✓ Ability to perform computer arithmetic operations and understand control unit operations. ✓ Ability to design memory organization that uses banks for different word size operations. ✓ Ability to understand the concept of cache mapping techniques and understand the concept of I/O organization ✓ Acquire knowledge of different network models like OSI model and TCP/IP model. ✓ Study Physical layer, Data-link Layer, Network Layer, Presentation layer, Session layer, Application layer design issues, Transport layer services, and protocols. ✓ Introduction to the Architecture and programming of the microprocessor 8085 and learning about interfacing and various applications of microprocessor. Able to design and develop assembly language programming.

		<ul style="list-style-type: none">✓ Provide practical hands-on experience with microprocessor applications and interfacing techniques, understand 8085 microprocessor kit, knowledge of 8085 instruction set and ability to utilize it in assembly language programming. ✓ To understand the basic concepts regarding database, know about query processing and techniques involved in query optimization and understand the concepts of database transaction and related database facilities including concurrency control, backup and recovery.
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