SESHADRIPURAM FIRST GRADE COLLEGE

Yelahanka New Town, Bengaluru – 560064

Permanently Affiliated to Bangalore University, Recognized by Government of Karnataka

& Recognized under Section 2(f) & 12(B) of the UGC Act, 1956,

Accredited 'B' Grade by NAAC

COURSE OUTCOMES OF B.C.A

Year 2016- 17 to 2018-19

Paper Code	Course Title	Semester	CO	Course Outcome
BCA 103T	Problem Solving Techniques using C	I Sem	CO1	It gives students ability to define and manage data structures based on problem subject domain.
			CO2	To be able to develop c programs on Linux platform
			CO3	Enhance skill on problem solving by constructing algorithms
			CO4	Identify solution to a problem and apply control structures and user defined functions for solving the problem
			CO5	Demonstrate the use of Strings and string handling functions and apply skill of identifying appropriate programming constructs for problem solving
BCA 105T	Discrete Mathematics	I Sem	CO1	Constrict simple mathematical proofs and process the ability to verify them.
			CO2	Expressing mathematical properties formally via the formal language of propositional logic and predicate logic
			CO3	Understanding basic mathematical objects such as sets, functions, and relations.
			CO4	Ability to describe computer programs (Recursive functions).
			CO5	Understanding various techniques of mathematical induction.

BCA 104T	Digital Electronics	I Sem	CO1	Learn the basics of gates.
			CO2	Construct basic combinational circuits and verify their functionalities
			CO3	Apply the design procedures to design basic sequential circuits
			CO4	Learn about counters, Learn about Shift Registers
			CO5	To understand the basic digital circuits and to verify their operation
BCA 203T	Data Structures	II Sem	CO1	Design correct programs to solve problems.
			CO2	Choose efficient data structures and apply them to solve problems.
			CO3	Analyze the efficiency of programs based on time complexity.
			CO4	Prove the correctness of a program using loop invariants, pre-conditions and post-conditions in programs.
			CO5	Demonstrate the different sorting, searching techniques and understood various file organizations
BCA 204T	Data Base Management System	V Sem	CO1	Understanding of DBMS, its structure, components, people, interfaces etc
			CO2	

			CO3 CO4 CO5	Understanding of the fundamental elements of relational database management systems Understanding of basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL. Designing ER-models to represent simple database application scenarios Convert the ER-model to relational tables, populate relational database and formulate
BCA 205T	Numerical and Statistical Methods	II Sem	CO1 CO2 CO3 CO4 CO5	Recognize the error in the number generated by the solution. Compute the solution of algebraic and transcendental equation by numerical methods like Bisection Method and Newton Raphson Method. Apply method of Interpolation and Extrapolation for prediction. Recognize elements and variables in Statistics and summarize qualitative and quantitative data. Calculate measures of central tendency which will be used as further mathematical treatment in correlation, regression etc.
BCA 303T	Object oriented Programming using C++	III Sem	CO1	Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects.

			CO2 CO3 CO4 CO5	Understand dynamic memory management techniques using pointers, constructors, destructors, etc. Describe the concept of function overloading, operator overloading, virtual functions and polymorphism. Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming. Demonstrate the use of various OOPs concepts with the help of programs
BCA 305T	Operating System	III Sem	CO1 CO2 CO3 CO4 CO5	Understanding of the important computer system resources and the functions. To study the process management and scheduling. To understand various issues in Inter Process Communication (IPC) and the role of OS in IPC. To understand the concepts and implementation Memory management policies and virtual memory. To understand the working of an OS as a resource manager, file system manager, process manager, memory manager and I/O manager and methods used to implement the different parts of OS
BCA 403T	Visual Programming	IV Sem	CO1 CO2	Understand Visual Basic applications.

			CO3 CO4 CO5	Helps to create software interface and codes in an easy to use graphical environment. Helps to develop windows based applications rapidly. It helps greatly in accessing databases, using ADO, DAO and also letting students use various Active X controls and objects. To understand programming using Windows API.
BCA 405T	Operation Research	IV Sem	CO1 CO2 CO3 CO4 CO5	Construct linear integer programming models and discuss the solution techniques. Set up decision models and use some solution methods for nonlinear optimization problems. Propose the best strategy using decision making methods under uncertainty and game theory. Formulate and solve problems as networks and graphs. Develop linear programming (LP) models for shortest path, critical path, minimum cost flow, and transportation problems, assignment problems, theory of games.
BCA 404T	Unix and Shell Programming	IV Sem	CO1 CO2 CO3	Gets introduced to shell scripting language which allows visualizing the working of an interpreter. Understands the use of process management.

			CO4 CO5	Highlights about usage of administration privileges. Scripts and programs will be accompanied by printed output demonstrating Completion of a test plan. Analyze a given problem and apply requisite facets of SHELL Programming in order to devise a SHELL script to solve the problem
BCA 502T	Software Engineering	V Sem	CO1 CO3 CO3 CO4: CO5:	Students can have solid base of knowledge about good Software Engineering best practices, Requirement Engineering, Design Activity, and Testing Process. Helps in understanding concepts like Risk Management, Software Reliability and Reusability. Highlights on Software Procurement and Prototyping. It equips the student with skills which will help him or her in playing various roles in IT industry. Recognize ethical and professional responsibilities in engineering situations and make informed judgments which must consider the impact of engineering solutions in global, economic, environmental and societal contexts.
BCA 501T	Data Communication and Networks	V Sem	CO1 CO2	Student will be able to understand network communication using the layered concept, Open System Interconnect (OSI) and the Internet Model.

			CO3 CO4 CO5	Student will be able to understand various types of transmission media, network devices; and parameters of evaluation of performance for each media and device. Student will be able to understand the concept of flow control, error control and LAN protocols; to explain the design of, and algorithms used in, the physical, data link layers. Student will understand the working principles of LAN and the concepts behind physical and logical addressing, subnetting and supernetting. Student shall understand the functions performed by a Network Management System and to analyze connection establishment and congestion control with respect to TCP Protocol.
BCA 504T	Java Programming	V Sem	**CO1** CO2 CO3 CO4 CO5	Use an integrated development environment to write, compile, run, and test simple Object-oriented Java programs. Read and make elementary modifications to Java programs that solve real-world problems. Validate input in a Java program. Identify and fix defects and common security issues in code. Understand the details of Applet Programming, Graphics Programming, Input/Output

BCA 505T	Microprocessor and Assembly Language	V Sem	CO1 CO2 CO3 CO4 CO5	Describe the architecture and Organization of Microprocessor along with instruction set format. Describe modes and functional block diagram of 8085 along with pins and their functions. Describe memory and addressing modes. List, describe and use different types of instructions, directives and Interrupts. Develop assembly language programs using various programming tools.
BCA 503T	Computer Architecture:	V Sem	CO1 CO2 CO3 CO4 CO5	The study of computer architecture helps to know the execution of computer instruction at micro level. The data flow, timing analysis, memory hierarchy, tradeoff between execution cycles, hardware requirements, software hardware tradeoffs can be known. It helps to write assembly code, real time code or time critical systems coding. Memory hierarchy model, RAM, ROM can be known exactly by computer architecture. Understand the architecture and functionality of central processing unit.
BCA 601T	Theory of Computation	VI Sem	CO1	Defines machine models formally, finite automate, regular languages and Turing machines.

			CO2	Synthesizes finite automata with specific properties.
			CO3	Applies transformation between multiple representations of finite automata.
			CO4	Explains the difference between deterministic finite automata and non-deterministic finite automata and relationship between DFA and Regular languages.
			CO5	Proves the decidability or complexity of a variety of problems
BCA 602T	System Programming	VI Sem	CO1	To understand the basics of system programs like editors, compiler, assembler, linker, loader, interpreter and debugger.
			CO2	Describe the various concepts of assemblers and macro processors.
			CO3	To understand the various phases of compiler and compare its working with assembler.
			CO4	To understand how linker and loader create an executable program from an object module created by assembler and compiler.
			CO5	To know various editors and debugging techniques.
BCA 604T	WEB Programming	VI Sem	CO 1	Understand the details of Fundamentals of web.
			CO 2	Identify in depth HTML and XHTM.

			CO 3	Specify the classification and characteristics of Java Script.
			CO 4	Deliberate the details of Java Script and HTML documents.
			CO 5	Deliberate in details with examples Dynamic documents with Java Script.
BCA 603T	Cryptography and Network Security	VI Sem	CO1	It helps to understand various available encryption and decryption algorithm.
			CO2	It helps to understand the vulnerability analysis of network security.
			CO3	And deep understanding of hash functions and message authentication.
			CO4	To be able to secure a message over insecure channel by various means.
			CO5	To understand various protocols for network security to protect against the threats in the networks.