BCA – IT for Healthcare

Programme Outcomes (POs)

PO1. Be technology-oriented with the knowledge and ability to develop creative solutions, and better understand the effects of future developments of computer systems and technology on people and society.

PO2. Get some development experience within a specific field of Computer Science, through project work.

PO3. Get ability to apply knowledge of Computer Science to the real-world issues.

PO4. Be familiar with current research within various fields of Computer Science.

PO5. Use creativity, critical thinking, analysis and research skill.

PO6. Learn new technology, grasping the concepts and issues behind its use and the use of computers.

PO7. Get prepared for placement by developing personality & soft skills.

PO8. Communicate scientific information in a clear and concise manner.

PO9. Build up programming, analytical and logical thinking abilities.

PO10. Be able to understand the role of Computer Science in solving real time problems in society.

PO11. Know the recent developments IT, future possibilities and limitations, and understand the value of lifelong learning.

PO12. Get an ability to participate in debates, discussions in the society constructively.

Programme Specific Outcomes (PSOs)

PSO1 Enrich the knowledge in the areas like DBMS, Software Engineering, Healthcare and core computing subjects.

PSO2 Understand all dimensions of the concepts of software application and projects.

PSO3 Develop in-house applications in terms of projects. Interact with IT experts & knowledge by IT visits. Get industrial exposure through Industrial Internship in IT in-dustry.

PSO4 To make them employable according to current demand of IT Industry in Healthcare and be a responsible citizen.

COURSE OUTCOMES (COs)

COs of Sem I to Sem III common for all BCA programmes

Semester	Course Code	Course Name	Course Outcomes (COs)
I	**20BCA1C03**	**Fundamentals Of Mathematics**	**CO 1 :** Apply the concept of Mathematical Logics. **CO 2:** Use concept of Matrices and Determinants. **CO 3:** Apply the concept of Mathematical Logics. **CO 4:** Solve the problems using concepts of Set theory. **CO 5:** Illustrate the implementation of Permutation and Combination
	20BCA1C04	**Computer Fundamentals & Organization**	**CO 1:** Identify the concepts and applications of computers. **CO 2:** Use of computer architecture and its languages efficiently. **CO 3:** Identify the importance of internal organization of computer and problem solving aspects. **CO 4**: Illustrate the networking of computers and IPR concepts. **CO 5**: Design the static webpage and use MS Office efficiently.
	20BCA1C05	**Programming In C**	**CO 1**: Analyse the algorithm and illustrate problem using flowchart. **CO 2:** Apply the concepts of an arrays in real time applications. **CO 3:** Use the functions for various problems. **CO 4:** Solve the problems using pointers and structures. **CO 5:** Illustrate the basic file operations.
	20BCA1C06	**Introduction To Linux**	**CO1**: Explore the basic LINUX commands with its architecture. **CO2:** Use LINUX file system and different system calls in files. **CO3:** Analyze the working of processes in LINUX operating system. **CO4:** Demonstrate the simple shell scripting with VI editor. **CO5:** Use the system administrative skills in Linux operating system.

Semester	Course Code	Course Name	Course Outcomes (COs)
II	**20BCA2C03**	**Operating Systems**	**CO 1:** Explore the fundamental components of a computer operating system. **CO 2:** Compare and recommend various scheduling algorithms for processes, and solve the deadlock problems. **CO 3:** Recommend the requirement of process synchronization and coordination handled by OS. **CO 4:** Analyze the memory management schemes. **CO 5:** Identify and compare the security and protection mechanisms related to an OS.
	20BCA2C04	**Object Oriented Programming With C++**	**CO 1:** Explore the features of concepts in object-oriented programming. **CO 2:** Apply the concepts like class, object and functions in basic programs. **CO 3:** Identify the use of operator overloading and apply inheritance concept for basic problems. **CO 4:** Illustrate the concepts of pointers and virtual functions. **CO 5:** Apply and relate the file operations concepts and its functionalities.
	20BCA2C05	**Data Structures Using C**	**CO 1**: Analyze algorithms and algorithm correctness. **CO 2**: Apply the searching and sorting techniques in real time applications. **CO 3**: Explore concepts on stack and queue operation and its implementation. **CO 4**: Adopt the knowledge of linked list on node of array. **CO 5**: Apply the concepts of trees and its applications.
III	**16BCA3C01**	**Fundamentals Of Information Security**	**CO1** : Explain basic principles, critical concepts of Informatin Security, System Development life cycle **CO2** : Summarize the concepts related to data protection and safe guarding of assets, various threats and attacks **CO3:** Classify and analyze the different risk mitigation strategy options, risk controls, process of risk assessment **CO4:** Illustrate and examine the need of Intrusion detection and prevention systmes - Firewall, Network security policies

Semester	Course Code	Course Name	Course Outcomes (COs)
	16BCA3C02	**Relational Database Management System (Rdbms)**	**CO 1:** Explain the basic concept of DBMS, its advantages and applications and to summarize the role of different database users **CO 2**:Illustrate ER - diagram notations for developing the logical design of the database, and to show the conversion of logical design to relational table **CO 3** :Evaluate the different SQL queries on database to create and manipulate relational database, and to illustrate relational algebra **CO 4** :Apply different normalisation techniques on the database by applying the concept of functional dependency/decomposition. **CO 5** :Analyse the concept of transaction processing, discuss different locking protocols and deadlock and recovery management, determine the view and conflict serializability of given schedule.
	16BCA3C03	**Computer Networks**	**CO 1** : Describe the functions of each layer in OSI and TCP/IP model. **CO 2** : Explain the network devices and Wireless networking components. **CO 3**: Classify the network routing protocols and analyze how to assign the IP addresses for the given network as well as describe the application layer. **CO 4:** Illustrate the WAN technology and to model the Network operating systems and trouble shooting network.
	16BCA3C04	**Programming In Java**	**CO 1:** Demonstrate Clear understanding of Object Oriented Programming paradigm **CO 2:** Demonstrate the Understanding of simplicity, type safe and modularity concepts of Java **CO 3:** Students will be able to develop a model web programming using Applet and developing the interface. **CO 4:** Apply Concept of multi-tasking through Thread/Multi-threading and learning the systems calls of JVM **CO 5:** Illustrate the Query processing through Java Programming and Understanding of Database and integration with JDBC

COs from Sem IV to Sem VI of BCA IT for Healthcare is given below :

Subject code	Subject name	Course outcomes
21BCAHC4C01	**ML with python**	CO1. Acquire knowledge of python implementation CO2. Understand different machine learning models CO3. Analyse machine learning algorithms and evaluate for different datasets CO4. Evaluate the algorithms with respect to testing dataset CO5. Apply enhancement techniques to improve the machine learning process or create new algorithm
21BCAHC4DSE01	**Computer vision in healthcare**	CO1. Acquire knowledge of image formation, geometry for understanding the technical aspects of computer vision applications. CO2. Understand the relationships between geometric figures and the images, or mappings, that result from projecting them onto another surface. CO3. Analyze prerequisites for understanding image formed for matching and recognition of image, like feature detection and calibration methods. CO4. Evaluate the use of epipolar gemotry in computer vision applications and challenges and apply in 3d construction CO5. Apply computer vision concepts to create health care application using 2D medical images
21BCAHC4DSE02	**Web Technology**	CO1. Interpret the HTML tags, CSS and PHP code. CO2. Develop and incorporate dynamic capabilities in Web pages using DOM and JavaScript. CO3. Design dynamic web pages using PHP, MySQL CO4. Create and publish web services.
21IC0VE1	**Indian Constitution**	CO1. To learn and understand the Indian constitution and follow as a citizen CO2. To remember, understand and apply the Indian constitution and also citizen following the constitution within the framework. CO3. To understand the concept of CM and state governor, PM and President appointment of supreme court, High court and consumer court-judges CO4. To under the existing houses and functioning system of it.
21BCAHC4CE01	**Visual Programming using .Net**	CO1. Understand and identify the fundamental concepts of object-oriented programming. CO2. Know how to write and run a complete program. CO3. Understand the programming algorithm, process, and structure CO4. Understand the impact of ACP.NET and C#.NET on business.

20BCAHC4C02	**Data warehousing in healthcare using OLAP**	CO1. Design Data Warehouse Models. CO2. Develop Data Mining Algorithms. CO3. Understand OLAP Capabilities. CO4. Implement Data Warehousing and Mining Skills in Business Intelligence.
21BCAHC4C01L	**Python programming Lab**	CO1. To Acquire knowledge of python implementation CO2. To Understand different datatypes and functions CO3. To Apply the knowledge of python in various computational task CO4. To Analyse the problem and implement the logic using python
21BCAHC4DSE01	**Research paper/publication**	CO1. To acquire the knowledge of research and publications CO2. To apply the steps involved in writing a research paper CO3. To formulate a correct research question and study design CO4. To implement the appropriate methods for data collection and analysis CO5. To formulate the appropriate discussion and conclusion for the study
21BCAHC4DSE02L	**Web Technology Lab**	CO1. Interpret the HTML tags, CSS and PHP code. CO2. Develop and incorporate dynamic capabilities in Web pages using DOM and JavaScript. CO3. Design dynamic web pages using PHP, MySQL CO4. Create and publish web services.
20BASEC01	**Legal aspects of healthcare**	CO1. To learn the legal terminologies and laws that apply to hospital and healthcare administration CO2. To differentiate between the employer's and employee's legal responsibilities, and the patient's rights CO 3. To understand the common medical-legal issues faced by healthcareprofessionals and organisations both inIndia and globally.
20BCAHC4C02L	**Data warehousing in healthcare using OLAP Lab**	CO1. Design Data Warehouse Models. CO2. Develop Data Mining Algorithms. CO3. Understand OLAP Capabilities. CO4. Implement Data Warehousing and Mining Skills in Business Intelligence.