

Bhavan's Vivekananda College
of Science, Humanities and Commerce
(Sainikpuri, Secunderbad, Telangana – 500094)
Autonomous College – Affiliated to Osmania University
Accredited with 'A' Grade by NAAC

Bachelor of Computer Application

Program Outcomes:

PO1 Knowledge: Acquire knowledge in computer application theory, algorithm principles, mathematical foundations and statistical analysis in the design and modelling of computer based systems.

PO2 Problem Solving: Analyze and apply latest technologies to solve problems in the areas of computer applications.

PO3 Skills: Apply programming, technical and professional skills to become a software entrepreneur.

PO4 Adaptability: Adapt to the fast changing world of information technology needs.

PO5 Communication: Communicate effectively on problems, issues and solutions with community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO6 Ethics & Environment: Apply ethical principles and commit to professional ethics and responsibilities and norms in research and the functional areas, understand the issues of environmental context and sustainable development.

PO7 Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO8 Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context of socio, economic and technological changes.

Program Specific Outcomes

PSO1 To prepare graduates who will have a successful professional career in the software industry, government, academia, research and other domains where computer applications are deployed.

PSO2 Provide effective and efficient real time solutions by using client/server programming languages such as advanced java programming, web programming.

PSO3 Creating a team work environment to develop application software.

Course Outcomes:

Name of the Course	Discrete Mathematics
Course Code	BCA141
CO1	To familiarise the concept of sets and its pictorial representation and its properties
CO2	To familiarise the concept of permutations and combinations
CO3	To familiarise the concept of Graphs and Trees
CO4	To familiarise the concept of Full Adder, Half Adder, Multiplexers

Name of the Course	Programming in 'C'
Course Code	BCA142
CO1	Write basic programs on their own using C.
CO2	Get equipped to use control statements, decision making and looping statements.
CO3	Use the concepts of arrays, strings and functions
CO4	Use the concepts of structure, unions, pointers and preprocessors

Name of the Course	Fundamentals of Information Technology
Course Code	BCA143
CO1	Be familiarized with basic components of a Computer System.
CO2	Be familiarized with basic Operating System & Database concepts
CO3	Get knowledge about networks & its Components.
CO4	Be familiarized about internet and its applications.

Name of the Course	General English
Course Code	BCA144
CO1	Acquire basic foundation of grammar and its usage.
CO2	Improve communication skills
CO3	Improve writing skills
CO4	Develop study skills

Name of the Course	Information Systems Theory and Applications
Course Code	BCA145
CO1	Be familiarized with the basics of Information System concepts.
CO2	Learn planning and development of Information Systems .
CO3	Be solving the problems and finding out solutions by decision making in an organization.
CO4	Learn marketing research process and human resource management.

Name of the Course	Programming in C Lab
Course Code	BCA142P
CO1	Developing logic skills using control and looping statements
CO2	'C' concepts implemented with a practical approach(arrays,strings,functions,structure,union,pointers,pre processors)

Name of the Course	Fundamentals of Information Technology Lab
Course Code	BCA143P
CO1	Acquire basic knowledge of creation documents and presentation effectively.
CO2	Acquire basic knowledge in business calculations, analysis & Database Concepts.

Name of the Course	Programming in C++
Course Code	BCA241
CO1	Write basic C++ programs on their own.
CO2	Get equipped to use the functions and object oriented programming concepts.
CO3	Use the concepts of inheritance and polymorphism.
CO4	Use the concepts of templates and exception handling.

Name of the Course	IT Hardware
Course Code	BCA242
CO1	Be familiar with computer, hardware, software and bus structure, Be able to identify the different motherboard components connected to a computer
CO2	Be familiar with processors, power supply and power protection systems with backup
CO3	Be able to assemble a system and install various drivers and operating systems.
CO4	Be able to troubleshoot and understand the basics of boot sequences, methods and startup utilities

Name of the Course	Effective Documentation and Presentation
Course Code	BCA243
CO1	Acquire Comprehension skills
CO2	Improve reference skills.
CO3	Acquire Correspondence skills for day to day business operations.
CO4	Acquire advanced writing skills.

Name of the Course	Data Analysis
Course Code	BCA244
CO1	Be able to collect and analyze data.
CO2	Apply Statistical Methods for analyzing data.
CO3	Be familiar to perform statistical tests for analyzing data.
CO4	Compute and interpret Correlation Analysis, regression lines and multiple regression analysis with applications.

Name of the Course	Organizations and Functions
Course Code	BCA245
CO1	Analyze concepts and demonstrate skills that are fundamental to organizational development and leadership.
CO2	Be able to plan and control projects.
CO3	Be able to make best decisions for investments.
CO4	Be ready to do marketing and sales with respective to products

Name of the Course	Programming in C++ Lab
Course Code	BCA241P
CO1	Able to write example programs for control statements, arrays , functions and OOPS concepts.
CO2	Able to implement concepts of Exception handling and Templates.

Name of the Course	IT-Hardware Lab
Course Code	BCA242P
CO1	Be able to identify the different motherboard components and other parts of the computer to assemble a computer
CO2	Be able to format and install the operating system, setup various drivers and operating systems.

Name of the Course	Effective Communication
Course Code	BCA341
CO1	Be equipped with better writing skills.
CO2	Be equipped with aural skills.
CO3	Be equipped with oral skills.
CO4	Be equipped with presentation skills for effective communications.

Name of the Course	Data Communication and Networking
Course Code	BCA342
CO1	Be familiarized with fundamental concepts and terminologies in networking, seven layers of OSI model and digital transmission.

CO2	Be familiarized with analog transmission, transmission media and know about FDM, TDM. (Multiplexing techniques) and switching networks.
CO3	Acquire a sound knowledge about data link layer functionalities such as error detection, DLL protocols, LANs and connecting LANs.
CO4	Have a thorough understanding in functionalities of network layer such as addressing, internet protocols, mapping, forwarding, delivering and routing.

Name of the Course		Operating Systems
Course Code		BCA343
CO1	To impart knowledge of operating system services before learning how these services are implemented.	
CO2	To understand a process and how it is synchronized and scheduled.	
CO3	Be Familiarized with the different approaches of memory management.	
CO4	Be able to familiarize with the structure and organization of file system.	

Name of the Course		Object Oriented Programming with Java
Course Code		BCA344
CO1	Be familiarized with java fundamentals	
CO2	Develop java programs relating to control statements, arrays, strings and vectors	
CO3	Develop java programs relating to packages and interfaces	
CO4	Develop java programs relating to multi-threaded programs and exception handling.	

Name of the Course		Gender Sensitization
Course Code		BCA345
CO1	Identify ways and means by which the course learnt can be put into practice	
CO2	Ability to open up and give viewpoints freely on gender bias	
CO3	Propagate ideas of gender sensitisation at the personal and professional level.	
CO4	Examine the effectiveness of the legal rights that are framed under Indian constitution to prevent gender discrimination.	

Name of the Course		Operating Systems Lab
Course Code		BCA343P
CO1	Acquire knowledge on the basic Unix commands.	
CO2	Be able to develop programs through the Unix terminal.	

Name of the Course	Object Oriented Programming with Java Lab
Course Code	BCA342P
CO1	Develop java applications using arrays, strings and inheritance
CO2	Develop java applications using multithreading and exception handling.

Name of the Course	Environmental Studies
Course Code	BCA441
CO1	Ability to get the message across that over-exploitation of Earth will lead to destruction of Humanity.
CO2	Ability to connect with real-life situations through field trips and social service.
CO3	Ability to take initiatives and explore innovative ways to conserve biodiversity and natural resources
CO4	Examine the various acts under environmental legislation that have been framed to save the earth.

Name of the Course	Mobile Computing
Course Code	BCA442
CO1	Acquire knowledge on Multiplexing and Modulation Techniques.
CO2	Acquire knowledge on Medium Access Control and IEEE Standard 802.11.
CO3	Be familiar with functionalities of Mobile Network Layer and Mobile Transport Layer.
CO4	Be familiar with functionalities of WAP and Wireless Markup Language Scripting.

Name of the Course	Database Management System
Course Code	BCA443
CO1	To impart knowledge of basic database concepts.
CO2	Be able to represent data through ER and EER Models
CO3	Gain knowledge about Concurrent transactions, backup and recovery techniques
CO4	Understand technical and managerial roles of Database Administration & Data Administrator.

Name of the Course	GUI Programming and Data Structures (Using Java)
Course Code	BCA444
CO1	Develop programs using applets, event handling mechanisms and layout managers.
CO2	Develop programs using swing components
CO3	Develop programs using Collection of classes
CO4	Develop programs using legacy classes, utility classes and graphics

Name of the Course	System Analysis and Logical Design
Course Code	BCA445
CO1	Be able to analyze different types of skills that are required for a System Analyst.
CO2	Be able to identify and select System Development Projects.
CO3	Be able to determine System Requirements & draw Data Flow Diagrams.
CO4	Be able to draw Decision Trees & Tables and also able to acquire knowledge on designing Interfaces & Dialogues.

Name of the Course	Database Management System Lab
Course Code	BCA443P
CO1	Be able to understand the basic SQL commands
CO2	Be able to query the database through SQL functions, nested queries, Joins, etc.,

Name of the Course	GUI Programming and Data Structures (Using Java) Lab
Course Code	BCA444P
CO1	Develop java applications using applets and swings
CO2	Develop java applications using Collection classes and interfaces

Name of the Course	Internet Protocols
Course Code	BCA541
CO1	Be familiarized with fundamental concepts of IP addressing, Subnetting and various routing methods.
CO2	Be familiarized with Fragmentation, ARP, SMTP.
CO3	Acquire the knowledge about TCP operations.
CO4	Acquire knowledge on Domain Name System.

Name of the Course	Object Oriented System Development
Course Code	BCA542
CO1	Acquire knowledge on UML features.

CO2	Be able to draw various UML diagrams.
CO3	Be familiar with objects relationships, attributes and methods.
CO4	Be familiar with quality assurance and security to applications.

Name of the Course	Web Technologies
Course Code	BCA543a
CO1	Be able to design static webpages.
CO2	Be able to develop client-side scripting using Javascript.
CO3	Develop applications using DHTML.
CO4	Develop XML applications with styles.

Name of the Course	Advanced Java Programming
Course Code	BCA544a
CO1	Develop programs using JDBC.
CO2	Develop programs using Java Servlets.
CO3	Develop programs using Java Server Pages.
CO4	Develop programs using JSTL and JSF Tags.

Name of the Course	Web Technologies Lab
Course Code	BCA543aP
CO1	Students will be able to design static web pages and design simple web pages using scripting language (JavaScript).
CO2	Students will be able to design dynamic web pages using DHTML and design web pages using XML.

Name of the Course	Advanced Java Programming Lab
Course Code	BCA544aP
CO1	Develop java applications using JDBC and Servlets
CO2	Develop java applications using Java Server Pages

Name of the Course	Information Security
Course Code	BCA641a
CO1	Be familiar with the priority given to Security in Information System.
CO2	Acquire knowledge on various Security related laws and risk management in Information System
CO3	Acquire knowledge to plan for security by implementing security technology.
CO4	Be familiar with various Cryptographic Algorithms and Tools.

Name of the Course	System and Network Administration
Course Code	BCA642a
CO1	Students will acquire knowledge on UNIX Essential Administrative Tools and Techniques, Startup and Shutdown process.
CO2	Students will acquire knowledge on User and Groups Account

	Management and Managing System Resources.
CO3	Students will acquire knowledge on Maintenance of File System, Secondary Storage Devices and Backup Techniques.
CO4	Students will Be familiar with functionalities of TCP/IP and E-Mail.

Name of the Course		Software Testing
Course Code		BCA643a
CO1	Be able to learn different cycles of testing and to analyze the bugs.	
CO2	Be able to learn how to build and establish software testing methodology.	
CO3	Be able to test different phases.	
CO4	Be able to implement configuration of software management.	

Name of the Course		E-Commerce
Course Code		BCA644a
CO1	Be able to analyse the role of E-commerce on Independent Third Parties & Impact of E-Commerce on Business Models.	
CO2	Be able to analyze about EDI & Risks of Insecure Systems.	
CO3	Be able to analyze about Risk Management & Internet Standards.	
CO4	Be able to work With Firewalls & Online Payment System.	

Course Matrix

Name of the Program: BCA											
Discrete Mathematics								Course Code: BCA 141			
Semester: I								Year: I			
Academic Year: 2017-18								Batch: 2017-20			
	Program Outcomes								PSO		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	2	1	3	1	1	3	3	3	2
CO2	3	2	2	1	2	1	1	2	3	3	2
CO3	3	3	3	3	2	2	1	3	3	3	2
CO4	3	3	2	2	2	2	1	2	3	3	2
	3	2.3	2.3	1.8	2.3	1.5	1	2.5	3	3	2

Name of the Program: BCA											
Programming in 'C'								Course Code: BCA 142			
Semester: I								Year: I			
Academic Year: 2017-18								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	1	1	-	1	-	1	1	2	2	-
CO2	3	3	2	2	1	1	1	2	2	2	3
CO3	3	3	2	2	1	2	2	2	2	2	3
CO4	3	3	3	2	1	2	2	3	2	2	3
	2.8	2.5	2	1.5	1	1.3	1.5	2	2	2	2.25

Name of the Program: BCA											
Fundamentals of Information Technology								Course Code: BCA 143			
Semester: I								Year: I			
Academic Year: 2017-18								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	1	1	1	1	1	1	2	2	1	1
CO2	2	2	2	2	2	1	2	2	1	1	1
CO3	2	2	2	2	2	1	2	3	1	1	1
CO4	2	3	2	2	2	1	3	3	1	1	1
	2	2	1.75	1.8	1.8	1	2	2.5	1.25	1	1

Name of the Program: BCA											
General English									Course Code: BCA 144		
Semester: I									Year: I		
Academic Year: 2017-18									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	-	-	1	2	3	-	2	3	2	-	-
CO2	-	-	2	3	3	3	3	3	2	-	3
CO3	-	-	2	1	3	3	2	3	3	1	2
CO4	3	1	2	2	3	3	2	3	3	2	2
	0.8	0.25	1.75	2	3	2.3	2.3	3	2.5	0.75	1.75

Name of the Program: BCA											
Information Systems Theory and Applications									Course Code: BCA 145		
Semester: I									Year: I		
Academic Year: 2017-18									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	-	1	2	3	2	3	3	2	-	3
CO2	2	2	2	2	3	2	3	2	2	-	3
CO3	2	2	2	2	3	2	3	2	2	-	3
CO4	3	3	2	3	3	2	3	3	2	-	3
	2.3	1.8	1.8	2.3	3	2	3	2.5	2	0	3

Name of the Program: BCA											
Programming in C Lab									Course Code: BCA 142P		
Semester: I									Year: I		
Academic Year: 2017-18									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	2	2	1	2	2	3	2	2	3
CO2	3	3	3	3	1	3	2	3	1	2	3
	3	3	2.5	2.5	1	2.5	2	3	1.5	2	3

Name of the Program: BCA											
Fundamentals of Information Technology Lab									Course Code: BCA 143P		
Semester: I									Year: I		
Academic Year: 2017-18									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	1	1	1	3	1	1	1	2	1	2
CO2	3	2	2	1	2	1	1	2	2	1	2
	2.5	1.5	1.5	1	2.5	1	1	1.5	2	1	2

Name of the Program: BCA											
Programming in C++									Course Code: BCA 241		
Semester: II									Year: I		
Academic Year: 2017-18									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	2	2	2	1	2	2	2	1	2
CO2	3	3	3	2	2	1	2	2	3	2	3
CO3	3	3	3	3	3	1	2	2	3	2	3
CO4	3	3	3	2	2	1	2	2	3	2	3
	2.75	2.75	2.75	2.25	2.25	1.00	2.00	2.00	2.75	1.75	2.75

Name of the Program: BCA											
IT Hardware									Course Code: BCA 242		
Semester: II									Year: I		
Academic Year: 2017-18									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	2	2	2	1	2	2	2	2	2
CO2	2	2	2	2	2	1	2	2	3	2	2
CO3	2	1	2	2	2	1	1	1	2	2	2
CO4	3	2	2	2	3	1	2	3	2	2	2
	2.50	1.75	2.00	2.00	2.25	1.00	1.75	2.00	2.25	2.00	2.00

Name of the Program: BCA											
Effective Documentation and Presentation									Course Code: BCA 243		
Semester: II									Year: I		
Academic Year: 2017-18									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	1	3	3	2	2	3	3	1	1
CO2	3	2	2	2	2	1	2	1	2	1	2
CO3	-	-	3	2	3	3	3	2	3	-	3
CO4	-	-	3	2	3	3	3	3	3	-	3
	1.5	1.3	2.3	2.3	2.8	2.3	2.5	2.3	2.75	0.5	2.25

Name of the Program: BCA											
Data Analysis									Course Code: BCA 244		
Semester: II									Year: I		
Academic Year: 2017-18									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	2	2	1	1	2	3	3	-	1
CO2	3	3	2	2	1	1	2	3	3	-	1
CO3	3	3	2	2	1	1	2	3	3	-	1
CO4	3	3	2	3	1	1	2	3	3	-	1
	3.00	3.00	2.00	2.25	1.00	1.00	2.00	3.00	3.00	0.00	1.00

Name of the Program: BCA											
Organizations and Functions									Course Code: BCA 245		
Semester: II									Year: I		
Academic Year: 2017-18									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	-	1	2	2	2	2	3	3	2	-	2
CO2	1	1	2	3	2	2	3	3	3	1	3
CO3	-	1	2	2	1	2	3	3	3	-	1
CO4	-	-	1	3	2	2	3	2	2	-	1
	0.3	0.75	1.75	2.5	1.8	2	3	2.8	2.5	0.25	1.75

Name of the Program: BCA											
Programming in C++ Lab								Course Code: BCA 241P			
Semester: II								Year: I			
Academic Year: 2017-18								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	2	2	2	1	2	2	3	1	3
CO2	3	3	3	2	2	1	2	2	3	1	2
	2.50	2.50	2.50	2.00	2.00	1.00	2.00	2.00	3.00	1.00	2.50

Name of the Program: BCA											
IT-Hardware Lab								Course Code: BCA 242P			
Semester: II								Year: I			
Academic Year: 2017-18								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	2	2	2	1	2	3	2	1	3
CO2	2	2	2	2	1	1	2	2	2	1	2
	2.00	2.00	2.00	2.00	1.50	1.00	2.00	2.50	2.00	1.00	2.50

Name of the Program: BCA											
Effective Communication								Course Code: BCA 341			
Semester: III								Year: II			
Academic Year: 2018-19								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	-	-	3	2	3	3	3	3	3	-	2
CO2	1	1	2	2	3	3	3	3	1	1	2
CO3	-	-	3	-	3	3	3	3	3	-	3
CO4	3	1	3	-	3	1	3	1	3	-	2
	1	0.5	2.7	1	3	2.5	3	2.5	2.5	0.25	2.25

Name of the Program: BCA											
Data Communication and Networking								Course Code: BCA 342			
Semester: III								Year: II			
Academic Year: 2018-19								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	1	1	1	1	-	2	1	2	1
CO2	2	2	2	2	1	1	1	3	2	2	2

CO3	3	2	2	2	1	2	2	3	2	3	2
CO4	3	2	2	2	1	2	2	3	2	2	3
	2.5	2	1.75	1.8	1	1.5	1.3	2.8	1.75	2.25	2

Name of the Program: BCA											
Operating Systems						Course Code: BCA 343					
Semester: III						Year: II					
Academic Year: 2018-19						Batch: 2017-20					
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	1	2	-	3	3	1	3	3	3	3	3
CO2	3	3	-	3	1	1	3	3	3	3	3
CO3	2	3	1	3	2	1	2	2	3	3	3
CO4	2	2	1	2	2	1	3	3	3	3	3
	2	2.5	0.5	2.8	2	1	2.8	2.8	3	3	3

Name of the Program: BCA											
Object Oriented Programming with Java						Course Code: BCA 344					
Semester: III						Year: II					
Academic Year: 2018-19						Batch: 2017-20					
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	2	3	1	1	2	3	2	2	2
CO2	2	2	2	3	1	1	2	3	3	2	2
CO3	2	2	2	3	1	1	3	3	3	2	2
CO4	2	2	2	3	1	1	2	3	3	2	2
	2.00	2.00	2.00	3.00	1.00	1.00	2.25	3.00	2.75	2.00	2.00

Name of the Program: BCA											
Gender Sensitization						Course Code: BCA 345					
Semester: III						Year: II					
Academic Year: 2018-19						Batch: 2017-20					
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	-	-	3	2	-	3	3	3	3	-	2
CO2	-	-	2	2	3	2	2	2	2	-	2
CO3	-	-	3	2	3	3	3	3	2	-	2
CO4	-	-	1	1	2	2	1	2	2	-	1
	0	0	2.25	1.8	2	2.5	2.3	2.5	2.25	0	1.75

Name of the Program: BCA											
Operating Systems Lab								Course Code: BCA 343P			
Semester: III								Year: II			
Academic Year: 2018-19								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	2	2	2	1	1	2	2	2	2
CO2	2	2	2	2	2	1	1	2	2	2	2
	2.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00

Name of the Program: BCA											
Object Oriented Programming with Java Lab								Course Code: BCA 344P			
Semester: III								Year: II			
Academic Year: 2018-19								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	3	3	1	1	2	3	3	3	2
CO2	2	3	3	3	1	1	2	3	3	3	2
	2.00	2.50	3.00	3.00	1.00	1.00	2.00	3.00	3.00	3.00	2.00

Name of the Program: BCA											
Environmental Studies								Course Code: BCA 441			
Semester: IV								Year: II			
Academic Year: 2018-19								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	-	-	2	2	2	3	2	3	2	-	2
CO2	-	2	1	2	2	2	3	3	2	-	2
CO3	-	1	1	2	2	3	2	3	1	-	1
CO4	-	-	2	2	2	3	2	3	2	-	2
	0	0.7	1.5	2	2	2.8	2.3	3	1.75	0	1.75

Name of the Program: BCA											
Mobile Computing								Course Code: BCA442			
Semester: IV								Year: II			
Academic Year: 2018-19								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	2	2	3	1	2	3	3	1	2
CO2	2	3	3	2	3	2	2	3	3	3	2
CO3	3	3	3	3	3	2	3	3	3	3	2
CO4	3	3	3	3	3	1	3	3	3	3	3
	2.5	2.75	2.75	2.5	3	1.5	2.5	3	3	2.5	2.25

Name of the Program: BCA											
Database Management System								Course Code: BCA443			
Semester: IV								Year: II			
Academic Year: 2018-19								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	3	2	3	2	1	2	3	3	3	3
CO2	2	2	2	3	2	1	3	3	3	3	3
CO3	2	3	3	3	2	1	3	3	3	3	3
CO4	2	1	3	3	3	3	3	3	3	3	3
	2.00	2.00	2.00	2.00	2.00	1.00	1.00	2.00	2.00	2.00	2.00

Name of the Program: BCA											
GUI Programming and Data Structures (Using Java)								Course Code: BCA444			
Semester: IV								Year: II			
Academic Year: 2018-19								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	2	3	1	1	2	3	2	3	3
CO2	2	2	2	3	1	1	2	3	2	3	3
CO3	2	2	2	3	1	1	2	3	3	2	2
CO4	2	2	2	3	1	1	2	3	3	2	2
	2.00	2.00	2.00	3.00	1.00	1.00	2.00	3.00	2.50	2.50	2.50

Name of the Program: BCA											
System Analysis and Logical Design									Course Code: BCA445		
Semester: IV									Year: II		
Academic Year: 2018-19									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	1	1	1	2	2	1	2	1	1	-	-
CO2	1	-	1	2	2	1	2	2	2	-	2
CO3	2	1	2	2	2	1	2	2	1	-	1
CO4	2	2	1	2	2	-	2	2	1	-	2
	1.5	1	1.25	2	2	0.8	2	1.8	1.25	0	1.25

Name of the Program: BCA											
Database Management System Lab									Course Code: BCA443P		
Semester: IV									Year: II		
Academic Year: 2018-19									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	2	2	2	1	1	2	2	2	2
CO2	2	2	2	2	2	1	1	2	2	2	2
	2.00	2.00	2.00	2.00	2.00	1.00	1.00	2.00	2.00	2.00	2.00

Name of the Program: BCA											
GUI Programming and Data Structures (Using Java) Lab									Course Code: BCA444P		
Semester: IV									Year: II		
Academic Year: 2018-19									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	2	3	1	1	2	3	3	3	3
CO2	2	2	2	3	1	1	2	3	3	3	2
	2.00	2.00	2.00	3.00	1.00	1.00	2.00	3.00	3.00	3.00	2.50

Name of the Program: BCA											
Internet Protocols									Course Code: BCA541		
Semester: V									Year: III		
Academic Year: 2019-20									Batch: 2017-20		

COs/POs	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	3	3	3	2	3	3	3	3
CO2	3	1	2	3	2	3	2	3	3	3	3
CO3	3	2	3	3	2	3	2	3	3	3	3
CO4	3	2	3	3	2	3	2	3	3	3	3
	3.00	2.00	2.75	3.00	2.25	3.00	2.00	3.00	3.00	3.00	3.00

Name of the Program: BCA											
Object Oriented System Development								Course Code: BCA542			
Semester: V								Year: III			
Academic Year: 2019-20								Batch: 2017-20			
COs/POs	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	1	1	2	-	1	2	1	3	2	2
CO2	2	1	1	1	1	1	2	1	2	1	1
CO3	2	1	1	1	1	-	1	2	2	1	2
CO4	2	1	2	3	1	-	2	2	2	3	2
	2	1	1.25	1.8	0.8	0.5	1.8	1.5	2.25	1.75	1.75

Name of the Program: BCA											
Web Technologies								Course Code: BCA543a			
Semester: V								Year: III			
Academic Year: 2019-20								Batch: 2017-20			
COs/POs	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	2	2	1	3	3	3	2	3
CO2	3	3	3	3	3	1	3	3	3	3	3
CO3	3	3	3	3	2	1	2	3	3	3	3
CO4	2	2	3	2	1	1	2	3	3	2	3
	2.75	2.50	3.00	2.50	2.00	1.00	2.50	3.00	3.00	2.50	3.00

Name of the Program: BCA											
Advanced Java Programming								Course Code: BCA544a			
Semester: V								Year: III			
Academic Year: 2019-20								Batch: 2017-20			
COs/POs	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	2	3	1	1	2	3	2	3	2

CO2	2	2	2	3	1	1	2	3	3	3	3
CO3	2	2	2	3	1	1	2	3	3	3	3
CO4	2	2	2	3	1	1	2	3	3	3	2
	2.00	2.00	2.00	3.00	1.00	1.00	2.00	3.00	2.75	3.00	2.50

Name of the Program: BCA											
Web Technologies Lab								Course Code: BCA543aP			
Semester: V								Year: III			
Academic Year: 2019-20								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	3	2	2	3	1	3	3	2	2	3
CO2	3	3	3	2	3	1	3	3	3	3	3
	2.50	3.00	2.50	2.00	3.00	1.00	3.00	3.00	2.50	2.50	3.00

Name of the Program: BCA											
Advanced Java Programming Lab								Course Code: BCA544aP			
Semester: V								Year: III			
Academic Year: 2019-20								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	2	3	1	1	2	3	2	3	3
CO2	2	2	2	3	1	1	2	3	2	3	3
	2.00	2.00	2.00	3.00	1.00	1.00	2.00	3.00	2.00	3.00	3.00

Name of the Program: BCA											
Information Security								Course Code: BCA641a			
Semester: VI								Year: III			
Academic Year: 2019-20								Batch: 2017-20			
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	1	2	3	2	2	3	3	2	-	2
CO2	2	1	3	3	2	2	3	3	2	-	2
CO3	2	2	2	3	2	2	2	3	2	-	2
CO4	2	2	2	3	2	2	2	3	2	1	2
	2	1.5	2.25	3	2	2	2.5	3	2	0.25	2

Name of the Program: BCA											
System and Network Administration									Course Code: BCA642a		
Semester: VI									Year: III		
Academic Year: 2019-20									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	2	2	2	1	3	3	2	2	2
CO2	3	2	2	3	2	2	3	3	3	2	3
CO3	3	3	3	3	2	2	3	3	3	3	2
CO4	3	2	2	2	2	1	3	2	3	3	3
	2.75	2.25	2.25	2.50	2.00	1.50	3.00	2.75	2.75	2.50	2.50

Name of the Program: BCA											
Software Testing									Course Code: BCA643a		
Semester: VI									Year: III		
Academic Year: 2019-20									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	3	3	2	1	1	3	1	1	-	2
CO2	1	2	2	2	2	1	3	2	1	-	2
CO3	1	3	3	2	3	2	3	2	2	-	2
CO4	2	2	2	2	2	1	2	1	2	-	3
	1.50	2.50	2.50	2.00	2.00	1.25	2.75	1.50	1.50	0.00	2.25

Name of the Program: BCA											
E-Commerce									Course Code: BCA644a		
Semester: VI									Year: III		
Academic Year: 2019-20									Batch: 2017-20		
	Program Outcomes								Program Specific Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	1	-	1	2	1	2	1	1	1	-	-
CO2	1	1	1	2	2	2	1	1	1	-	-
CO3	2	2	1	2	2	1	1	2	1	-	1
CO4	1	1	2	2	2	-	2	1	1	-	1
	1.3	1	1.25	2	1.8	1.3	1.3	1.3	1	0	0.5

Program Targets

	Course/POs	Program Outcomes								Program Specific Outcomes		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
1	Discrete Mathematics	3.00	2.25	2.25	1.75	2.25	1.50	1.00	2.50	3.00	3.00	2.00
2	Programming in 'C'	2.75	2.50	2.00	1.50	1.00	1.25	1.50	2.00	2.00	2.00	2.25
3	Fundamentals of Information Technology	2.00	2.00	1.75	1.75	1.75	1.00	2.00	2.50	1.25	1.00	1.00
4	General English	0.75	0.25	1.75	2.00	3.00	2.25	2.25	3.00	2.50	0.75	1.75
5	Information Systems Theory and Applications	2.25	1.75	1.75	2.25	3.00	2.00	3.00	2.50	2.00	0.00	3.00
6	Programming in C Lab	3.00	3.00	2.50	2.50	1.00	2.50	2.00	3.00	1.50	2.00	3.00
7	Fundamentals of Information Technology Lab	2.50	1.50	1.50	1.00	2.50	1.00	1.00	1.50	2.00	1.00	2.00
8	Programming in C++	2.75	2.75	2.75	2.25	2.25	1.00	2.00	2.00	2.75	1.75	2.75
9	IT Hardware	2.50	1.75	2.00	2.00	2.25	1.00	1.75	2.00	2.25	2.00	2.00
10	Effective Documentation and Presentation	1.50	1.25	2.25	2.25	2.75	2.25	2.50	2.25	2.75	0.50	2.25
11	Data Analysis	3.00	3.00	2.00	2.25	1.00	1.00	2.00	3.00	3.00	0.00	1.00
12	Organizations and Functions	0.25	0.75	1.75	2.50	1.75	2.00	3.00	2.75	2.50	0.25	1.75
13	Programming in C++ Lab	2.50	2.50	2.50	2.00	2.00	1.00	2.00	2.00	3.00	1.00	2.50
14	IT-Hardware Lab	2.00	2.00	2.00	2.00	1.50	1.00	2.00	2.50	2.00	1.00	2.50
15	Effective Communication	1.00	0.50	2.75	1.00	3.00	2.50	3.00	2.50	2.50	0.25	2.25
16	Data Communication and Networking	2.50	2.00	1.75	1.75	1.00	1.50	1.25	2.75	1.75	2.25	2.00
17	Operating Systems	2.00	2.50	0.50	2.75	2.00	1.00	2.75	2.75	3.00	3.00	3.00
18	Object Oriented Programming with Java	2.00	2.00	2.00	3.00	1.00	1.00	2.25	3.00	2.75	2.00	2.00
19	Gender Sensitization	0.00	0.00	2.25	1.75	2.00	2.50	2.25	2.50	2.25	0.00	1.75
20	Operating Systems Lab	2.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
21	Object Oriented Programming with Java Lab	2.00	2.50	3.00	3.00	1.00	1.00	2.00	3.00	3.00	3.00	2.00
22	Environmental Studies	0.00	0.75	1.50	2.00	2.00	2.75	2.25	3.00	1.75	0.00	1.75
23	Mobile Computing	2.50	2.75	2.75	2.50	3.00	1.50	2.50	3.00	3.00	2.50	2.25
24	Database Management System	2.00	2.00	2.00	2.00	2.00	1.00	1.00	2.00	2.00	2.00	2.00
25	GUI Programming and Data Structures (Using Java)	2.00	2.00	2.00	3.00	1.00	1.00	2.00	3.00	2.50	2.50	2.50
26	System Analysis and Logical Design	1.50	1.00	1.25	2.00	2.00	0.75	2.00	1.75	1.25	0.00	1.25

27	Database Management System Lab	2.00	2.00	2.00	2.00	2.00	1.00	1.00	2.00	2.00	2.00	2.00
28	GUI Programming and Data Structures (Using Java) Lab	2.00	2.00	2.00	3.00	1.00	1.00	2.00	3.00	3.00	3.00	2.50
29	Internet Protocols	3.00	2.00	2.75	3.00	2.25	3.00	2.00	3.00	3.00	3.00	3.00
30	Object Oriented System Development	2.00	1.00	1.25	1.75	0.75	0.50	1.75	1.50	2.25	1.75	1.75
31	Web Technologies	2.75	2.50	3.00	2.50	2.00	1.00	2.50	3.00	3.00	2.50	3.00
32	Advanced Java Programming	2.00	2.00	2.00	3.00	1.00	1.00	2.00	3.00	2.75	3.00	2.50
33	Web Technologies Lab	2.50	3.00	2.50	2.00	3.00	1.00	3.00	3.00	2.50	2.50	3.00
34	Advanced Java Programming Lab	2.00	2.00	2.00	3.00	1.00	1.00	2.00	3.00	2.00	3.00	3.00
35	Information Security	2.00	1.50	2.25	3.00	2.00	2.00	2.50	3.00	2.00	0.25	2.00
36	System and Network Administration	2.75	2.25	2.25	2.50	2.00	1.50	3.00	2.75	2.75	2.50	2.50
37	Software Testing	1.50	2.50	2.50	2.00	2.00	1.25	2.75	1.50	1.50	0.00	2.25
38	E-Commerce	1.25	1.00	1.25	2.00	1.75	1.25	1.25	1.25	1.00	0.00	0.50
	TOTAL	76	70	78	85	71	55	79	95	88	59	83
	PROGRAM OUTCOME TARGETS	2.0	1.8	2.1	2.2	1.9	1.4	2.1	2.5	2.3	1.6	2.2

Program Attainments

Sl.No.	Course/POs	Program Outcomes								Program Specific Outcomes		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
1	Discrete Mathematics	3.00	2.25	2.25	1.75	2.25	1.50	1.00	2.50	3.00	3.00	2.00
2	Programming in 'C'	0.92	0.83	0.67	0.50	0.33	0.42	0.50	0.67	0.67	0.67	0.75
3	Fundamentals of Information Technology	2.00	2.00	1.75	1.75	1.75	1.00	2.00	2.50	1.25	1.00	1.00
4	General English	0.75	0.25	1.75	2.00	3.00	2.25	2.25	3.00	2.50	0.75	1.75
5	Information Systems Theory and Applications	2.25	1.75	1.75	2.25	3.00	2.00	3.00	2.50	2.00	0.00	3.00
6	Programming in C Lab	3.00	3.00	2.50	2.50	1.00	2.50	2.00	3.00	1.50	2.00	3.00
7	Fundamentals of Information Technology Lab	2.50	1.50	1.50	1.00	2.50	1.00	1.00	1.50	2.00	1.00	2.00
8	Programming in C++	2.75	2.75	2.75	2.25	2.25	1.00	2.00	2.00	2.75	1.75	2.75
9	IT Hardware	2.50	1.75	2.00	2.00	2.25	1.00	1.75	2.00	2.25	2.00	2.00
10	Effective Documentation and Presentation	1.50	1.25	2.25	2.25	2.75	2.25	2.50	2.25	2.75	0.50	2.25
11	Data Analysis	3.00	3.00	2.00	2.25	1.00	1.00	2.00	3.00	3.00	0.00	1.00
12	Organizations and Functions	0.25	0.75	1.75	2.50	1.75	2.00	3.00	2.75	2.50	0.25	1.75
13	Programming in C++ Lab	2.50	2.50	2.50	2.00	2.00	1.00	2.00	2.00	3.00	1.00	2.50
14	IT-Hardware Lab	2.00	2.00	2.00	2.00	1.50	1.00	2.00	2.50	2.00	1.00	2.50
15	Effective Communication	1.00	0.50	2.75	1.00	3.00	2.50	3.00	2.50	2.50	0.25	2.25
16	Data Communication and Networking	2.50	2.00	1.75	1.75	1.00	1.50	1.25	2.75	1.75	2.25	2.00
17	Operating Systems	2.00	2.50	0.50	2.75	2.00	1.00	2.75	2.75	3.00	3.00	3.00
18	Object Oriented Programming with Java	1.33	1.33	1.33	2.00	0.67	0.67	1.50	2.00	1.83	1.33	1.33
19	Gender Sensitization	0.00	0.00	2.25	1.75	2.00	2.50	2.25	2.50	2.25	0.00	1.75

20	Operating Systems Lab	2.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
21	Object Oriented Programming with Java Lab	2.00	2.50	3.00	3.00	1.00	1.00	2.00	3.00	3.00	3.00	2.00
22	Environmental Studies	0.00	0.75	1.50	2.00	2.00	2.75	2.25	3.00	1.75	0.00	1.75
23	Mobile Computing	2.50	2.75	2.75	2.50	3.00	1.50	2.50	3.00	3.00	2.50	2.25
24	Database Management System	1.33	1.33	1.33	1.33	1.33	0.67	0.67	1.33	1.33	1.33	1.33
25	GUI Programming and Data Structures (Using Java)	2.00	2.00	2.00	3.00	1.00	1.00	2.00	3.00	2.50	2.50	2.50
26	System Analysis and Logical Design	1.50	1.00	1.25	2.00	2.00	0.75	2.00	1.75	1.25	0.00	1.25
27	Database Management System Lab	2.00	2.00	2.00	2.00	2.00	1.00	1.00	2.00	2.00	2.00	2.00
28	GUI Programming and Data Structures (Using Java) Lab	2.00	2.00	2.00	3.00	1.00	1.00	2.00	3.00	3.00	3.00	2.50
29	Internet Protocols	3.00	2.00	2.75	3.00	2.25	3.00	2.00	3.00	3.00	3.00	3.00
30	Object Oriented System Development	1.33	0.67	0.83	1.17	0.50	0.33	1.17	1.00	1.50	1.17	1.17
31	Web Technologies	2.75	2.50	3.00	2.50	2.00	1.00	2.50	3.00	3.00	2.50	3.00
32	Advanced Java Programming	1.33	1.33	1.33	2.00	0.67	0.67	1.33	2.00	1.83	2.00	1.67
33	Web Technologies Lab	2.50	3.00	2.50	2.00	3.00	1.00	3.00	3.00	2.50	2.50	3.00
34	Advanced Java Programming Lab	2.00	2.00	2.00	3.00	1.00	1.00	2.00	3.00	2.00	3.00	3.00
35	Information Security	2.00	1.50	2.25	3.00	2.00	2.00	2.50	3.00	2.00	0.25	2.00
36	System and Network Administration	2.75	2.25	2.25	2.50	2.00	1.50	3.00	2.75	2.75	2.50	2.50
37	Software Testing	1.50	2.50	2.50	2.00	2.00	1.25	2.75	1.50	1.50	0.00	2.25
38	E-Commerce	1.25	1.00	1.25	2.00	1.75	1.25	1.25	1.25	1.00	0.00	0.50
	TOTAL	72	66	75	80	69	53	76	90	83	55	78
	PROGRAM OUTCOME ATTAINMENTS	1.88	1.74	1.96	2.11	1.80	1.39	1.99	2.38	2.20	1.45	2.06

Gap

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
PROGRAM OUTCOME TARGETS	2.00	1.84	2.06	2.22	1.86	1.44	2.08	2.49	2.32	1.56	2.17
PROGRAM OUTCOME ATTAINMENTS	1.88	1.74	1.96	2.11	1.80	1.39	1.99	2.38	2.20	1.45	2.06
GAPS	0.12	0.10	0.10	0.11	0.06	0.05	0.09	0.11	0.12	0.11	0.11