Bachelor of Computer Application Department:
Programme specific outcome (PSOs)

PSO	Programme outcomes
PSO-1	Analyze and compare alternative solutions to computing problems
PSO-2	Design, correctly implement and document solutions to significant computational problems
PSO-3	Apply algorithmic, mathematical and scientific reasoning to a variety of computational problems
PSO-4	Implement software systems that meet specified design and performance requirements
PSO-5	Work in the IT sector as system engineer, software tester, junior programmer, web developer, system administrator, software developer etc.

Course outcome of B.C.A

Course	COs	Course outcomes (COs)
BCA Sem-I Paper-I Computer Fundamentals	CO-1	Familiar with Fundamental concepts of computer
	CO-2	Get the knowledge about input and output devices and their working
	CO-3	Basic knowledge of Memory storage devices use with computer and computer networks.
	CO-4	Understand Network terminology
BCA Sem-I Paper-II 'C' PROGRAMMING	CO-1	Students will be able to develop logics which will help them to create programs , applications in C.
	CO-2	Understand complete knowledge of C language
	CO-3	Improve upon a solution to a problem
	CO-4	Design, develop and test programs written in 'C'
BCA Sem-I Paper-III STATISTICAL METHODS	CO-1	Learn about Sampling Methods.
	CO-2	- Know the basic idea of Permutations and Combinations, and Probability Concepts
	CO-3	Apply knowledge of mathematics, science, and engineering.
	CO-4	Evaluate the probabilities and conditional probabilities.
BCA Sem-I Paper-IV DISCRETE MATHEMATICS – I	CO-1	- Know the basic idea of Propositional calculus Students completing this course will be able to evaluate Boolean functions and simplify expressions using the properties of Boolean algebra.
	CO-2	Learn about Disjunctive , connective principal conjunctive normal forms
	CO-3	Students completing this course will be able to use tree and graph algorithms to solve problems.
	CO-4	Students completing this course will be able to evaluate Boolean functions and simplify expressions using the properties of Boolean algebra.
BCA Sem-I Paper-V	CO-1	Learn different types of operating systems along with concept of file systems and CPU scheduling algorithms used in operating system.

OPERATING SYSTEMS	CO-2	Provide students' knowledge of memory management and deadlock handling algorithms
	CO-3	Implement various algorithms required for management, scheduling, allocation and communication used in Operating System
	CO-4	Understand the difference between process & thread, issues of scheduling of user level processes / threads and their issues & use of locks
BCA Sem-I Paper-VI Office Automation	CO-1	Learn about Windows Operating system
	CO-2	Know the basics of Word , creating documents , formatting , toolbars , creating templates , mail merge
	CO-3	Understand the use of MS Power point for presentation

	CO-4	Apply knowledge of MS EXCEL, formatting , entering formula , chartcreation , functions in EXCEL
BCA Sem-II Paper-I PROGRAMMI NG IN 'C++	CO-1	- Describe OOPs concepts
	CO-2	Use the functions and pointers in C++ program .
	CO-3	Describe and use constructors and destructors .
	CO-4	Explain arrays and strings and create programs using them.
BCA Sem-II Paper -II SYSTEM ANALYSIS AND DESIGN	CO-1	Understand the steps in software development.
	CO-2	Know the tools for System Analysis and design.
	CO-3	Learn about Data collection
	CO-4	Describe structured tools and techniques of data analysis
BCA Sem-II Paper- III NUMERICAL METHODS	CO-1	solve Algebraic , Polynomial Equations, iterative , bisection , false position methods
	CO-2	Understand the concepts of Integration and differentiation
	CO-3	Apply various interpolation methods and finite difference concepts
	CO-4	Work numerically on the partial differential equations using different methods through the theory of finite differences
BCA Sem-II Paper -IV DISCRETE MATHEMATI CS – 2	CO-1	Know the Graph theory concepts like types of graph , representation etc.
	CO-2	Understand the concept of Set theory
	CO-3	Describe Functions , its types , counting concept like Permutations , combinations
	CO-4	Demonstrate different traversal methods for trees and graphs
BCA Sem-II Paper -V LINUX OPERATIN GSYSTEM	CO-1	Learn about Linux concepts such as Directory structures , file types , data files , Shell , commands
	CO-2	Learn about Vi editor
	CO-3	Learn about Sharing files with other users
	CO-4	Get knowledge of Managing Disk space
BCA Sem-II Paper -VI E COMMERCE	CO-1	Describe the concept of Electronic market , concepts , interorganizational value chains
	CO-2	Get knowledge of Business strategy in electronic age , its competitive advantages , technology ecommerce evaluation
	CO-3	Get knowledge of Business to business Electronic commerce
	CO-4	Learn about Business to consumer electronic commerce
BCA Sem-III Paper -I VISUAL BASIC PROGRAMM I NG	CO-1	Design, create, build, and debug Visual Basic applications.
	CO-2	Explore Visual Basic's Integrated Development Environment(IDE) .
	CO-3	Implement syntax rules in Visual Basic programs
	CO-4	Explain variables and data types used in program development
BCA Sem-III Paper -II DATA BASE MANAGEM ENT SYSTEM	CO-1	Gain a good understanding of the architecture and functioning of database management systems
	CO-2	Understand the use of structured query language and its syntax, transactions, database recovery and techniques for query optimization
	CO-3	Acquire a good understanding of database systems concepts and to be in a position to use and design databases for different applications

	CO-4	Draw various data models for Data Base and Write queries mathematically.
BCA Sem-III Paper -III DATA STRUCTURES	CO-1	Get the knowledge of Concept of data structure its applications in different areas .
	CO-2	To access how the choices of data structure & algorithm methods impact the performance of program.
	CO-3	To Solve problems based upon different data structure & also write programs.
	CO-4	Choose an appropriate data structure for a particular problem.
BCA Sem-III Paper -IV OPERATIONS	CO-1	Formulate a real-world problem as a mathematical programming model
	CO-2	Understand the theoretical workings of the simplex method for linear programming and perform iterations of it by hand

RESEARCH – I	CO-3	Understand the relationship between a linear program and its dual, including strong duality and complementary slackness	
	CO-4	Solve specialized linear programming problems like the transportation and assignment problems	
BCA Sem-III Paper - VWEB TECHNOLOGY – I	CO-1	Design and develop web pages	
	CO-2	Understand, analyze and apply the role of languages like HTML, DHTML,CSS, XML, JavaScript, in the workings of the web and webapplications	
	CO-3	Understand, analyze and create web pages using HTML, DHTML and Cascading Styles Sheets.	
	CO-4	Understand, analyze and build dynamic web pages using JavaScript and VB Script	
BCA Sem-III Paper -VI DIGITAL ELECTRONICS – I	CO-1	-Understand Number system and their conversions	
	CO-2	Explain the concepts like Binary arithmetic	
	CO-3	Get the knowledge of Logic gates	
	CO-4	-Understand the concept of Boolean algebra.	
BCA Sem-IV Paper -I SOFTWARE ENGINEERING – I	CO-1	Select and implement different software development process models.	
	CO-2	Extract and analyze software requirements specifications for different projects.	
	CO-3	Develop some basic level of software architecture/design.	
	CO-4	Define the basic concepts and importance of Software project management concepts like cost estimation, scheduling and reviewing the progress	
BCA Sem-IV Paper II SQL AND PL/SQL	CO-1	Get detail knowledge of SQL queries and its sublanguages.	
	CO-2	Understand the concept of PL/SQL programming .	
	CO-3	Learn about Built-in functions of SQL	
	CO-4	Understand about table View, Log &Triggers	
BCA Sem-IV Paper III THEORY OF COMPUTATION	CO-1	Learn the concept of Finite automation and regular expression	
	CO-2	Knowledge of concepts like Set , Context free grammar	
	CO-3	Understand the Push down automata , context free languages .	
	CO-4	To solve various problems of applying normal form techniques, push down automata and Turing Machines	
BCA Sem-IV Paper V WEB TECHNOLOGY – II	CO-1	Get the practical knowledge of concepts of adding VB Script to HTML	
	CO-2	Learn Java script	
	CO-3	Get knowledge of Web services	
	CO-4	To solve various problems of applying normal form techniques, push downautomata and Turing Machines	
BCA Sem-IV Paper VI DIGITAL ELECTRONICS – II	CO-1	Understand the concept of Combinational circuits	
	CO-2	Understand the concept of Sequential circuits , Flip-Flops , Counters	
	CO-3	Understand the concept of Assembly language programming	
	CO-4	Get the knowledge of Instruction set	
BCA Sem-V Paper I COMPUTER GRAPHICS – I	CO-1	Provide comprehensive introduction about computer graphics system, design algorithms and two dimensional transformations	
	CO-2	Make the students familiar with techniques of clipping, three dimensional graphics and three dimensional transformations	
	CO-3	Understand 2D transformation concept like translation , scaling , rotation .	

	CO-4	Write programs that demonstrate geometrical transformations
BCA Sem-V Paper II COMPILER CONSTRUCTION	CO-1	Learn about the concepts of Compilers and translators
	CO-2	Get knowledge of High level programming languages , Lexical and syntactic structure of a language
	CO-3	Learn the concept of code generation ,Parsing
	CO-4	Understand Finite state machine and purpose
BCA Sem-V Paper III	CO-1	Students will understand .NET Framework and describe some of the major enhancements to the new version of Visual Basic.

VB.NET	CO-2	Students will describe the basic structure of a Visual Basic.NET project anduse main features of the integrated development environment (IDE)	
	CO3	Students will create applications using Microsoft Windows Forms	
	CO-4	Students will create applications that use ADO. NET	
BCA Sem-V Paper IV SOFTWARE ENGINEERIN G – II	CO-1	Understand the concept of Software architecture	
	CO-2	Understand the basic concepts of Software testing , Strategies , approaches of testing	
	CO-3	Learn the concept of Risk management in software testing	
	CO-4	Use PHP's built in server to server static resources	
BCA Sem-V Paper VPHP – I	CO-1	Analyze PHP scripts and determine their behavior	
	CO-2	Design web pages with ability to retrieve and present data from a MySQL.	
	CO-3	Learn how to take a static websites and turn it into a dynamic website run from a database using PHP	
	CO-4	Use PHP's built in server to server static resources	
BCA Sem-V Paper VI DATA COMMUNIC ATION AND NETWORK – I	CO-1	Explain how communication works in computer networks and to understand the basic terminology of computer networks	
	CO-2	Explain the role of protocols in networking and to analyze the services and features of the various layers in the protocol stack.	
	CO-3	Understand design issues in network security and to understand security threats, security services and mechanisms to counter	
	CO-4	Connect internet to the system and knowledge of trouble	
BCA Sem-VI Paper I COMPUTER GRAPHICS – II	CO-1	Provide comprehensive introduction about computer graphics system, design algorithms and three dimensional transformations	
	CO-2	Get knowledge of 3D transformations , Geometric Transformations	
	CO-3	Learn computer animation design , functions , motion specifications	
	CO-4	Develop new kinds of graphics and animations	
BCA Sem-VI Paper II PROGRMMI NG IN JAVA	CO-1	Understand the principles and practice of object oriented analysis and design in the construction of robust, maintainable programs which satisfy theirrequirements.	
	CO-2	Implement, compile, test and run Java programs comprising more than one class, to address a particular software problem	
	CO-3	Demonstrate the principles of object oriented programming	
	CO-4	Demonstrate simple data structures like arrays in a Java program	
BCA Sem-VI Paper III ASP.NET	CO-1	Understand the ASP.Net framework and Page structure	
	CO-2	Design web application with variety of controls	
	CO-3	Access the data using inbuilt data access tools	
	CO-4	Students will be able to create database driven ASP.NET web applications and web services	
BCA Sem-VI Paper IV SOFTWARE TESTING	CO-1	Understand the fundamental concept in software testing	
	CO-2	Distinguish characteristics of structural testing methods	
	CO-3	Discuss about the functional and system testing methods	
	CO-4	Understand different types of testing levels	
BCA Sem-VI	CO-1	Learn how to use HTML forms	
	CO-2	Learn how to use PHP's built in server to serve static resources	

Paper V PHP – II	CO-3	Learn How to use cookies to store some data in the browser and pass it to next request
	CO-4	learn how to upload files to the website
BCA Sem-VI Paper VI DATA COMMUNICATION AND NETWORK – II	CO-1	Understand network communication using layered concept ,OSI and Internet model.
	CO-2	Understand various types of transmission media , network devices
	CO-3	Learn about different Protocols operations
	CO-4	Identify and describe development history of routing protocols

**Bachelor of Computer Application (BCA)Programme
specific outcomes:**

PSO	Programme outcomes
PSO-1	Analyze and compare alternative solutions to computing problems
PSO-2	Design, correctly implement and document solutions to significant computational problems
PSO-3	Apply algorithmic, mathematical and scientific reasoning to a variety of computational problems
PSO-4	Implement software systems that meet specified design and performance requirements
PSO-5	Work in the IT sector as system engineer, software tester, junior programmer, web developer, system administrator, software developer etc.

Course outcome of B.C.A

		Course outcomes (COs)	Programme outcomes (POs)				
			Domain specific (PSO)				
		Name of course: B.C.A Semester-I (Paper-I) Computer Fundamentals	1	2	3	4	5
CO-1		Familiar with Fundamental concepts of computer	M	M	L	H	H
CO-2		Get the knowledge about input and output devices and their working	M	M	L	H	H
CO-3		Basic knowledge of Memory storage devices use with computer and computer networks.	H	M	M	M	M
CO-4		Understand Network terminology	H	M	L	H	H
		Name of course: B.C.A Semester-I (Paper-II) 'C' PROGRAMMING					
CO-1		Students will be able to develop logics which will help them to create programs , applications in C.	L	L	M	M	H
CO-2		Understand complete knowledge of C language	L	L	H	H	H
CO-3		Improve upon a solution to a problem	M	M	M	H	H
CO-4		Design, develop and test programs written in 'C'	L	L	M	M	M
		Name of course: B.C.A Semester-I (Paper-III) STATISTICAL METHODS					
CO-1		Learn about Sampling Methods.	L	L	M	M	M
CO-2		- Know the basic idea of Permutations and Combinations, and Probability Concepts	L	L	H	M	M

CO-3	Apply knowledge of mathematics, science, and engineering.	M	M	M	H	H
CO-4	Evaluate the probabilities and conditional probabilities.	L	L	M	M	M
	Name of course: B.C.A Semester-I (Paper-IV) **DISCRETE MATHEMATICS – I**					
CO-1	- Know the basic idea of Propositional calculus Students completing this course will be able to evaluate Boolean functions and simplify expressions using the properties of Boolean algebra.	M	M	H	H	H
CO-2	Learn about Disjunctive , connective principal conjunctive normal forms	L	L	L	H	H
CO-3	Students completing this course will be able to use tree and graph algorithms to solve problems.	M	M	M	H	H
CO-4	Students completing this course will be able to evaluate Boolean functions and simplify expressions using the properties of Boolean algebra.	L	L	L	M	M
	Name of course: B.C.A Semester-I (Paper-V) **OPERATING SYSTEMS**					
CO-1	Learn different types of operating systems along with concept of file systems and CPU scheduling algorithms used in operating system.	M	M	M	H	H
CO-2	Provide students' knowledge of memory management and deadlock handling algorithms	M	M	H	H	H
CO-3	Implement various algorithms required for management, scheduling, allocation and communication used in Operating System	M	H	H	M	M
CO-4	Understand the difference between process & thread, issues of scheduling of user level processes / threads and their issues & use of locks	L	L	M	H	H
	Name of course: B.C.A Semester-I (Paper-VI) **Office Automation**					
CO-1	Learn about Windows Operating system	L	L	M	M	M
CO-2	Know the basics of Word , creating documents , formatting , toolbars , creating templates , mail merge	M	M	H	H	H
CO-3	Understand the use of MS Power point for presentation	L	M	H	M	M
CO-4	Apply knowledge of MS EXCEL, formatting , entering formula , chart creation , functions in EXCEL	M	L	L	H	H
	Name of course: B.C.A Semester-II(Paper-V) **PROGRAMMING IN 'C++**					
CO-1	- Describe OOPs concepts	L	L	M	M	M
CO-2	Use the functions and pointers in C++ program .	M	M	H	H	H
CO-3	Describe and use constructors and destructors .	M	M	M	H	H

| CO-4 | Explain arrays and strings and create programs using them. | M | M | M | H | H |

	Name of course: B.C.A Semester-II (Paper-II) SYSTEM ANALYSIS AND DESIGN					
CO-1	Understand the steps in software development.	L	L	L	M	M
CO-2	Know the tools for System Analysis and design.	L	L	L	M	M
CO-3	Learn about Data collection	L	L	M	H	M
CO-4	Describe structured tools and techniques of data analysis	M	M	M	H	H
	Name of course: B.C.A Semester-II (Paper-III) NUMERICAL METHODS					
CO-1	solve Algebraic , Polynomial Equations, iterative , bisection , false position methods	L	L	M	M	M
CO-2	Understand the concepts of Integration and differentiation	L	M	M	H	H
CO-3	Apply various interpolation methods and finite difference concepts	M	M	M	M	M
CO-4	Work numerically on the partial differential equations using different methods through the theory of finite differences	L	L	M	M	H
	Name of course: B.C.A Semester-II (Paper-IV) DISCRETE MATHEMATICS – 2					
CO-1	Know the Graph theory concepts like types of graph , representation etc.	L	L	M	H	H
CO-2	Understand the concept of Set theory	M	M	L	M	M
CO-3	Describe Functions , its types , counting concept like Permutations , combinations	L	L	M	M	H
CO-4	Demonstrate different traversal methods for trees and graphs	M	M	H	H	M
	Name of course: B.C.A Semester-II (Paper-V) LINUX OPERATING SYSTEM					
CO-1	Learn about Linux concepts such as Directory structures , file types , data files , Shell , commands	L	M	M	H	H
CO-2	Learn about Vi editor	M	M	H	H	H
CO-3	Learn about Sharing files with other users	L	L	M	M	H
CO-4	Get knowledge of Managing Disk space	M	M	L	H	H
	Name of course: B.C.A Semester-II (Paper-VI) E COMMERCE					
CO-1	Describe the concept of Electronic market , concepts , interorganizational value chains	L	L	M	M	H
CO-2	Get knowledge of Business strategy in electronic age , its competitive advantages , technology ecommerce evaluation	L	L	H	M	M
CO-3	Get knowledge of Business to business Electronic commerce	M	M	H	H	H
CO-4	Learn about Business to consumer electronic commerce	M	M	M	H	H
	Name of course: B.C.A Semester-III (Paper-I)					

	VISUAL BASIC PROGRAMMING					
CO-1	Design, create, build, and debug Visual Basic applications.	L	L	H	M	M
CO-2	Explore Visual Basic's Integrated Development Environment(IDE) .	M	M	M	H	H
CO-3	Implement syntax rules in Visual Basic programs	M	M	H	L	L
CO-4	Explain variables and data types used in program development	L	L	H	M	M
	Name of course: B.C.A Semester-III (Paper-II) DATA BASE MANAGEMENT SYSTEM					
CO-1	Gain a good understanding of the architecture and functioning of database management systems	L	L	H	M	M
CO-2	Understand the use of structured query language and its syntax, transactions, database recovery and techniques for query optimization	M	M	M	H	H
CO-3	Acquire a good understanding of database systems concepts and to be in a position to use anddesign databases for different applications	M	M	H	H	H
CO-4	Draw various data models for Data Base and Write queries mathematically.	M	M	H	L	L
	Name of course: B.C.A Semester-III (Paper-III) DATA STRUCTURES					
CO-1	Get the knowledge of Concept of data structure its applications in different areas .	M	M	M	H	H
CO-2	To access how the choices of data structure & algorithm methods impact the performance of program.	L	L	H	M	M
CO-3	To Solve problems based upon different data structure & also write programs.	M	M	H	L	L
CO-4	Choose an appropriate data structure for a particular problem.	M	M	M	H	H
	Name of course: B.C.A Semester-III (Paper-IV) OPERATIONS RESEARCH – I					
CO-1	Formulate a real-world problem as a mathematical programming model	M	M	H	L	L
CO-2	Understand the theoretical workings of the simplex method for linear programming and perform iterations of it by hand	H	M	M	L	H
CO-3	Understand the relationship between a linear program and its dual, including strong duality and complementary slackness	L	L	M	H	M
CO-4	Solve specialized linear programming problems like the transportation and assignment problems	M	M	M	M	H
	Name of course: B.C.A Semester-III (Paper-V) WEB TECHNOLOGY – I					
CO-1	Design and develop web pages	M	M	M	M	H
CO-2	Understand, analyze and apply the role of languages like HTML, DHTML,CSS, XML,	L	L	M	H	M

	JavaScript, in the workings of the web and web applications					
CO-3	Understand, analyze and create web pages using HTML, DHTML and Cascading Styles Sheets.	M	M	H	L	L
CO-4	Understand, analyze and build dynamic web pages using JavaScript and VB Script	H	M	M	L	H
	Name of course: B.C.A Semester-IV (Paper-I) **SOFTWARE ENGINEERING – I**					
CO-1	Select and implement different software development process models.	M	M	H	L	L
CO-2	Extract and analyze software requirements specifications for different projects.	M	M	H	H	M
CO-3	Develop some basic level of software architecture/design.	M	H	H	L	L
CO-4	Define the basic concepts and importance of Software project management concepts like cost estimation, scheduling and reviewing the progress	L	M	H	M	L
	Name of course: B.C.A Semester-IV (Paper-II) **SQL AND PL/SQL**					
CO-1	Get detail knowledge of SQL queries and its sublanguages.	M	M	H	L	L
CO-2	Understand the concept of PL/SQL programming .	L	M	H	M	L
CO-3	Learn about Built-in functions of SQL	M	M	H	H	L
CO-4	Understand about table View, Log &Triggers	M	M	H	L	L
	Name of course: B.C.A Semester-IV (Paper-III) **THEORY OF COMPUTATION**					
CO-1	Learn the concept of Finite automation and regular expression	M	H	H	M	L
CO-2	Knowledge of concepts like Set , Context free grammar	M	M	H	L	L
CO-3	Understand the Push down automata , context free languages .	M	M	H	L	L
CO-4	To solve various problems of applying normal form techniques, push down automata and Turing Machines	M	M	H	L	L
	Name of course: B.C.A Semester-IV (Paper-IV) **WEB TECHNOLOGY – II**					
CO-1	Get the practical knowledge of concepts of adding VB Script to HTML	M	L	M	L	L
CO-2	Learn Java script	M	M	H	L	L
CO-3	Get knowledge of Web services	M	M	H	L	L
CO-4	To solve various problems of applying normal form techniques, push down automata and Turing Machines	H	M	H	L	L
	Name of course: B.C.A Semester-IV (Paper-VI) **DIGITAL ELECTRONICS – II**					

| CO-1 | Understand the concept of Combinational circuits | M | M | H | L | L |

CO-2	Understand the concept of Sequential circuits , Flip-Flops , Counters	M	L	H	M	L
CO-3	Understand the concept of Assembly language programming	M	M	H	L	L
CO-4	Get the knowledge of Instruction set	L	M	H	L	L
	Name of course: B.C.A Semester-V (Paper-I) **COMPUTER GRAPHICS – I**					
CO-1	Provide comprehensive introduction about computer graphics system, design algorithms and two dimensional transformations	M	M	H	L	L
CO-2	Make the students familiar with techniques of clipping, three dimensional graphics and three dimensional transformations	M	M	H	L	L
CO-3	Understand 2D transformation concept like translation , scaling , rotation .	M	L	H	H	L
CO-4	Write programs that demonstrate geometricaltransformations	M	M	H	H	L
	Name of course: B.C.A Semester-V (Paper-II) **COMPILER CONSTRUCTION**					
CO-1	Learn about the concepts of Compilers and translators	M	M	M	L	L
CO-2	Get knowledge of High level programming languages , Lexical and syntactic structure of a language	H	M	H	L	L
CO-3	Learn the concept of code generation ,Parsing	M	M	H	L	L
CO-4	Understand Finite state machine and purpose	M	M	H	L	L
	Name of course: B.C.A Semester-V (Paper-III) **VB.NET**					
CO-1	Students will understand .NET Framework and describe some of the major enhancements to the new version of Visual Basic.	L	M	H	L	M
CO-2	Students will describe the basic structure of a Visual Basic.NET project and use main features of the integrated development environment (IDE)	M	M	H	L	L
CO3	Students will create applications using Microsoft Windows Forms	L	M	H	L	M
CO-4	Students will create applications that use ADO. NET	L	M	H	L	M
	Name of course: B.C.A Semester-V (Paper-IV) **SOFTWARE ENGINEERING – II**					
CO-1	Understand the concept of Software architecture	L	M	H	L	M
CO-2	Understand the basic concepts of Software testing , Strategies , approaches of testing	M	M	H	L	M
CO-3	Learn the concept of Risk management in software testing	L	M	H	L	M
CO-4	Use PHP's built in server to server static resources	M	M	M	L	M
	Name of course: B.C.A Semester-V (Paper-V) **PHP – I**					

CO-1	Analyze PHP scripts and determine their behavior	L	M	H	L	M
CO-2	Design web pages with ability to retrieve and present data from a MySQL.	M	M	H	L	M
CO-3	Learn how to take a static websites and turn it into a dynamic website run from a database using PHP	L	M	H	L	M
CO-4	Use PHP's built in server to server static resources	M	M	H	L	M
	Name of course: B.C.A Semester-V (Paper-VI) **DATA COMMUNICATION AND NETWORK – I**					
CO-1	Explain how communication works in computer networks and to understand the basic terminology of computer networks	L	M	H	L	M
CO-2	Explain the role of protocols in networking and to analyze the services and features of the various layers in the protocol stack.	L	M	H	L	M
CO-3	Understand design issues in network security and to understand security threats, security services and mechanisms to counter	L	M	H	L	M
CO-4	Connect internet to the system and knowledge of trouble	M	M	M	H	H
	Name of course: B.C.A Semester-VI (Paper-I) **COMPUTER GRAPHICS – II**					
CO-1	Provide comprehensive introduction about computer graphics system, design algorithms and three dimensional transformations	L	M	H	L	M
CO-2	Get knowledge of 3D transformations , Geometric Transformations	M	M	H	L	M
CO-3	Learn computer animation design , functions , motion specifications	L	M	H	L	M
CO-4	Develop new kinds of graphics and animations	L	H	H	M	M
	Name of course: B.C.A Semester-VI (Paper-II) **PROGRMMING IN JAVA**					
CO-1	Understand the principles and practice of object oriented analysis and design in the constructionof robust, maintainable programs which satisfy their requirements.	L	M	H	L	M
CO-2	Implement, compile, test and run Java programs comprising more than one class, to address a particular software problem	M	M	H	L	M
CO-3	Demonstrate the principles of object oriented programming	L	M	H	L	M
CO-4	Demonstrate simple data structures like arrays in a Java program	L	M	H	L	M
	Name of course: B.C.A Semester-VI (Paper-III)ASP.NET					
CO-1	Understand the ASP.Net framework and Page structure	M	M	H	L	M
CO-2	Design web application with variety of controls	H	M	H	L	M

| CO-3 | Access the data using inbuilt data access tools | L | M | M | L | M |

CO-4	Students will be able to create database driven ASP.NET web applications and web services	L	M	H	L	M
	Name of course: B.C.A Semester-VI (Paper-IV) SOFTWARE TESTING					
CO-1	Understand the fundamental concept in software testing	M	M	H	L	M
CO-2	Distinguish characteristics of structural testing methods	M	M	H	L	M
CO-3	Discuss about the functional and system testing methods	L	M	H	L	M
CO-4	Understand different types of testing levels	L	M	H	L	M
	Name of course: B.C.A Semester-VI (Paper-V) PHP – II					
CO-1	Learn how to use HTML forms	M	M	H	L	M
CO-2	Learn how to use PHP's built in server to serve static resources	M	M	H	L	M
CO-3	Learn How to use cookies to store some data in the browser and pass it to next request	L	L	H	L	M
CO-4	learn how to upload files to the website	L	M	L	L	M
	Name of course: B.C.A Semester-VI (Paper-VI) DATA COMMUNICATION AND NETWORK – II					
CO-1	Understand network communication using layered concept ,OSI and Internet model.	L	M	H	L	M
CO-2	Understand various types of transmission media , network devices	H	M	H	L	M
CO-3	Learn about different Protocols operations	M	M	H	L	M
CO-4	Identify and describe development history of routing protocols	L	M	H	L	M