PRESTIGE INSTITUTE OF MANAGEMENT & RESEARCH, GWALIOR

AN AUTONOMOUS INSTITUTE ACCREDITED WITH UGC NAAC GRADE 'A'

Internal PO Attainment BCA

			Step 1		Fill "Relevance" of each subject towards a PO out of 3	#Students above threshold	Difficulty Threshold (Passing Mark)			
			Step 2		Fill # Students scoring Average Marks	80%	Level	Hard	Medium	Easy
			Step 2		Score Level will automatically be calculated	70%	3	40%	50%	60%
			Step 3		PO attainment scores will be automatically calculated	60%	2	40%	50%	60%
			Step 4		**PO Attainment out of 3 Automatically Calculated**		1	40%	50%	60%
			Step 5		PO Attainment % Automatically Calculated		0	40%	50%	60%
Difficulty	Threshold	Students above Threshold	Score Level	Code	Cos/Subjects	Relevance (Co-relation factors on the scale of 0-3)				

						PO1: Acquire Knowledge of mathematical foundations, computer application theory and algorithm principles in the design and modelling of computer based system.	PO2: Understand to design, analyze and develop solutions and evaluate system components/processes to meet specific need for various domains.	PO3: Create, select, adapt and apply appropriate technologies and tools to a wide range of computational activities while understanding their limitations	PO4: Communicate effectively by being able to comprehend effective documentation and presentations.	PO5: Ability to engage in independent learning for continuous self-development as a computer application professional.
E	60%	95.0%	3	BCA 101 CO1	Enhance the learner's communication skills by giving adequate exposure in listening, speaking, reading and writing skills and the related sub-skills. Recognize and operate in various styles and registers in English.				3	2
E	60%	92.0%	3	BCA 101 CO2	Identify and repair the voids in his present vocabulary and pronunciation targeting those specific arrays of words, which create a barrier in his thought process.				3	2

E	60%	95.0%	3	BCA 101 CO3	Boost confidence in oral and interpersonal communication by reinforcing the basics of pronunciation specially focusing on interviews/ corporate meetings/ international business travels.				3	2
E	60%	95.0%	3	BCA 101 CO4	Achieve adequate linguistic skills to students compete well in international certification tests of English such as IELTS and TOEFL				3	2
H	40%	89.0%	3	BCA-102 CO1	Understand the concepts of logic gates, Different Digital Circuit. Explain different number systems and apply to create representation of numbers in computers	2	2	2		3
E	60%	57.0%	0	BCA-102 CO2	Describe the organization of computer and its design	2	2	2		3
H	40%	52.0%	0	BCA-102 CO3	Understand the basics of computer architecture	2	2	2		3
E	60%	61.0%	1	BCA-102 CO4	Examine the organization of various types of memories and I/O organization.	2	2	2		3
E	60%	75.0%	2	BCA-103 CO1	Understand the problem solving constructs and techniques through flowcharts. Understand concepts of tokens and predefined functions of C language	2	2	2		3

H	40%	74.0%	2	BCA-103 CO2	Understand and apply control statements and arrays to solve problems for Computers	2	2	2		3
E	60%	95.0%	3	BCA-103 CO3	Create modular program using functions and utilize various storage class	2	2	2		3
E	60%	64.0%	1	BCA-103 CO4	Understand and apply pre-processor directives, structures, and union in solving problems	2	2	2		3
E	60%	75.0%	2	BCA-104 CO1	Understand the key concept of successive differentiation and apply them to solve various Problems. Describe concept of Partial derivatives and its applications.	3	2	3	1	2
M	50%	67.0%	1	BCA-104 CO2	Analyse the concept of Envelope Evolutes, maxima, and minima for the function of two variables.	3	3	2	1	2
E	60%	77.0%	2	BCA-104 CO3	Understand to apply Beta and Gamma function to simplify integration.	2	2	2	1	2
M	50%	74.0%	2	BCA-104 CO4	Apply integration to calculate the area and volume of different types of curve.	3	2	2	1	2
E	60%	82.0%	3	BCA-105 CO1	To Apply Basics of C-Language like, Variables, Control Statements, Arrays, Structures and pointers in developing programs.	1	3	2		3

E	60%	95.0%	3	BCA-106 CO1	Proficiently use Microsoft Word to create, format, and edit various types of documents. and Effectively manipulate data in Microsoft Excel for tasks ranging from basic calculations to complex data analysis.	3	1	2		3
M	50%	88.0%	3	BCA-201 CO1	To use basic English Grammar in verbal and non-verbal communication. To understand and implement effective listening, reading, writing and Speaking Skills in day-to-day activities				3	2
E	60%	72.0%	2	BCA-201 CO2	Demonstrate the effective presentation skills				3	2
E	60%	97.0%	3	BCA-201 CO3	To use process of formal communication				3	2
E	60%	91.0%	3	BCA-201 CO4	To illustrate various formats used in business writing & the use of external aids involved in effective presentation				3	2

E	60%	98.0%	3	BCA-202 CO1	Understand and identify potential benefits of Object-oriented programming over other approaches. Understand and apply object- oriented programming concept like class & object to develop solutions of the problems.	3	3	2	1	3
E	60%	72.0%	2	BCA-202 CO2	Apply the concept of polymorphism by overloading the operator and functions in solving the real-world problem	2	2	3	1	3
E	60%	98.0%	3	BCA-202 CO3	Create the classes through the concept of inheritance to achieve modularity by reusing the exiting code	2	2	3	1	3
E	60%	79.0%	2	BCA-202 CO4	Implement data persistence through file handing.			1	2	3
E	60%	86.0%	3	BCA-203 CO1	Understand the basic concepts of data structure and particulate linear data structures and permitted operations. Understand and apply linked list data structure for solving problems	2	1	1		2
E	60%	84.0%	3	BCA-203 CO2	Articulate the tree data structures and permitted operations	3	1	1		2
E	60%	97.0%	3	BCA-203 CO3	Articulate the graph data structures and permitted operations	3	1	1		2

E	60%	76.0%	2	BCA-203 CO4	Implement Searching and Sorting algorithms & Understand the concepts of file organization Techniques	2	1	1		2
H	40%	88.0%	3	BCA-204 CO1	Understand the concept of differential equations of first order and first degree and its various methods. Analyse concept of linear differential equations of higher order with constant coefficients.	3	3	3	1	2
E	60%	93.0%	3	BCA-204 CO2	Analyse the formulation and classification of Partial Differential Equations.	3	3	3	1	2
E	60%	97.0%	3	BCA-204 CO3	Apply the methods to solve linear PDE of higher order and its application.	3	3	2	1	2
E	60%	97.0%	3	BCA-204 CO4	Understand the concept of Bessel and Legendre functions and derive recurrence relations.	3	2	2	1	2
E	60%	98.0%	3	BCA-205 CO1	Design and implement Object Oriented program in C++ by using various features like class, object, inheritance and polymorphism etc.	2	3	2	2	3
E	60%	84.0%	3	BCA-206 CO1	Apply various data structures to design efficient solutions of real-world problems.	1	3	2		3

E	60%	93.0%	3	BCA-301 CO1	Understand the Database concepts, DBMS software and supported architecture. Design and implement databases using concepts of data models	2	1	1	1	2
E	60%	88.0%	3	BCA-301 CO2	Analyze databases using normal forms for reducing redundancy.	2	1	1	1	2
E	60%	73.0%	2	BCA-301 CO3	Create SQL and relational algebra expressions to retrieve and manage database.	2	1	1	1	2
E	60%	57.0%	0	BCA-301 CO4	Implement transaction processing and concurrency control concepts.	2	1	1	1	2
E	60%	95.0%	3	BCA-302 CO1	Understand the basics of different display device and input device. Implement line drawing and fill algorithms	3	2	2	1	1
E	60%	61.0%	1	BCA-302 CO2	Implement different clipping algorithm	3	2	2	1	1
E	60%	45.0%	0	BCA-302 CO3	Understand and use various geometric transformation	2	2	1	1	1
E	60%	63.0%	1	BCA-302 CO4	Explain the concept of multimedia	1	1	1	2	2

E	60%	91.0%	3	BCA-303 CO1	To learn the fundamentals of OS, gain the knowledge on the basics of instruction execution, processor registers and how components of system communicate with each other. : To learn the concept of process and how OS manages processors and memory.	2	3	2	3	3
E	60%	95.0%	3	BCA-303 CO2	To gain knowledge about the mechanisms of OS for synchronizing processes and understanding various problems of synchronization.	2	3	3	3	2
E	60%	80.0%	3	BCA-303 CO3	To learn the concept of deadlocks and various algorithms for handling deadlocks.	2	2	2	3	3
E	60%	71.0%	2	BCA-303 CO4	To understand various memory management techniques implemented by OS.	2	2	3	3	3
E	60%	77.0%	2	BCA-304 CO1	Understand the key concept of proposition, set theory and its various types. Understand the concept of Relation and function and its various kinds	3	1	2		3
M	50%	89.0%	3	BCA-304 CO2	Apply Boolean expression representing circuits and analyse the different aspects of graphs.	3	1	3		3
E	60%	80.0%	3	BCA-304 CO3	Understand the concept of matrix to evaluate rank and nullity of matrix.	3	2	3	2	3

M	50%	79.0%	2	BCA-304 CO4	Evaluate Eigen value and Eigen vector and to solve simultaneous equation by matrix.	3	2	3	2	3
E	60%	95.0%	3	BCA-305 CO1	Design and implement Web application using VB.net	1	3	2		3
E	60%	93.0%	3	BCA-306 CO1	Write SQL statements for creating and manipulating databases using RDBMS.	1	2	2	1	3
E	60%	95.0%	3	BCA-307 CO1	Creating and manipulating various basic building blocks of Computer graphics.	2	3	2	1	3
E	60%	93.0%	3	BCA-308 CO1	Design and implement window application using VB. Net	1	3	2	2	2
E	60%	75.0%	2	BCA-401 CO1	Understand the use and key concept of HTML, CSS, JavaScript. Understand and apply features of JavaScript and Jquery for event handling	3	3	2	1	3
E	60%	100.0%	3	BCA-401 CO2	Apply basic features of PHP for creating dynamic webpages	2	2	3	1	3
E	60%	51.0%	0	BCA-401 CO3	Use control statement, array, regular expression of PHP in webpage creation.	2	2	3	1	3
E	60%	90.0%	3	BCA-401 CO4	Create webpages for database handling through MySQL		2	1	2	3

H	40%	73.0%	2	BCA-402 CO1	Explain the basics of java language and Apply OOPs concept in solving the real problem	3	3	2	1	3
M	50%	80.0%	3	BCA-402 CO2	Able to Use of package and collection frame work for solving the problem	2	2	2	2	2
E	60%	92.0%	3	BCA-402 CO3	To develop the robust and high performance system	1	2	3	2	3
M	50%	88.0%	3	BCA-402 CO4	Develop GUI and Event handling application	1	2	3	3	3
M	50%	100.0%	3	BCA-403 CO1	Explain Software development Life cycle models. Create SRS and asses the efforts required to develop software	2	2	2	3	3
E	60%	59.0%	0	BCA-403 CO2	Understand software design fundamentals	3	3	2	3	3
E	60%	98.0%	3	BCA-403 CO3	Design software by applying different techniques	3	3	3	3	3
E	60%	100.0%	3	BCA-403 CO4	Explain concepts of software measures, Software testing, reverse engineering, UML	3	3	2	3	3

M	50%	65.0%	1	BCA-404 CO1	Understand the concept of approximate numbers, errors in numbers, zeroes or roots of polynomial and/or transcendental equations, difference operators and statistical terms. Apply Iterative techniques to solve polynomial and/or transcendental equations and simultaneous linear equations	2	1	2	1	2
E	60%	71.0%	2	BCA-404 CO2	Apply mathematical relationships for given observations of the variable using Interpolation techniques.	2	1	1		2
E	60%	86.0%	3	BCA-404 CO3	Analyse statistical data using measures of central tendency, dispersion, skewness and Kurtosis.	2	2	2	1	2
E	60%	94.0%	3	BCA-404 CO4	Understand the concept of correlation and simple linear regression analysis for a set of data	3	2	1	1	2
M	50%	92.0%	3	BCA-405 CO1	Develop solutions for basic problems using various features of Python	2	3	3	2	3
E	60%	88.0%	3	BCA-406 CO1	Design and implement web application using HTML, CSS, JavaScript and PHP.	1	3	2	2	3
E	60%	78.0%	2	BCA-407 CO1	Design and implement Object oriented programs using various features of Java Programming language.	1	3	3	1	3

E	60%	92.0%	3	BCA-408 CO1	Design and implement web application for solving real world problems.	2	3	2	2	3
E	60%	82.0%	3	BCA-501 CO1	To understand and build web application using MVC model. To perform database operation in web application through JDBC	2	3	3	2	3
H	40%	92.0%	3	BCA-501 CO2	Apply servlet API to develop dynamic web application	2	3	3	2	3
E	60%	76.0%	2	BCA-501 CO3	Apply JSP API to develop dynamic web application	2	3	3	2	3
H	40%	80.0%	3	BCA-501 CO4	Use java beans in web application development	2	3	3	2	3
E	60%	78.0%	2	BCA-502 CO1	Define and understand basic working of computer network and its components. Apply and Understand the Analog and Digital data transmission and transmission impairments	2	3	1	2	2
M	50%	98.0%	3	BCA-502 CO2	Understand the basic concept of OSI and TCP reference model	2	3	2	3	3
E	60%	76.0%	2	BCA-502 CO3	Understand, define and analyse the basics of ISDN, ATM data link services and standard data link layer protocols	2	2	2	3	2

E	60%	51.0%	0	BCA-502 CO4	Understand, identify and adapt the basic concept of IEEE standards protocols and networking devices for communications.	2	2	3	3	3
M	50%	76.0%	2	BCA-503 CO1	Demonstrate fundamental understanding of the AI history and its foundations.Understand elements constituting problems and learn to solve it by various uninformed and informed (heuristics based) searching techniques	2	2	2		2
M	50%	100.0%	3	BCA-503 CO2	Understand different methods of knowledge representation and reasoning.	2	2	2		2
E	60%	76.0%	2	BCA-503 CO3	Be able to describe and apply the artificial neural network models and their learning algorithms in solving problems	2	2	2		2
E	60%	49.0%	0	BCA-503 CO4	CO4:Be able to describe different activation function, regularization techniques, Fuzzy Sets and Fuzzy Logic	2	2	2		2
E	60%	100.0%	3	BCA-504 CO1	Design and implement solutions of real world problems using suitable technology.	2	3	2	2	3
E	60%	84.0%	3	BCA-505 CO1	Design and implement MVC based web application using servlet, JSP and java beans.	1	3	2	1	3
E	60%	100.0%	3	BCA-506 CO1	Develop programs in Oracle using PL/SQL.	1	2	2	1	3

E	60%	57.0%	0	BCA-601 CO1	Understand basics of C # programming language. Implement solutions for problems in C #.	3	2	3	2	2
M	50%	80.0%	3	BCA-601 CO2	Design and implement web forms in Asp.net.	3	3	3	2	3
E	60%	90.0%	3	BCA-601 CO3	Design and implement web forms with validation in Asp.net	3	3	3	2	3
M	50%	92.0%	3	BCA-601 CO4	Create web forms for perfonning CURD operations on databases in Asp.net.	3	2	3	2	3
E	60%	80.0%	3	BCA-602 CO1	To understand Linux features and commands and to understand mobile OS	2	2	3	2	3
M	50%	92.0%	3	BCA-602 CO2	to understand architecture of android OS	2	2	3	2	3
E	60%	76.0%	2	BCA-602 CO3	to understand android framework and their components	1	2	3	3	3
E	60%	90.0%	3	BCA-602 CO4	To develop mobile app in android device	2	2	3	3	3
E	60%	76.0%	2	BCA-603 CO1	Understand the fundamental concepts of software testing. Design the test cases though different black box testing techniques	2	2	3	2	3
M	50%	78.0%	2	BCA-603 CO2	Design the test cases though different white box testing techniques	2	2	3	2	3

E	60%	76.0%	2	BCA-603 CO3	Understand and Appreciate the importance of different levels of testing	2	2	3	3	3
M	50%	94.0%	3	BCA-603 CO4	Carry out testing of software though automation testing tools	2	2	3	3	3
M	50%	66.0%	1	BCA-604 CO1	Understand the functionality of the various data mining and data-warehousing component. Appreciate the strengths and limitations of various data mining and data warehousing models.	2	2	2		1
M	50%	94.0%	3	BCA-604 CO2	Explain the analysing techniques on various data-mining primitives.	2	2	1		1
E	60%	92.0%	3	BCA-604 CO3	Characterize the kinds of patterns that can be discovered by association rule mining, classification and clustering.	3	3	2		2
M	50%	96.0%	3	BCA-604 CO4	Develop skill in selecting the appropriate data-mining algorithm for solving practical problems	2	2	3		2
E	60%	90.0%	3	BCA-605 CO1	Design and implement Web application using ASP.net	1	3	1	1	3
E	60%	94.0%	3	BCA-606 CO1	Design and implement android based mobile applications.	1	2	1	1	3
						211	**220**	**219**	**156**	**276**
					PO Attainment					

			100%	BCA 101 CO1	Enhance the learner's communication skills by giving adequate exposure in listening, speaking, reading and writing skills and the related sub-skills. Recognize and operate in various styles and registers in English.	0	0	0	3	2
			100%	BCA 101 CO2	Identify and repair the voids in his present vocabulary and pronunciation targeting those specific arrays of words, which create a barrier in his thought process.	0.0	0.0	0.0	3.0	2.0
			100%	BCA 101 CO3	Boost confidence in oral and interpersonal communication by reinforcing the basics of pronunciation specially focusing on interviews/ corporate meetings/ international business travels.	0.0	0.0	0.0	3.0	2.0
			100%	BCA 101 CO4	Achieve adequate linguistic skills to students compete well in international certification tests of English such as IELTS and TOEFL	0.0	0.0	0.0	3.0	2.0
			100%	BCA-102 CO1	Understand the concepts of logic gates, Different Digital Circuit. Explain different number systems and apply to create representation of numbers in computers	2.0	2.0	2.0	0.0	3.0

			0%	BCA-102 CO2	Describe the organization of computer and its design	0.0	0.0	0.0	0.0	0.0
			0%	BCA-102 CO3	Understand the basics of computer architecture	0.0	0.0	0.0	0.0	0.0
			33%	BCA-102 CO4	Examine the organization of various types of memories and I/O organization.	0.7	0.7	0.7	0.0	1.0
			67%	BCA-103 CO1	Understand the problem solving constructs and techniques through flowcharts. Understand concepts of tokens and predefined functions of C language	1.3	1.3	1.3	0.0	2.0
			67%	BCA-103 CO2	Understand and apply control statements and arrays to solve problems for Computers	1.3	1.3	1.3	0.0	2.0
			100%	BCA-103 CO3	Create modular program using functions and utilize various storage class	2.0	2.0	2.0	0.0	3.0
			33%	BCA-103 CO4	Understand and apply pre-processor directives, structures, and union in solving problems	0.7	0.7	0.7	0.0	1.0
			67%	BCA-104 CO1	Understand the key concept of successive differentiation and apply them to solve various Problems. Describe concept of Partial derivatives and its applications.	2.0	1.3	2.0	0.7	1.3

			33%	BCA-104 CO2	Analyse the concept of Envelope Evolutes, maxima, and minima for the function of two variables.	1.0	1.0	0.7	0.3	0.7
			67%	BCA-104 CO3	Understand to apply Beta and Gamma function to simplify integration.	1.3	1.3	1.3	0.7	1.3
			67%	BCA-104 CO4	Apply integration to calculate the area and volume of different types of curve.	2.0	1.3	1.3	0.7	1.3
			100%	BCA-105 CO1	To Apply Basics of C-Language like, Variables, Control Statements, Arrays, Structures and pointers in developing programs.	1.0	3.0	2.0	0.0	3.0
			100%	BCA-106 CO1	Proficiently use Microsoft Word to create, format, and edit various types of documents. and Effectively manipulate data in Microsoft Excel for tasks ranging from basic calculations to complex data analysis.	3.0	1.0	2.0	0.0	3.0
			100%	BCA-201 CO1	To use basic English Grammar in verbal and non-verbal communication. To understand and implement effective listening, reading, writing and Speaking Skills in day-to-day activities	0.0	0.0	0.0	3.0	2.0
			67%	BCA-201 CO2	Demonstrate the effective presentation skills	0.0	0.0	0.0	2.0	1.3

			100%	BCA-201 CO3	To use process of formal communication	0.0	0.0	0.0	3.0	2.0
			67%	BCA-201 CO4	To illustrate various formats used in business writing & the use of external aids involved in effective presentation	0.0	0.0	0.0	2.0	1.3
			100%	BCA-202 CO1	Understand and identify potential benefits of Object-oriented programming over other approaches. Understand and apply object- oriented programming concept like class & object to develop solutions of the problems.	0.0	0.0	0.0	3.0	2.0
			100%	BCA-202 CO2	Apply the concept of polymorphism by overloading the operator and functions in solving the real-world problem	0.0	0.0	0.0	3.0	2.0
			100%	BCA-202 CO3	Create the classes through the concept of inheritance to achieve modularity by reusing the exiting code	3.0	3.0	2.0	1.0	3.0
			67%	BCA-202 CO4	Implement data persistence through file handing.	1.3	1.3	2.0	0.7	2.0
			100%	BCA-203 CO1	Understand the basic concepts of data structure and particulate linear data structures and permitted operations. Understand and apply linked list data structure for solving problems	2.0	2.0	3.0	1.0	3.0

			67%	BCA-203 CO2	Articulate the tree data structures and permitted operations	0.0	0.0	0.7	1.3	2.0
			100%	BCA-203 CO3	Articulate the graph data structures and permitted operations	2.0	1.0	1.0	0.0	2.0
			100%	BCA-203 CO4	Implement Searching and Sorting algorithms & Understand the concepts of file organization Techniques	3.0	1.0	1.0	0.0	2.0
			100%	BCA-204 CO1	Understand the concept of differential equations of first order and first degree and its various methods. Analyse concept of linear differential equations of higher order with constant coefficients.	3.0	1.0	1.0	0.0	2.0
			67%	BCA-204 CO2	Analyse the formulation and classification of Partial Differential Equations.	1.3	0.7	0.7	0.0	1.3
			100%	BCA-204 CO3	Apply the methods to solve linear PDE of higher order and its application.	3.0	3.0	3.0	1.0	2.0
			100%	BCA-204 CO4	Understand the concept of Bessel and Legendre functions and derive recurrence relations.	3.0	3.0	3.0	1.0	2.0

			100%	BCA-205 CO1	Design and implement Object Oriented program in C++ by using various features like class, object, inheritance and polymorphism etc.	3.0	3.0	2.0	1.0	2.0
			100%	BCA-206 CO1	Apply various data structures to design efficient solutions of real-world problems.	3.0	2.0	2.0	1.0	2.0
			100%	BCA-301 CO1	Understand the Database concepts, DBMS software and supported architecture. Design and implement databases using concepts of data models	2.0	3.0	2.0	2.0	3.0
			100%	BCA-301 CO2	Analyze databases using normal forms for reducing redundancy.	1.0	3.0	2.0	0.0	3.0
			0%	BCA-301 CO3	Create SQL and relational algebra expressions to retrieve and manage database.	0.0	1.0	1.0	1.0	2.0
			0%	BCA-301 CO4	Implement transaction processing and concurrency control concepts.	0.0	1.0	1.0	1.0	2.0
			100%	BCA-302 CO1	Understand the basics of different display device and input device. Implement line drawing and fill algorithms	2.0	1.0	1.0	1.0	2.0
			100%	BCA-302 CO2	Implement different clipping algorithm	2.0	1.0	1.0	1.0	2.0

			67%	BCA-302 CO3	Understand and use various geometric transformation	1.3	0.7	0.7	0.7	1.3
			0%	BCA-302 CO4	Explain the concept of multimedia	0.0	0.0	0.0	0.0	0.0
			100%	BCA-303 CO1	To learn the fundamentals of OS, gain the knowledge on the basics of instruction execution, processor registers and how components of system communicate with each other. : To learn the concept of process and how OS manages processors and memory.	3.0	2.0	2.0	1.0	1.0
			33%	BCA-303 CO2	To gain knowledge about the mechanisms of OS for synchronizing processes and understanding various problems of synchronization.	1.0	0.7	0.7	0.3	0.3
			0%	BCA-303 CO3	To learn the concept of deadlocks and various algorithms for handling deadlocks.	0.0	0.0	0.0	0.0	0.0
			33%	BCA-303 CO4	To understand various memory management techniques implemented by OS.	0.3	0.3	0.3	0.7	0.7
			100%	BCA-304 CO1	Understand the key concept of proposition, set theory and its various types. Understand the concept of Relation and function and its various kinds	2.0	3.0	2.0	3.0	3.0

			100%	BCA-304 CO2	Apply Boolean expression representing circuits and analyse the different aspects of graphs.	2.0	3.0	3.0	3.0	2.0
			100%	BCA-304 CO3	Understand the concept of matrix to evaluate rank and nullity of matrix.	2.0	2.0	2.0	3.0	3.0
			67%	BCA-304 CO4	Evaluate Eigen value and Eigen vector and to solve simultaneous equation by matrix.	1.3	1.3	2.0	2.0	2.0
			67%	BCA-305 CO1	Design and implement Web application using VB.net	2.0	0.7	1.3	0.0	2.0
			100%	BCA-306 CO1	Write SQL statements for creating and manipulating databases using RDBMS.	3.0	1.0	3.0	0.0	3.0
			100%	BCA-307 CO1	Creating and manipulating various basic building blocks of Computer graphics.	3.0	2.0	3.0	2.0	3.0
			67%	BCA-308 CO1	Design and implement window application using VB. Net	2.0	1.3	2.0	1.3	2.0
			100%	BCA-401 CO1	Understand the use and key concept of HTML, CSS, JavaScript. Understand and apply features of JavaScript and Jquery for event handling	1.0	3.0	2.0	0.0	3.0
			100%	BCA-401 CO2	Apply basic features of PHP for creating dynamic webpages	1.0	2.0	2.0	1.0	3.0

			100%	BCA-401 CO3	Use control statement, array, regular expression of PHP in webpage creation.	2.0	3.0	2.0	1.0	3.0
			100%	BCA-401 CO4	Create webpages for database handling through MySQL	1.0	3.0	2.0	2.0	2.0
			67%	BCA-402 CO1	Explain the basics of java language and Apply OOPs concept in solving the real problem	2.0	2.0	1.3	0.7	2.0
			100%	BCA-402 CO2	Able to Use of package and collection frame work for solving the problem	2.0	2.0	3.0	1.0	3.0
			0%	BCA-402 CO3	To develop the robust and high performance system	0.0	0.0	0.0	0.0	0.0
			100%	BCA-402 CO4	Develop GUI and Event handling application	0.0	2.0	1.0	2.0	3.0
			67%	BCA-403 CO1	Explain Software development Life cycle models. Create SRS and asses the efforts required to develop software	2.0	2.0	1.3	0.7	2.0
			100%	BCA-403 CO2	Understand software design fundamentals	2.0	2.0	2.0	2.0	2.0
			100%	BCA-403 CO3	Design software by applying different techniques	1.0	2.0	3.0	2.0	3.0
			100%	BCA-403 CO4	Explain concepts of software measures, Software testing, reverse engineering, UML	1.0	2.0	3.0	3.0	3.0

			100%	BCA-404 CO1	Understand the concept of approximate numbers, errors in numbers, zeroes or roots of polynomial and/or transcendental equations, difference operators and statistical terms. Apply Iterative techniques to solve polynomial and/or transcendental equations and simultaneous linear equations	2.0	2.0	2.0	3.0	3.0
			0%	BCA-404 CO2	Apply mathematical relationships for given observations of the variable using Interpolation techniques.	0.0	0.0	0.0	0.0	0.0
			100%	BCA-404 CO3	Analyse statistical data using measures of central tendency, dispersion, skewness and Kurtosis.	3.0	3.0	3.0	3.0	3.0
			100%	BCA-404 CO4	Understand the concept of correlation and simple linear regression analysis for a set of data	3.0	3.0	2.0	3.0	3.0
			33%	BCA-405 CO1	Develop solutions for basic problems using various features of Python	0.7	0.3	0.7	0.3	0.7
			67%	BCA-406 CO1	Design and implement web application using HTML, CSS, JavaScript and PHP.	1.3	0.7	0.7	0.0	1.3
			100%	BCA-407 CO1	Design and implement Object oriented programs using various features of Java Programming language.	2.0	2.0	2.0	1.0	2.0

			100%	BCA-408 CO1	Design and implement web application for solving real world problems.	3.0	2.0	1.0	1.0	2.0
			100%	BCA-501 CO1	To understand and build web application using MVC model. To perform database operation in web application through JDBC	2.0	3.0	3.0	2.0	3.0
			100%	BCA-501 CO2	Apply servlet API to develop dynamic web application	1.0	3.0	2.0	2.0	3.0
			67%	BCA-501 CO3	Apply JSP API to develop dynamic web application	0.7	2.0	2.0	0.7	2.0
			100%	BCA-501 CO4	Use java beans in web application development	2.0	3.0	2.0	2.0	3.0
			100%	BCA-502 CO1	Define and understand basic working of computer network and its components. Apply and Understand the Analog and Digital data transmission and transmission impairments	2.0	3.0	3.0	2.0	3.0
			100%	BCA-502 CO2	Understand the basic concept of OSI and TCP reference model	2.0	3.0	3.0	2.0	3.0
			67%	BCA-502 CO3	Understand, define and analyse the basics of ISDN, ATM data link services and standard data link layer protocols	1.3	2.0	2.0	1.3	2.0

			100%	BCA-502 CO4	Understand, identify and adapt the basic concept of IEEE standards protocols and networking devices for communications.	2.0	3.0	3.0	2.0	3.0
			67%	BCA-503 CO1	Demonstrate fundamental understanding of the AI history and its foundations.Understand elements constituting problems and learn to solve it by various uninformed and informed (heuristics based) searching techniques	1.3	2.0	0.7	1.3	1.3
			100%	BCA-503 CO2	Understand different methods of knowledge representation and reasoning.	2.0	3.0	2.0	3.0	3.0
			67%	BCA-503 CO3	Be able to describe and apply the artificial neural network models and their learning algorithms in solving problems	1.3	1.3	1.3	2.0	1.3
			0%	BCA-503 CO4	CO4:Be able to describe different activation function, regularization techniques, Fuzzy Sets and Fuzzy Logic	0.0	0.0	0.0	0.0	0.0
			67%	BCA-504 CO1	Design and implement solutions of real world problems using suitable technology.	1.3	1.3	1.3	0.0	1.3
			100%	BCA-505 CO1	Design and implement MVC based web application using servlet, JSP and java beans.	2.0	2.0	2.0	0.0	2.0
			67%	BCA-506 CO1	Develop programs in Oracle using PL/SQL.	1.3	1.3	1.3	0.0	1.3

			0%	BCA-601 CO1	Understand basics of C # programming language. Implement solutions for problems in C #.	0.0	0.0	0.0	0.0	0.0
			100%	BCA-601 CO2	Design and implement web forms in Asp.net.	2.0	3.0	2.0	2.0	3.0
			100%	BCA-601 CO3	Design and implement web forms with validation in Asp.net	1.0	3.0	2.0	1.0	3.0
			100%	BCA-601 CO4	Create web forms for perfonning CURD operations on databases in Asp.net.	1.0	2.0	2.0	1.0	3.0
			0%	BCA-602 CO1	To understand Linux features and commands and to understand mobile OS	0.0	0.0	0.0	0.0	0.0
			100%	BCA-602 CO2	to understand architecture of android OS	3.0	3.0	3.0	2.0	3.0
			100%	BCA-602 CO3	to understand android framework and their components	3.0	3.0	3.0	2.0	3.0
			100%	BCA-602 CO4	To develop mobile app in android device	3.0	2.0	3.0	2.0	3.0
			100%	BCA-603 CO1	Understand the fundamental concepts of software testing. Design the test cases though different black box testing techniques	2.0	2.0	3.0	2.0	3.0
			100%	BCA-603 CO2	Design the test cases though different white box testing techniques	2.0	2.0	3.0	2.0	3.0

			67%	BCA-603 CO3	Understand and Appreciate the importance of different levels of testing	0.7	1.3	2.0	2.0	2.0
			100%	BCA-603 CO4	Carry out testing of software though automation testing tools	2.0	2.0	3.0	3.0	3.0
			67%	BCA-604 CO1	Understand the functionality of the various data mining and data-warehousing component. Appreciate the strengths and limitations of various data mining and data warehousing models.	1.3	1.3	2.0	1.3	2.0
			67%	BCA-604 CO2	Explain the analysing techniques on various data-mining primitives.	1.3	1.3	2.0	1.3	2.0
			67%	BCA-604 CO3	Characterize the kinds of patterns that can be discovered by association rule mining, classification and clustering.	1.3	1.3	2.0	2.0	2.0
			100%	BCA-604 CO4	Develop skill in selecting the appropriate data-mining algorithm for solving practical problems	2.0	2.0	3.0	3.0	3.0
			33%	BCA-605 CO1	Design and implement Web application using ASP.net	0.7	0.7	0.7	0.0	0.3
			100%	BCA-606 CO1	Design and implement android based mobile applications.	2.0	2.0	1.0	0.0	1.0
					SUM	**156.7**	**169.0**	**168.0**	**135.0**	**219.7**
					PO Attainment %	74%	77%	77%	87%	80%
					PO Attainment out of 3	**2.2**	**2.3**	**2.3**	**2.6**	**2.4**