2.6

STUDENT PERFORMANCE AND LEARNING OUTCOME

NEW HORIZON
COLLEGE
MARATHAHALLI
Permanently Affiliated to Bengaluru North University,
Recognized by the Govt. of Karnataka Recognized under section 2 (f) of the UGC Act, 1956
Accredited by NAAC with 'A' Grade

Bachelor of Commerce (B.Com)

Program Outcomes (POs)

And

Program Specific Outcomes (PSOs)

The B.Com degree program at New Horizon College initiates the students into the principles and practices of advanced accounting and the dynamics of management, marketing, banking, auditing, company law, secretarial practice and allied disciplines. This degree is designed to develop excellent analytical skills, which are valuable to decision-making in the areas of business, finances, banking, taxes and the economy at large. Extremely relevant value added programs are also intricately designed in the curriculum to supplement technological requirement and give a professional edge.

The department is committed to providing the best of facilities to the students in terms of knowledge dissemination, infrastructure, placements and exposure to recent developments in the world of commerce. The dedicated team of faculty continuously strives to strengthen the basics of accounting and finance which is crucial to all decision making at the micro and macro level. Students are urged to enhance their observation capabilities, make the best use of the facilities provided in the department and shine on to become powerful and responsible policy makers, entrepreneurs and lead the Indian economy to the highest level.

Vision

To impart student centric education in the field of commerce by way of continuous improvement in teaching and learning process.

Mission

To empower students with a blend of curricular, co-curricular and value added activities in order to make a mark in their professional life.

Principal
NEW HORIZON COLLEGE
Ring Road, Bellandur Post,
Bangalore - 560 103.

Objectives

Improving accounting skills and developing business acumen through quality teaching-learning process, mentoring, and counseling of students.

Duration

B. Com degree is extended over a period of three academic years, with each academic year comprising of two semesters

Program Outcomes for B.Com.

PO1	Domain Knowledge	To gain knowledge and application skills in the domain of Accounts, Finance and commerce.
PO2	Career opportunity	To prepare the students to pursue their career in field of Accounting, Taxation, Auditing, Financial analysis, stock market and international finance.
PO3	Foundation for professional course	To provide good foundation to the students who plan to pursue professional courses.
PO4	Problem solving skills	To develop with managerial and problem solving skills which enable them to face real life business problems.
PO5	Professional Ethics	To inculcate the value system and professional ethics.
PO6	Personality development	To improve their interpersonal skills and operate effectively in multicultural and diverse environments.
PO7	Entrepreneurship skills	To inculcate the qualities and develop the abilities to be possessed by a successful entrepreneur to manage their own business effectively.

Program Specific Outcomes(PSO)

PSO1	To build a strong foundation in different areas of commerce and to cater manpower need in the field of accounting, finance, taxation, banking, auditing and management.
PSO2	To equip students with problem solving skill, managerial skill leadership qualities which help students to work in diverse environment with professionalism and to develop entrepreneurship.

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Bachelor of Business Administration (B.B.A)

Program Outcomes (POs)

And

Program Specific Outcomes (PSOs)

Program Outcomes for B.B.A.

PO1	Become knowledgeable in the subject of management
PO2	Gain analytical skills and develop solution in the area of business management
PO3	Apply technical and professional skills in conducting investigation and solving complex business problems
PO4	Adapt to business environment for sustaining in competitive world
PO5	Practice professional ethics contributing to social responsibility towards the society
PO6	To enhance communication skills between individual and team to achieve common goals.
PO7	Application of knowledge to attain long term attain prospects

Program Specific Outcomes(PSO)

PSO1	Ability to analyze and develop solutions to various business problems by applying managerial knowledge for effective decision making.
PSO2	Develop strong competency to sustain in competitive environment

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BCA

Program Outcomes (PO)

PO1: Computational information: Appreciate and apply mathematical organization, computing, and domain information for the conceptualization of computing models from clear harms.
PO2: Difficulty Analysis: Talent to classify, significantly evaluate and prepare complex computing problems using fundamentals of computer knowledge and request domains.
PO3: Drawing / Improvement of Solutions: Facility to transform composite production scenarios and present-day issues into problems, explore, recognize, and propose included solutions using rising technologies.
PO5: Current Implement Procedure: Skill to select recent computing tools, skills, and techniques compulsory for original software solutions.
PO6: Proficient Principles: Facility to apply and give expert principles and cyber systems in a universal monetary situation.

Program Specific Outcomes (PO)

PSO1: An ability to enhance the application of knowledge of theory subjects in diverse fields.
PSO2: Develop language proficiency to handle corporate communication demands

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BCA

Program Outcomes (PO)

PO1: Computational information: Appreciate and apply mathematical organization, computing, and domain information for the conceptualization of computing models from clear harms.
PO2: Difficulty Analysis: Talent to classify, significantly evaluate and prepare complex computing problems using fundamentals of computer knowledge and request domains.
PO3: Drawing / Improvement of Solutions: Facility to transform composite production scenarios and present-day issues into problems, explore, recognize, and propose included solutions using rising technologies.
PO5: Current Implement Procedure: Skill to select recent computing tools, skills, and techniques compulsory for original software solutions.
PO6: Proficient Principles: Facility to apply and give expert principles and cyber systems in a universal monetary situation.

SEMESTER -I (NEP)

Kannada

• Understand their social and personal responsibility from a novel by eminent writer
• Communicate effectively in oral and written Kannada communication and develop better comprehension skills .
• Students will be able to create awareness of societal issues by doing skits, beedhi nataka role play etc among other citizens
• Inculcate moral values and ethics as a member and leader in the team.
• Can be a creative writer, innovative thinker, good narrator, critic etc according to their choice.

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	69/69	100%	3
External	>= 25	65%	58/61	95.08%	3

Additional English

At the end of the course the student will be able to

• Better literary and linguistic skills
• Enhance creativity and communicative skills
• The ability to understand different cultural contexts through literature
• Comprehend pieces of literature related to war, peace, sports, travel adventure, art and culture.
• Improvise the language skills and practice in the areas of remedial grammar, reading comprehension, summarizing and paragraph writing
• Develop strong competency to sustain in competitive environment

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	-	-	-	1	3	3
CO2	-	-	-	1	3	3
CO3	-	-	-	1	3	3
CO4	-	-	-	1	3	3
CO5	-	-	-	1	3	3
Average	-	-	-	1	3	3

Calculation of CO Attainment

Exam	Target Set		No. of students scored set target	Attainment %	Attainment level
Internal	>=15	90%	15/15	100%	3
External	>=25	65%	15/15	100%	3

Course Attainment

20% of Internal Attainment Level + 80% External Attainment level
0.2 X 3 =0.6 + 0.8 X 3 = 2.4 = 3

Course Code: CAC01

Fundamentals of Computers

Course Outcomes (COs):

• Introduction to computers, classification of computers, anatomy of computer, constituents and architecture, microcontrollers
• Operating systems, functions of operating systems, classification of operating systems, kernel, shell, basics of Unix, shell programming, booting. Databases, why databases are used, users, SQL, data types in SQL, introduction of queries - select, alter, update, delete, truncate, using where, and or in not.
• Internet basics, features, applications, services, internet service providers, domain name system, browsing, email, searching.
• Web Programming basics, introduction of HTML and CSS programming
• Introduction of computers, classification of computers, anatomy of computer, constituents and architecture, microcontrollers

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	135/135	100%	3
External	>= 25	65%	125/125	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: CAC01P

Information Technology Lab

• Identification of the peripherals of a computer, components in a CPU and their functions
• Assembling and disassembling the system hardware components of personal computer.
• Basic Computer Hardware Trouble shooting.
• LAN and Wi-Fi Basics.
• Operating System Installation – Windows OS, UNIX/LINUX, Dual Booting.

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	135/135	100%	3
External	>= 25	65%	133/133	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: CAC02

Programming in C

Course Outcomes (COs):

After completing this course satisfactorily, a student will be able to:

• Confidently operate Desktop Computers to carry out computational tasks
• Understand working of Hardware and Software and the importance of operating systems
• Understand programming languages, number systems, peripheral devices, networking, multimedia and internet concepts
• Read, understand, and trace the execution of programs written in C language
• Write the C code for a given problem
• Perform input and output operations using programs in C
• Write programs that perform operations on array

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	135/135	100%	3
External	>= 25	65%	121/122	99.18%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: CAC02P

C Programming Lab

• Program to read radius of a circle and to find area and circumference.
• Program to read three numbers and find the biggest of three.
• Program to demonstrate library functions in math's.
• Program to check for prime.
• Program to generate n prime.

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	135/135	100%	3
External	>= 25	65%	122/122	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: CAC03(a)

Mathematical Foundation

Course Outcomes (COs):

• Study and solve problems related to connectives, predicates, and quantifiers under different situations. • Develop basic knowledge of matrices and to solve equations using Cramer's rule.
• Know the concept of Eigen values.
• To develop the knowledge about derivatives and know various applications of differentiation.
• Understand the basic concepts of Mathematical reasoning, set and functions

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	82/82	100%	3
External	>= 25	65%	69/72	95.83%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: CAC03(b)

Accountancy

Course Outcomes (COs):

• Study and understand Accounting, systems of Book, Branches of accounting advantage and limitations • Know the concept of accounting, financial accounting process and Journalization
• Maintenance different account book and reconciliations
• Preparations of different bills, and trial balance.
• Understand the basic concepts of Mathematical reasoning, set and functions

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	53/53	100%	3
External	>= 25	65%	42/43	97.67%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Digital Fluency (1.4)

At the end of the course the student will be able to

• Demonstrate proficiency using digital tools
• Technological concepts and methods within the context of learning experiences
• Use digital media and environments to communicate effectively
• Use digital tools to demonstrate learning or create original ideas
• Use digital media to acquire knowledge or skill

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	135/135	100%	3
External	>= 25	65%	127/127	100%	3

SEMESTER -II

Course Code: CAC04

Data Structures using C.

Course Outcomes (COs)

After completing this course satisfactorily, a student will be able to

• Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms
• Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs
• Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs
• Demonstrate different methods for traversing trees
• Compare alternative implementations of data structures with respect to performance
• Describe the concept of recursion, give examples of its use
• Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	134/134	100%	3
External	>= 25	65%	103/105	98.10%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: CAC04P

Data Structures Lab

• Program to find GCD using recursive function.
• Program to display Pascal Triangle using binomial function.
• Program to generate n Fibonacci numbers using recursive function.
• Program to implement Towers of Hanoi.
• Program to implement dynamic array, find smallest and largest element of the array.

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	134/134	100%	3
External	>= 25	65%	115/115	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: CAC05

Object Oriented Programming with JAVA

Course Outcomes (COs):

After completing this course satisfactorily, a student will be able to:

• Understand the features of Java and the architecture of JVM
• Write, compile, and execute Java programs that may include basic data types and control flow constructs and how type casting is done
• Identify classes, objects, members of a class and relationships among them needed for a specific problem and demonstrate the concepts of polymorphism and inheritance
• The students will be able to demonstrate programs based on interfaces and threads and explain the benefits of JAVA's Exceptional handling mechanism compared to other Programming Language
• Write, compile, execute Java programs that include GUIs and event driven programming and also programs based on files

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	134/134	100%	3
External	>= 25	65%	112/114	95.58%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: CAC05P

JAVA Lab

Course Outcomes (COs):

After completing this course satisfactorily, a student will be able to:

• Implement Object Oriented programming concept using basic syntaxes of control Structures
• Identify classes, objects, members of a class and the relationships among them needed for a finding the solution to specific problem
• Demonstrates how to achieve reusability using inheritance
• Demonstrate understanding and use of interfaces, packages, different exception handling mechanisms and concept of multithreading for robust faster and efficient application development.
• Identify and describe common user interface components to design GUI in Java using Applet & AWT along with response to events

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	134/134	100%	3
External	>= 25	65%	117/117	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: CAC06

Discrete Mathematical Structures

Course Outcomes (COs):

After completing this course satisfactorily, a student will be able to:

• To understand the basic concepts of Mathematical reasoning, set and functions
. • To understand various counting techniques and principle of inclusion and exclusions.
• Understand the concepts of various types of relations, partial ordering and
• equivalence relations.
• Apply the concepts of generating functions to solve the recurrence relations
. • Familiarize the fundamental concepts of graph theory and shortest path algorithm

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	134/134	100%	3
External	>= 25	65%	108/113	95.58%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

SEMESTER-III (CBCS)

Course Code: BCA301T

Kannada

At the end of the course the student will be able to

• Understand their social and personal responsibility from a novel by eminent writer
• Communicate effectively in oral and written Kannada communication and develop better comprehension skills .
• Students will be able to create awareness of societal issues by doing skits, nataka role play etc among other citizens
• Inculcate moral values and ethics as a member and leader in the team.
• Can be a creative writer, innovative thinker, good narrator, critic etc. according to their choice.

Mapping of C O and PO :

CO SL NO.	PO1	PO 2	PO3	PO4	PO5	PO6
CO1	1	-	-	2	3	3
CO2	-	-	-	-	3	3
CO3	-	-	-	2	3	3
CO4	-	-	-	2	3	3
CO5	-	-	-	2	3	3
Average	1	-	-	2	3	3

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	61/61	100%	3
External	>= 25	65%	59/59	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA302T

ENGLISH

At the end of the course the student will be able to

• Awareness of issues of contemporary relevance through exposure to literature.
• Understanding pieces of literature related to mythology, patriotism, sports, humor and modern society.
• To comprehend the text and revere human values
• To express views and ideas using punctuations and cohesive devices.
• Identify and apply communication abilities to face corporate challenges.

Mapping of CO and PO

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	-	-	-	2	3	3	3
CO2	-	-	-	2	3	3	3
CO3	-	-	-	2	3	3	3
CO4	-	-	-	2	3	3	3
CO5	-	-	-	2	3	3	3
Average	**-**	**-**	**-**	**2**	**3**	**3**	**3**

Exam	Target Set		No. of students scored set target	Attainment %	Attainment level
Internal	>=15		121/121	100%	3
External	>=25		114/116	98%	3

20% of Internal Attainment Level + 80% External Attainment level
0.2 X 3 =0.6 + 0.8 X 3 = **2**.4 = 3

Course Code: BCA303T

OBJECT ORIENTED PROGRAMMING USING C++

• Describe OOPs concepts.
• Use functions and pointers in your C++ program
• Understand tokens, expressions, and control structures
• Explain arrays and strings and create programs using them

• Understand and employ file management.

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	121/121	100%	3
External	>= 25	65%	111/111	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA304T

ACCOUNTING AND FINANCIAL MANAGEMENT

• Identify and apply appropriate management techniques for managing business
• Have a conceptual knowledge about the planning and decision making
• Apply the concept of organizing for the effective functioning of a management
• Evaluate leadership style to anticipate the consequences of each leadership style
• Demonstrate the techniques for controlling and coordination

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	121/121	100%	3
External	>= 25	65%	109/109	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA305T

OPERATING SYSTEMS

• know basic components of an operating system.
• comprehend how an operating system virtualized CPU and memory.
• discuss various scheduling and swapping policies
• learn basic concurrent programming in C and assembly code
• explain how a simple file system organizes data in the hard disk

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	121/121	100%	3
External	>= 25	65%	101/102	99%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA303P

C++ PROGRAMMING LAB

• Understand the basic terminology used in computer programming.
• Write, compile and debug programs in Language
. • Create programs involving decision structures, loops, strings and functions.
• Design programs involving structures and pointers.

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	121/121	100%	3
External	>= 25	65%	109/109	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA304

ACCOUNTING PACKAGE LAB

• Understand basic concepts of accounting.
• Knowledge regarding how to create ledgers, journals, and balance sheet.
• To create programs in COBOL.
• Knowledge about different type of files and file programs

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	121/121	100%	3
External	>= 25	65%	107/107	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

SEMESTER -IV

Course Code: BCA401T

Kannada

• Understand their social and personal responsibility from effective novel by eminent writer
• Students will be able to comprehend letters for effective communication
• Students will be able to create awareness program by small skit, or role play etc among other citizens
• Inculcate moral values and ethics as a member and leader in the team
• Can be a creative writer, innovative thinker, good narrator, critic etc according to their choice.

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	61/61	100%	3
External	>= 25	65%	61/61	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA402T

ENGLISH

• Better literary and linguistic skills
• Enhance creativity and communicative skills
• The ability to understand different cultural contexts through literature
• Comprehend pieces of literature related to war, peace, sports, travel adventure, art and culture
• Improvise the language skills and practice in the areas of remedial grammar, reading comprehension, summarizing and paragraph writing

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	121/121	100%	3
External	>= 25	65%	121/121	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA403T

VISUAL PROGRAMMING

Design, create, build, and debug Visual Basic applications.
• Explore Visual Basic 's Integrated Development Environment (IDE).
• Implement syntax rules in Visual Basic programs.
• Explain variables and data types used in program development.
• Apply arithmetic operations for displaying numeric output

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	121/121	100%	3
External	>= 25	65%	121/121	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

VISUAL PROGRAMMING(Lab)

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	121/121	100%	3
External	>= 25	65%	121/121	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA404T

UNIX PROGRAMMING

• Understand the basic concepts of UNIX Architecture, File system and basic commands
• Understand the basic file system commands, concepts of Shell programming
• Understand the concepts UNIX API's and process control
• Understand the concepts of process accounting, User identification and different IPC mechanisms.
• Understand signal handling mechanism, daemon characteristics, coding rules and error logging

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	121/121	100%	3
External	>= 25	65%	121/121	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

UNIX PROGRAMMING(Lab)

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	121/121	100%	3
External	>= 25	65%	121/121	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA405T

OPERATIONS RESEARCH

• Formulate a real-world problem as a mathematical programming model
• Understand the theoretical workings of the simplex method for linear programming and perform iterations of it by hand
• Understand the relationship between a linear program and its dual, including strong duality and complementary slackness
• Solve specialized linear programming problems like the transportation and assignment problem

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	121/121	100%	3
External	>= 25	65%	121/121	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

SEMESTER – V

Course Code: BCA501T

DATA COMMUNICATIONS AND NETWORKS

• Explain & design the various reference models and networks
• Identify the different types of network devices and Multiple Access Protocols
• Use various routing mechanisms for finding shortest path in the network
• Use IP addressing Scheme and to interconnect various networks
• Explain and use various application layer protocols: HTTP, DNS, and SMTP,FTP etc

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	120/120	100%	3
External	>= 25	65%	106/109	97.24%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA502T

SOFTWARE ENGINEERING

• Ability to identify the minimum requirements for the development of application
• Ability to develop, maintain, efficient, reliable and cost-effective software solutions
• Ability to critically thinking and evaluate assumptions and arguments by using variant software architectural styles & software process models

• Understanding of software testing approaches such as unit testing and integration testing
• Understanding on quality control and how to ensure good quality software.

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	120/120	100%	3
External	>= 25	65%	109/109	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA503T

COMPUTER ARCHITECTURE

• Understand the theory and architecture of central processing unit.
• Analyze some of the design issues in terms of speed, technology, cost, performance
• Design a simple CPU with applying the theory concepts
• Learn the concepts of parallel processing, pipelining and inter processor communication.
• Understand the architecture and functionality of central processing unit.

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	120/120	100%	3
External	>= 25	65%	110/110	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 =

Course Code: BCA504T

OBJECT ORIENTED PROGRAMMING USING JAVA

• able to apply object-oriented programming features and concepts for solving given problem.
• able to use java standard API library to write complex programs
• able to implement object-oriented programming concepts using java
• able to develop interactive programs using applets and swings.

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	120/120	100%	3
External	>= 25	65%	107/107	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA505T

MICROPROCESSOR AND ASSEMBLY LANGUAGE

• Describe the architecture and organization of microprocessors along with instruction set format.
• Classify and articulate the addressing modes and memory access methods within the microprocessor.
• List, describe and use different types of instructions, directives and interrupts.
• Design and analyze assembly programming code to use the branching structures, looping structure flags, stacks, procedures, macros.
• Develop assembly languages programs using various programming tools.

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	120/120	100%	3
External	>= 25	65%	107/108	99.07%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA504P

JAVA PROGRAMMING LAB

• Demonstrate the principles of object-oriented programming
• Demonstrate simple data structures like arrays in a Java program
• Make use of members of classes found in the Java API
• Understand the concept of package, interface, multithreading, and File handling in java
• Implement, compile, test and run Java programs comprising more than one class, to address a particular software problem

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	120/120	100%	3
External	>= 25	65%	113/113	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA505P

ASSEMBLY LANGUAGE PROGRAMMING LAB

• Solve basic binary math operations using the instructions of microprocessor
• Apply programming knowledge using the capabilities of the stack, the program counter
• Design, code, and debugs Assembly Language programs to implement simple programs
• Execute a machine code program on the training boards
• To implement conditional processing, and integer arithmetic

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	120/120	100%	3
External	>= 25	65%	113/113	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA506P

PROJECT

• Students should be able to design and construct a hardware and software system, component, or process to meet desired needs
• Students are provided to work on multidisciplinary Problems
• Students should be able to work as professionals, with portfolio ranging from data management
• Students should be able to work as professionals, with database and software design to management and administration of entire systems
•

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	120/120	100%	3
External	>= 25	65%	112/112	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

SEMESTER – VI

Course Code: BCA601T

THEORY OF COMPUTATION

• Interpret the mathematical foundations of computation including automata theory; the theory of formal languages and grammars; the notions of
• Construct the abstract machines including finite automata, pushdown automata, and Turing machines from their associated languages and

• Construct the grammar for any given finite automata, pushdown automata or Turing machines
• Outline the characteristics of P, NP, and NP Complete problems
• Solve computational problems regarding their computability and complexity and prove the basic results of the theory of computation

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	120/120	100%	3
External	>= 25	65%	119/119	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA602T

SYSTEM PROGRAMMING

• To understand the basics of system programs like editors, compiler, assembler, linker, loader, interpreter and debugger
• Describe the various concepts of assemblers and microprocessors
• To understand the various phases of compiler and compare its working with assembler
• To understand how linker and loader create an executable program from an object module created by assembler and compiler
• To know various editors and debugging techniques

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	120/120	100%	3

External	>= 25	65%	119/119	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA603T

CRYPTOGRAPHY AND NETWORK SECURITY

• Analyze and design classical encryption techniques and block ciphers.
• Understand key management and distribution schemes and design User Authentication
• Analyze and design hash and MAC algorithms, and digital signatures.
• Know about Intruders and Intruder Detection mechanisms, Types of Malicious software
• Firewall Characteristics, Types of Firewalls, Firewall Location and Configurations

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	120/120	100%	3
External	>= 25	65%	119/119	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA604T

WEB PROGRAMMING

• Support the development of web pages.
• Write scripts using JavaScript in a web page.
• Effectively incorporate JavaScript in a web page

• Create forms and check for data accuracy
• Embed objects in a web page

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	120/120	100%	3
External	>= 25	65%	119/119	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 =

Course Code: BCA604P

WEB PROGRAMMING LAB

• Develop web pages using HTML, DHTML and Cascading Styles Sheets
• Develop a dynamic web page using JavaScript
• Build and consume web services
• Develop a Program using XML
• Create your own style sheets and use them in your web page.

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	120/120	100%	3
External	>= 25	65%	118/118	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3

Course Code: BCA605P

PROJECT WORK

• Allows a student to demonstrate their capabilities while working independently
• Ability to apply desired skills for doing research
• Ability to work with their peers, building teamwork and group skill
• Plan for their future technology
• To understand analyze and cater to the current day requirements in the software Industry.

Calculation of CO Attainment

Exam	Target Set		Number of students scored set target	Attainment %	Attainment level
Internal	>= 15	90%	120/120	100%	3
External	>= 25	65%	118/118	100%	3

Course Attainment

20% of Internal Attainment level + 80% of External Attainment Level
0.2 x3 = 0.6 + 0.8 x 3 = 2.40 = 3