



University of Science & Technology, Meghalaya

Department of Computer Science & Electronics

Programme Outcomes, Programme Specific Outcomes and Course Outcomes

POs, PSOs and COs of BCA

PROGRAM OUTCOMES (POs):

At the end of the three year BCA programme the students will be able to:

PO1: Understand, analyze and develop computer programs in the areas related to algorithm, web design and networking for efficient design of computer based system.

PO2: Work in the IT sector as system engineer, software tester, junior programmer, web developer, system administrator, software developer etc.

PO3: Apply standard software engineering practices and strategies in software project development using open source programming environment to deliver a quality of product for business success.

PO4: An ability to apply knowledge of mathematics, computer science and management in practice.

PO5: An ability to enhance not only comprehensive understanding of the theory but its application too in diverse field.

PO6: An ability to design a computing system to meet desired needs within realistic constraints such as safety, security and applicability in multidisciplinary teams with positive attitude.

PO7: In order to enhance programming skills of the young IT professionals, the program has introduced the concept of project development in each language/technology learnt during semester.

PROGRAM SPECIFIC OUTCOMES (PSOs):

A Bachelor of Computer Science should be able to develop:

PSO1: Focuses on preparing student for roles pertaining to computer applications and IT industry.

PSO2: Develop programming skills, networking skills, learn applications, packages, programming languages and modern techniques of IT.

PSO3:Get skill and info not only about computer and information technology but also in common, organization and management.

PSO4: Bachelor in computer applications (BCA) gives a number of opportunities to individuals to go ahead and shine in their lives. A few of them being like software programmer, system and network

Administrator, web designer faculty for computer science and computer applications .

COURSE OUTCOMES:

Communicative English (BEN711)

- CO1.** To impart basic communication skills among students.
- CO2.** It will help the students to foster a taste for literary prose pieces.
- CO3.** To provide throughout knowledge on English grammar.
- CO4.** To able to understand the techniques on Literary Texts (Poetry).
- CO5.** To provide throughout knowledge on Writing Skills.

Fundamentals of Computer Science (BCA101)

- CO1.** To make students well familiar with computer architecture, its application and uses.
- CO2.** To make students well familiar with peripheral devices
- CO3.** To make students well familiar with Internet.
- CO4.** To practically train students in MS-Office.
- CO5.** To make students well familiar with different computer programming languages and system programming.

Programming Methodology and C Programming (BCA102)

- CO1.** Prepare students to acquire knowledge of programming using C.
- CO2.** It is the precursor and inspiration for almost all of the most popular high-level languages available today.
- CO3.** Able to implement the programming in different platform.
- CO4.** To prepare student for basic Programming Methodology.
- CO5.** To practically trains students in C programming language.

Digital Logic & Design (BCA103.1)

- CO1.** To make students well familiar with Analog and Digital System.
- CO2.** To make students well familiar with Number System.
- CO3.** Able to understand the concept of Combination Circuits.
- CO4.** To understand and analyze Sequential logic- Flip-Flops and its different types.
- CO5.** To make students well familiar with Registers, Counters and the memory unit.

Applied Physics (BCA103.2)

- CO1.** To make students well familiar with general properties of matter.
- CO2.** To make students well familiar with waves and sound.
- CO3.** To make students well familiar with modern Physics I which include de Broglie's hypothesis of matter, waves.
- CO4.** To make students well familiar with modern Physics which include band theory, conductors and insulators.
- CO5.** To give brief description of fiber optics.

Data Structure through C (BCA201)

- CO1.** Have a comprehensive knowledge of the data structures and algorithms on which file structures and data bases are based.
- CO2.** Understand the importance of data and be able to identify the data requirements for an application.
- CO3.** Have an understanding and practical experience of algorithmic design and implementation.
- CO4.** Understand the issues involved in algorithm complexity and performance.
- CO5.** Understand the concept of graph & application of graphs.

Computer Organization & Architecture (BCA 202.1)

- CO1.** Understanding the introduction to digital computer and their fundamental architectures.
- CO2.** Input and Output peripheral devices and their communication with the rest of the computer components.
- CO3.** Functionalities and organization of processor units and their types.
- CO4.** Include the interrupts and direct memory access and class the standard I/O devices.
- CO5.** Memory organization, hierarchy and organization. Able to aware of RAM, ROM, COST, SIZE, CACHE and virtual memory.

Basic Electronics (BCA 202.2)

- CO1:** Identify the unique vocabulary associated with electronics and explain the basic concepts of Semiconductor diodes such as pn junction diode, characteristics and ammeters, DC load-line, Zener diode.
- CO2:** Draw and explain the structure of bipolar junction transistor. Explain the operation of each device in terms of junction bias voltage and charge carrier movement. Identify and explain the various current components in a transistor.
- CO3:** Describe the application of transistors for Current and voltage amplification. Also to describe the characteristics of different configurations of the transistor. Describe DC load line and bias point. List, explain, and design and analyze the different biasing circuits.

CO4: Sketch, explain and design the amplifier circuit for given specification and analyze them discuss oscillator principles, oscillator types, and frequency stability as it relates to its operation. Analyze and Design the different types of Oscillators.

CO5: Sketch and explain the basic block of communication system. State the principles of modulation and explain the different modulation techniques. Describe the theory and operation of radio systems and super heterodyne receivers.

Discrete Mathematics

(BCA203)

CO1. Apply knowledge of computing and mathematics appropriate to the discipline.

CO2. Analyze a problem and identify and define the computing requirements to solution.

CO3. Apply knowledge of computing, mathematics, science, and engineering appropriate to the modeling and design of software.

CO4. Implement the numerical methods using computer software and apply them in example.

CO5. Understand the concepts of algorithms.

Environmental Studies

(BEV 720)

CO1. Acquire skills to understand environment and its various components, related issues and problems, identifying and solving them.

CO2. Participate and be actively involved at all levels in working towards the benefits of environment.

CO3. Gain a variety of experiences and acquire knowledge to save the environment for future generations.

CO4. Acquire an awareness of the environment as a whole, its allied problems and sensitivity.

CO5. Understand social issues with environment.

Object Oriented Programming with C++ (BCA 301)

- CO1.** Know the principles of OOPs concept and structure.
- CO2.** Analyze the concept of classes and object, array, functions, constructor and destructor.
- CO3.** Come to know the concept of inheritance and classification, pointers, virtual function and polymorphism.
- CO4.** Able to work with file, file pointers and manipulators.
- CO5.** Understand the concept of templates and exception handling.

Software Engineering (BCA 302.1)

- CO1.** Learn developing methodology of software project.
- CO2.** Acquire skill to know how to develop software project.
- CO3.** Understand tools and techniques of software engineering.
- CO4.** Maintain the quality of software project.
- CO5.** Verify and validate the problem of software programming.

Management Information System (BCA 302.2)

- CO1.** To understand the managerial level management in organizations.
- CO2.** To learn about different management tools, level of decision making.
- CO3.** Coordination with DSS.
- CO4.** To develop team management skills.
- CO5.** To understand about the Security and Ethical Challenges.

Operating System (BCA 303)

- CO1.** Analyze the structure and basic architecture components involved in OS.
- CO2.** Demonstrate competence in recognizing and using system features.
- CO3.** Understand and analyze the theory and implementation of different OS aspect.
- CO4.** Understand the different types of scheduling algorithms.
- CO5.** Understand about the physical and logical address and concept of pages.

Relational Database Management System (BCA 304)

- CO1.** Give an introduction to about DBMS, data model, schema and benefit of database.
- CO2.** Able to design a good database using normalization, decomposition.

CO3. Understand the concepts of database architecture, parallelism concept and distributed database concept.

CO4. Understand about the indexes, sequences, data integrity, creating and maintaining tables.

CO5. Understand the concept of different query languages, cursors, triggers.

Programming with Java (BCA 401)

CO1. To have oops concept.

CO2. Ability to solve real world problems.

CO3. Understand the basic principles of creating java application with Graphical User Interface (GUI).

CO4. To be able to develop rich user interface using modern API's such as JAVAFX.

CO5. Understands the basic approaches to design software applications.

Computer Networks (BCA 402.1)

CO1. Have basic concepts and terminology in computer network.

CO2. Acquire knowledge of different types of topologies and protocols.

CO3. Understand different models of networking.

CO4. Have knowledge regarding different issues associated with layers.

CO5. Have knowledge about network security.

Positive Psychology (BCA 402.2)

CO1. Critically evaluate the theories, techniques and evidence-base of positive psychology.

CO2. Demonstrate an in-depth understanding of the range of positive psychology interventions to strengthen optimism, resilience and self-esteem.

CO3. Actively apply positive psychology techniques to enhance the wellbeing of individuals, groups, workplaces, communities and institutions.

CO4. Get the idea of Hope, Optimism, Self and related concepts, and Resilience.

CO5. Able to know Flow, Mindfulness, Spirituality and Interpersonal Character Strengths.

.Net Technology (BCA 403)

CO1. Able to develop application software using .NET framework.

CO2. Understanding the use of main features of the integrated development environment (IDE).

CO3. Able to develop windows applications.

CO4. Able to work with XML documents.

CO5. Able to develop crystal report.

Human Values and Professional Ethics (HVP 740)

CO1. To critically understand ethical issues as they pertain to professional and personal identity.

CO2. To learn to consider oneself and the world around from these basic ethical positions.

CO3. To develop sharpened analytic powers and capacities for oral and written expression.

Linux & Shell Programming (BCA 501)

CO1. Perform installation, package management and process monitoring.

CO2. Able to perform file system security and management.

CO3. Learn Shell scripting.

CO4. Learn advanced security and network concepts.

CO5. Perform User administration.

Web Programming (BCA 502)

CO1. Create PHP scripts that use object-oriented PHP.

CO2. Use stored procedures and triggers.

CO3. Create CSS and HTML script.

CO4. Create and deploy a portable web-based system.

CO5. Test and debug object-oriented PHP scripts.

E-Commerce & Digital Marketing (BCA 503.1)

CO1. Define various types of E-commerce.

CO2. Describe hardware and software technologies for E-commerce.

CO3. Explain payment systems for E-commerce.

CO4. Describe the process of buying and selling on the web.

CO5. Describe various E-business strategies.

Artificial Intelligence (BCA 503.2)

- CO1.** Demonstrate knowledge of the building blocks of AI as presented in terms of intelligent agents.
- CO2.** Analyze and form the problem as a state space, graph, design heuristics and select among different search or game based techniques to solve them.
- CO3.** Develop intelligent algorithms for constraint satisfaction problems.
- CO4.** Design intelligent systems for game playing.
- CO5.** Apply concepts of NLP to problems leading to understanding of cognitive computing.

Python (BCA 503.3)

- CO1.** Create scripts in Python.
- CO2.** Demonstrate the ability to solve problems using system approaches, critical and innovative thinking, and technology to create solutions.
- CO3.** Understand the purpose and the process of code reviews.
- CO4.** Design and develop applications using Python.
- CO5.** To make students well familiar with Python Modules.

Financial Accounting (BCA 504.1)

- CO1.** To give the practical knowledge of accounting to the students.
- CO2.** To make the students competent in preparation of Accounts for the Business Entities.
- CO3.** Learn about Management Accounting and Cost Accounting.
- CO4.** To make students well familiar with Computerized Accounting Packages.
- CO5.** Able to implement voucher Entry in Tally, Making Print out of the financial statements.

Automata Theory (BCA 504.2)

- CO1.** Design automata, regular expressions and context-free grammars accepting or generating a certain language.
- CO2.** Transform between equivalent deterministic and non-deterministic finite automata, and regular expressions.
- CO3.** Prove properties of languages, grammars and automata with rigorously formal mathematical methods.
- CO4.** Determine if a certain word belongs to a language.

CO5. Define Turing machines performing simple tasks.

Major Project (BCA601)

CO1: Student will get exposure to implement practical knowledge in real life applications.

CO2: Students will get exposure to enhance skills in problem solving, fault analysis and debugging.

CO3: Students will be able to discover potential research areas in the field of IT.

CO4: Demonstrate an ability to work in a team.

CO5: Compare and contrast the existing solutions for the research challenge.

CO6: Formulate and propose a plan for creating a solution for the research plan identified.

CO7: Report and present the findings of the study conducted in the preferred domain.

CO8: Establish a good repo with external organization and get employability skills