SAFA | COLLEGE OF ARTS AND SCIENCE

Affiliated to University of Calicut | ISO 9001-2015 Certified

PROGRAMME OUTCOMES
PROGRAMME SPECIFIC OUTCOMES
COURSE OUTCOMES

BACHELOR OF COMPUTER APPLICATION

Programme Learning Outcomes

PLO-1 – Demonstrate the aptitude of Computer Programming and Computer based problem solving skills.
PLO-2 – Display the knowledge of appropriate theory, practices and tools for the specification, design, implementation
PLO-3 – Ability to learn and acquire knowledge through online courses available at different massive open online course providers.
PLO-4 – Ability to link knowledge of Computer Science with other two chose Complementary disciplines of study.
PLO-5 – Display ethical code of conduct in usage of Internet and Cyber systems.
PLO-6 – Ability to pursue higher studies of specialization and to take up technical employment.
PLO-7 – Ability to formulate, to model, to design solutions, procedure and to use software tools to solve real world problems and evaluate.
PLO-8 – Ability to operate, manage, deploy, configure computer network, hardware, software operation of an organization
PLO-9 – Ability to present result using different presentation tools.
PLO-10 – Ability to appreciate emerging technologies and tools.

SEMESTER I

SL. NO.	NAME OF COURSE	COURSE OUTCOME	
1	BCA1B01 – Computer Fundamentals and HTML (Core Paper)	CO1	Familiar with fundamental concepts of Computer hardware and software
		CO2	Have knowledge of different Number system, Digital codes and Boolean algebra
		CO3	Understand the problem-solving aspect
		CO4	Demonstrate the algorithm and flow chart for the given problem.
		CO5	Design a Webpage with CSS
2	BCA1C01 – Mathematical Foundation for Computer Applications (Complementary Paper)	CO1	Learn the basic principles of linear algebra and vectors.
		CO2	Familiar with Determinant and Matrices.
		CO3	Formulate Limit, Continuity and Differentiability.
		CO4	Learn the basic principles of differential and integral Calculus
		CO5	Demonstrate a working knowledge Definite and Indefinite Integrals.
		CO6	Learn the mathematical modelling using ordinary and partial differential equations
3	BCA1C02 – Discrete Mathematics (Complementary Paper)	CO1	To equip the students with basic principles of discrete mathematics
		CO2	To learn the mathematical logic, set theory & Boolean Algebra
		CO3	To understand the basic concept of graphs and trees.

SEMESTER II

SL. NO.	NAME OF COURSE	COURSE OUTCOME	
1	BCA2B02 – Problem Solving Using C (Core Paper)	CO1	Interpret the basic principles of C Programming.
		CO2	Acquire decision making and looping concepts.
		CO3	Design and develop modular programming.
		CO4	Explore usage of Arrays, strings, structures, union and files.
		CO5	Effective utilization of pointers and dynamic memory allocation.
2	BCA2B03 - Programming Laboratory I: Lab Exam of 1st& 2nd Semester – HTML and Programming in C (Core Paper)	CO1	Analyse a web page and identify its elements and attributes.
		CO2	Create web pages using HTML5 and Cascading Style Sheets.
		CO3	Design and develop a webpage with Hyperlinks.
		CO4	Enhance their analysing and problem solving skills and use the same for writing programs in C.
		CO5	To write diversified programs using C language
3	BCA2C03 – Financial and Management Accounting (Complementary Paper)	CO1	To get a general introduction on accounting and its general application.
		CO2	To get a general understanding on various tools for financial statement analysis.
		CO3	To get a general understanding on accounting procedures up to the preparation of various financial statements.
		CO4	To get a general understanding of the important tools for managerial decision making.
4	BCA2C04 - Operations Research (Complementary Paper)	CO1	To formulate a real-world problem as a mathematical model.
		CO2	To find solutions for the mathematical models using LPP, Assignment and Transportation methods
		CO3	Formulate and solve problems as networks and graphs.
		CO4	To use CPM and PERT techniques to plan, schedule and control the activities of a project.

SEMESTER III

SL. NO.	NAME OF COURSE	COURSE OUTCOME	
1	XXXXA11– Python Programming (Common Paper)	CO1	Explain basic principles of Python programming language
		CO2	Implement decision making and loop statements in Python
		CO3	Implement GUI applications using Python
		CO4	Explain modular programming concepts using Python
		CO5	Familiarize with List, Tuple, Dictionary concepts in Python
2	XXXXA12 -Sensors and Transducers (Common Paper)	CO1	Explain resistance, inductance and capacitance transducers
		CO2	Perceive the concepts of temperature and pressure transducers
		CO3	Perceive the concepts level transducers such as and flow transducers
		CO4	Explain Electromagnetic transducers and radiation sensors
		CO5	Explain force and torque transducers and sound transducers
3	BCA3B04 – Data Structures Using C (Core Paper)	CO1	To be familiar with fundamental data structures and with the manner in which these data structures can best be implemented; become accustomed to the description of algorithms in both functional and procedural styles
		CO2	To have knowledge of complexity of basic operations like insert, delete, search on these data structures
		CO3	Ability to choose a data structure to suitably model any data used in computer applications
		CO4	Design programs using various data structures including hash tables, Binary and general search trees, graphs etc
		CO5	Implement and know the applications of algorithms for sorting, pattern matching
4	BCA3C05- Computer Oriented Numerical & Statistical Methods (Complementary Paper)	CO1	To compute solution of algebraic and transcendental equation by numerical methods like Bisection method and Newton Raphson method
		CO2	To recognize elements and variables in statistics and summarize qualitative and quantitative data.
		CO3	To calculate the mean, median and mode

			for individual series.
		CO4	To outline the properties of correlation and compute Karl-Pearson's coefficient of correlation
5	BCA3C06 –Theory of Computation (Complementary Paper)	CO1	To discuss key notions of computation, such as algorithm and decidability through problem solving.
		CO2	To explain the models of computation, including formal languages, grammars and automata, and their connections
		CO3	To analyze and design finite automata, pushdown automata and Turing machines
		CO4	To solve computational problems regarding their computability and complexity and prove the basic results of theory of computation

SEMESTER IV

SL. NO.	NAME OF COURSE	COURSE OUTCOME	
1	XXXXA13– Data Communication and Optical Fibers (Common Paper)	CO1	To Acquaint with the structure of Data Communications System and its components.
		CO2	To Familiarize with different network terminologies and transmission media
		CO3	To gain knowledge of the different multiplexing techniques ,Telephone system, Mobile System-GSM
		CO4	To become familiar with the functions of a Datalink layer and Switching
		CO5	To acquire the knowledge of Optical Fibre Cable and its working
2	XXXXA14- Microprocessors- Architecture and Programming (Common Paper)	CO1	To study general architecture of microprocessor
		CO2	To write assembly language programs, both simple programs and interfacing programs
		CO3	To know how to interface peripheral devices with 8085
		CO4	To study the architecture of 8086 microprocessor
3	BCA4B05 – Database Management System and RDBMS (Core Paper)	CO1	Gain knowledge of data base systems and data base management system software.
		CO2	Ability to model data in applications using conceptual modeling tools such as ER Diagrams and design data base schemas based on the model.
		CO3	Formulate, using SQL, solutions to a broad range of query and data update problems.
		CO4	Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database.
		CO5	Be acquainted with the basics of transaction processing and concurrency control.
4	BCA4B06- Programming Laboratory II: Lab Exam of 3rd and 4th Semester - Data (Complementary Paper)	CO1	Make use of typical data definitions and manipulation commands.
		CO2	Test the implementation of nested and join queries.
		CO3	Develop simple application using views, sequences and synonyms.

		CO4	Inspect and implement applications that require front-end tools.
		CO5	Familiarizing with different data structures tools like searching , sorting, Linked List etc.
5	BCA4C07- E-Commerce	CO1	Understand basics of electronic commerce framework
		CO2	Understand the various models of E-Commerce
		CO3	Understand the basics of networks and E-marketing
		CO4	Understanding the security, legal and ethical issues in E Commerce
		CO5	Analyzing the e-payment systems and designing the payment system
6	BCA4C08- Computer Graphics	CO1	To understand the basics of computer graphics, different graphics systems and applications of computer graphics.
		CO2	To learn various algorithms for scan conversion and filling of basic objects.
		CO3	To know the use of geometric transformations on graphics objects and their application in composite form.
		CO4	To learn different clipping methods and its transformation to graphics display device.
		CO5	To make students familiar with different color models and image manipulation using GIMP

SEMESTER V

SL. NO.	NAME OF COURSE	COURSE OUTCOME	
1	BCA5B07- Computer Organization and Architecture (Core Paper)	CO1	To make students understand the basic structure, operation and characteristics of a digital computer
		CO2	To familiarize with Computer Instruction and Interrupt Design
		CO3	To make students know the different types of control unit and Addressing Modes
		CO4	To familiarize with the Memory organization including cache memories and virtual memory
		CO5	To understand the I/O devices and standard I/O interfaces
2	BCA5B08- Java Programming (Common Paper)	CO1	Knowledge of the structure and model of the Java programming language.
		CO2	Use the Java programming language for various programming technologies.
		CO3	Develop software in the Java programming language.
		CO4	Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements.
3	BCA5B09 -Web Programming using PHP (Core Paper)	CO1	To understand basics of the Internet and World Wide Web
		CO2	To learn basic skill to develop responsive web applications
		CO3	To acquire the knowledge of HTML and CSS
		CO4	To understand basic concept of client side scripting language –javascript
		CO5	To understand the server side scripting language -PHP
4	BCA5B10 -Principles of Software Engineering (Core Paper)	CO1	To learn engineering practices in Software Development.
		CO2	Select and implement different software development process models
		CO3	Extract and analyse software requirements specifications for different projects
		CO4	Develop some basic level of software architecture/design
		CO5	Define the basic concepts and importance

			of Software project management concepts like cost estimation, scheduling and reviewing the progress
5	BCA5D01-Introduction to Computers and Office Automation (Open Course)	CO1	Understand different types of computers
		CO2	Learn documentation using Word processing software such as MS word and Open Office Writer
		CO3	Learn calculations using spreadsheet MS Excel and Open Office Writer
		CO4	Learn presentations using Open Office Impress/MS-Power Point
6	BCA5D02 - Web Designing (Open Course)	CO1	Learn Hypertext markup language
		CO2	Learn Web designing using HTML, Dhtml
		CO3	Familiarize with Javascript and HTML Editor (Frontpage/Bluefish)
7	BCA5D03 -Introduction to Problem Solving and C Programming (Open Course)	CO1	Learn problem solving and programming concept
		CO2	Learn C programming concepts
		CO3	Learn looping constructs
		CO4	Acquire skills in programming using arrays, functions, structures and unions
8	BCA5D04 -Introduction to Data Analysis using Spread sheet (Open Course)	CO1	Familiarize with MS Excel
		CO2	Acquire knowledge about Pivot Table application

SEMESTER VI

SL. NO.	NAME OF COURSE	COURSE OUTCOME	
1	BCA6B11- Android Programming (Core Paper)	CO1	To gain knowledge of developing end user application using Android SDK
		CO2	To familiarize with Android Resources
		CO3	To acquaint with user interfaces development in Android
		CO4	To acquire knowledge about creating menus and operating files in Android
2	BCA6B12- Operating Systems (Common Paper)	CO1	To understand the objectives, functions and types of Operating System
		CO2	To have a basic knowledge about process, Threads, Deadlock
		CO3	To understand the knowledge of Linux shell programming
		CO4	To learn about CPU scheduling and memory management
3	BCA6B13- Computer Networks (Core Paper)	CO1	To understand about different network terminologies
		CO2	To familiarize with different layers of network
		CO3	To understand the functions of data link layer and network layer
		CO4	To familiarize with the functions of Transport layer
		CO5	To understand the concept of network security and Cryptography
4	BCA6B14-Programming Laboratory III: Lab Exam of Vth Semester Java and PHP Programming (Core Paper)	CO1	To learn about the Object Oriented Concepts in Java Programming
		CO2	To understand the practical knowledge of Web Programming using PHP
5	BCA6B15-Programming Laboratory IV: Lab Exam of Android and Linux Shell Programming (Core Paper)	CO1	To learn the practical knowledge of Android Programming
		CO2	To familiarize with the practical knowledge of shell programming
6	BCA6B17-(Project Work or Research Methodology) and Industrial Visit (Core Paper)	CO1	To acquire the implementation level knowledge and interaction with industry
7	BCA6B17- Research Methodology (In lieu of Project Work) (Core Paper)	CO1	To acquire Research skills
		CO2	To define a Research problem
		CO3	To familiarize with the Data Collection Methods
8	BCA6B16A -System Software (Elective Paper)	CO1	To learn about the concept of system software
		CO2	To understand the knowledge of Macros

			and macro processors
		CO3	To Familiarize with Loaders and Linkers
9	BCA6B16B -Machine Learning (Elective Paper)	CO1	The students will be able to understand the machine learning concepts
		CO2	To acquire the essential mathematical and statistical foundations of machine learning
10	BCA6B16C- Software Testing & Quality Assurance (Elective Paper)	CO1	To Familiarize with the concepts of Phases of Software Project
		CO2	To Understand the various testing types
		CO3	To Understand test planning and reporting