St.Mary'S College

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Learning Outcomes 2018-19

PRINCIPAL
ST. MARY'S COLLEGE
SULTHAN BATHERY
WAYANAD-673 592

DEPARTMENT OF COMPUTER APPLICATIONS

1. PROGRAM OUTCOMES
2. PROGRAM SPECIFIC OUTCOMES
3. COURSE OUTCOME (semester wise)

1.PROGRAM OUTCOMES

PO1: To develop critical thinking and problem-solving skills by fostering scientific temper.

PO2: To prepare students in the path of lifelong learning with a sense of social responsibility.

PO3: To heighten technological awareness.

PO4: To train future industry specialists upholding professional ethics.

PO5: To inculcate the skills needed for developing software solutions using emerging and current technologies.

PO6: To produce graduates with technical, professional and communication skills.

2.PROGRAM SPECIFIC OUTCOMES

PSO1: Focus on preparing students for the various job opportunities in computer applications and IT industries.

PSO2: To gain a basic understanding about the functioning of a computer along with its hardware and peripherals.

PSO3: To develop programming skills, networking skills, to learn various application packages and latest techniques in IT.

PSO4: To attain an in-depth knowledge of various programming languages such as Java, Android, HTML, C, SQL etc.

PSO5: To impart knowledge required for planning, designing and building Complex Application / Software Systems.

PSO6: To produce entrepreneurs to develop bespoke solutions for MSMEs and other Industries.

3.Course outcomes (semester wise)

Course No	Course Code	Course Title	Marks			Contact Hours			Credit
			Internal	External	Total	Theory	Lab	Total	
		I Semester							
1	XXXXA01	Common English Course I	20	80	100	5	0	5	4
2	XXXXA02	Common English Course II	20	80	100	4	0	4	3
3	XXXXA07	Additional Language Course I	20	80	100	4	0	4	4
4	BCA1B01	Computer Fundamentals & HTML	20	80	100	2	2	4	3
5	BCA1C01	Mathematical Foundation of Computer Applications	20	80	100	4	0	4	3
6	BCA1C02	Discrete Mathematics	20	80	100	4	0	4	3
Total 6 Courses					**600**	**23**	**2**	**25**	**20**

BCA1B01-Computer Fundamentals and HTML

CO1: Get basic Concepts of Hardware and Software, Computer Languages, Hardware Components and Memory Hierarchy

CO2: To describe the basics of Computer organization

CO3: Explain about Number Systems and Boolean Algebra, DigitalCodes, Boolean Operations

CO4: To equip the students to write algorithm and draw flow chart for solving simple problems

CO5: To understand the basics of Internet and webpage design using HT ML & CSS

BCA1C01-Mathematical Foundations for Computer Applications

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

BCA1C02   - Discrete Mathematics

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.

II Semester

Course No	Course Code	Course Title	Marks			Contact Hours			Credit
			Internal	External	Total	Theory	Lab	Total	
7	XXXXA03	Common English Course III	20	80	100	5	0	5	4
8	XXXXA04	Common English Course IV	20	80	100	4	0	4	3
9	XXXXA08	Additional Language Course II	20	80	100	4	0	4	4
10	BCA2B02	Problem Solving using C	20	80	100	2	2	4	3
11	BCA2B03	Programming Laboratory I: Lab Exam of 1st & 2nd Sem. HTML & Programming in C	20	80	100	0	0	0	2
12	BCA2C03	Financial & Management Accounting	20	80	100	4	0	4	3
13	BCA2C04	Operations Research	20	80	100	4	0	4	3
Total 7 Courses					700	23	2	25	22

BCA2B02 – Problem Solving Using C

CO1:To equip the students with fundamental principles of Problem-Solving aspects.

CO2:To learn the concept of programming

CO3:To study C language

CO4:To equip the students to write programs for solving simple computing problems

BCA2B03 - Programming Laboratory I: Programming in C & HTML

CO1:To make the students learn programming environments.

CO2:To practice procedural programming concepts.

CO3:To make the students equipped to solve mathematical or scientific problems using C

CO4: To Practice concepts of HTML.

CO5: To practice webpage designing using HTML and CSS.

BCA2C03-Financial & Management Accounting

CO1:To get a general introduction on accounting and its generalapplication.

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.

BCA2C04 Operations Research

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.

III Semester										
			Marks			Contact Hours			Credit	
Course No	Course Code	Course Title	Internal	External	Total	Theory	Lab	Total		
14	XXXXA11	General Course I-Basic Numerical Skills	20	80	100	4	0	4	4	
15	XXXXA12	General Course II- General Informatics	20	80	100	4	0	4	4	
16	BCA3B04	Data Structures Using C	20	80	100	3	4	7	4	
17	BCA3C05	Computer Oriented Numerical &Statistical Methods	20	80	100	5	0	5	3	
18	BCA3C06	Theory Of Computation	20	80	100	5	0	5	3	
Total 5 Courses					500	21	4	25	18	

A11 BASIC NUMERICAL SKILLS

CO1: Impart knowledge about Set theory ,usage of Venn Diagram, Matrix operations

CO2: Solutions of Equations by using Matrix

CO3: Describes different methods to solve different types of equations

CO4:Methods to calculate Simple Interest and Compound interest

CO5:Introduction about Statistics:-.Scope and Limitations

CO6:Types of Data, Enquiries, and formation of Frequency Distributions

CO7:Methods to find Averages:-Mean.Median,Mode,Geometric mean ,Harmonic mean

CO8:Methods to find variations:-Range,QuartileDeviation,Meandeviation,Standard Deviation

CO9:Methods to find Skewness and Kurtosis

CO10:Usage of Index numbers,Time Series to find variations

A12 General Informatics

CO1:Describe about fundamentals of Computers and Operating Systems, Computer Networks

CO2 Basics of IT,IT and Internet,E-Governance,Electronic Data Inter change

CO3:Describe about Knowledge Skills for Higher Education.

CO4: Explain basic Concepts of IPR

BCA3B04 Data Structures Using C

CO1: To understand the data types, algorithms and time complexity.

CO2: To understand the basic data structures such as arrays, linked lists, stack, queue, tree and graphs

CO3: Apply algorithms for sorting, searching, insertion and deletion of data in the various data structures.

CO4: To understand the application of hash functions and the concepts of collision along with the collision resolution techniques.

BCA3C05 -Computer Oriented Numerical and Statistical Methods

CO1: To compute solution of algebraic and transcendental equation by numerical methods like Bisection method and Newton Rapson 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

BCA3C06 -Theory of Computation

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 analyse 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.

IV Semester

Co	Course Code	Course Title	Marks			Contact Hours			Credit
			Internal	External	Total	Theory	Lab	Total	
19	XXXXA13	General Course III- Entrepreneurship Development	20	80	100	4	0	4	4
20	XXXXA14	General Course IV- Basics of Audio and Video	20	80	100	4	0	4	4
21	BCA4B05	Database Management System and RDBMS	20	80	100	3	4	7	4
22	BCA4B06	Programming Laboratory II: Lab Exam of 3rd & 4th Sem. Data Structures & RDBMS	20	80	100	0	0	0	2
23	BCA4C07	E-Commerce	20	80	100	5	0	5	3
24	BCA4C08	Computer Graphics	20	80	100	5	0	5	3
Total 6 Courses					600	21	4	25	20

A13 - Entrepreneurship Development

CO1: To acquire necessary knowledge and skills to discern distinct traits for organizing and carrying out entrepreneurial activities.

CO2: To understand the systematic process to select, screen and design strategies for new business ideas.

CO3: To learn the specificities as well as the pattern of entrepreneurship development and, finally, to contribute to their entrepreneurial and managerial potentials.

A14 -Basics of Audio and Video

CO1: To learn the characteristics of Sound and Acoustics and its effects on phenomena such as reflection, refraction, diffraction etc.

CO2: To grasp the construction and working principle of various Microphones, Loudspeakers and noise reduction techniques.

CO3: To acquire knowledge on analog and digital recording techniques and various audio compression standards such as MP3, AAC etc.

CO4: To have an understanding about the different video recording standards and their compression techniques such as MPEG-1, H.26 etc.

BCA4B05 Database Management systems and RDBMS

CO1: To understand the basic concepts and various data models used in database design.

CO2: To apply the ER modelling concepts and architecture to the real-world problems.

CO3: To use normalization techniques.

CO4: To design queries using SQL for query processing.

BCA4B06 Programming Laboratory II:
Data Structures and RDBMS

Data Structures Using C (Lab)

CO1: Develop programs for implementing linear data structures and its applications.

CO2: Develop programs for implementing non-linear data structures and its applications.

CO3: Programs for various sorting techniques.

CO4: Programs for various searching techniques.

RDBMS (lab)

CO1: To use an SQL interface of a multiuser relational DBMS package to create, populate, maintain and query a Database.

CO2: Analyze information stored by programming using PostGreSQL

BCA4C07E-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 ECommerce.

CO5: Analysing the e-payment systems and designing the payment system

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 learndifferent clipping methods and its transformation to graphics display device.

CO5 :To make students familiar with different color models and image manipulation using GIMP

SEMESTER 5 (2016 ADMISSION)

Semester	Course No	Course Code	Course Title	Marks			Contact Hours			Credit
				Intern	Extern	Total	Theory	Lab	Total	
V Semester	26	BCA5B08	Android Programming	20	80	100	3	1	4	4
	27	BCA5B09	Java Programming	20	80	100	2	4	6	4
	28	BCA5B10	Computer Networks	20	80	100	3	1	4	4
	29	BCA5B11	Computer Organization and Architecture	20	80	100	5	0	5	4
	30	BCA5B12	Microprocessor and Applications	20	80	100	3	1	4	3
	31	XXX5DXX	Open Course (Other Streams)	10	40	50	2	0	2	2
Total (6 Courses)						550			25	21

BCA5B08-Android Programming

CO1: Understand about the architecture and features of Android

CO2: To have a review on concept of Android programming.

CO3: To learn Android Programming Environments.

CO4: To practice programming in Android.

CO5: To learn GUI Application development in Android platform with XML

BCA5B09 -Java Programming

CO1: Demonstrate the principles of object-oriented programming.

CO2: To learn Java Programming Environments.

CO3: Understand the principles and practice of object oriented analysis and design in the construction of robust, maintainable programs which satisfy their requirements.

CO4: Understand the concept of package, interface, multithreading and File handling in java.

CO5: To learn GUI Application development in JAVA.

BCA5B11-Computer Organization and Architecture

CO1: To learn logic gates, combinational circuits and sequential circuits

CO2: Interpret the functional architecture of computer system

CO3: To learn addressing modes, instruction formats and program control statements

CO4: Analyse the functions of each element in memory hierarchy

CO5: Learn the functional units of a processor

CO6: Identify and compare different methods for computer I/O.

BCA5B12-Microprocessors &Applications

CO1: To understand basic Architecture of 8086 and its pin configurations. .

CO2: To learn different addressing modes of 8086 .

CO3: To learn instruction sets and interrupts of 8086.

CO4: To understand the assembler directives and using macros.

CO5: To learn different peripherals and interfacing of 8086.

CO6: Introduction to advanced microprocessors and BIOS and DOS interrupts

BCS5D03 - Introduction to Problem Solving and C Programming(OPEN COURSE)

CO1:To introduce fundamental principles of Problem Solvingaspects.

CO2:To learn the concept of programming.

CO3:To learn C language

SEMESTER 6 (2019 ADMISSION)

32	BCA6B13	Web Programming	20	80	100	4	0	4	3
33	BCA6B14	Software Engineering	20	80	100	4	0	4	3
34	BCA6B15	Operating Systems	20	80	100	5	0	5	4
35	BCA6B16	Programming Laboratory- III: Java & Web Programming	20	80	100	0	6	6	2
36	BCA6B17	Project & Programme Viva Voce	10	40	50	0	2	2	2
37	BCA6B18x	Elective	20	80	100	4	0	4	4
Total (6 Courses)					**550**			**25**	**18**

BCA6B13-Web programming

CO1 :Understand basic structure of the Internet

CO2: Analyse a web page and identify its elements and attributes

CO3: Illustrate relationship between the client side and the server side scripts

CO4: learn basics of JavaScript .

CO5: Describe the general concepts of PHP scripting language for the development of internet websites

CO6 : Apply the basic functions of MySQL database program

BCA6B14|Principles of Software Engineering

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: Develop some basic level of software architecture/design.

CO6: Define the basic concepts and importance of Software project management concepts like cost estimation, scheduling and reviewing the progress.

BCA6B15 – Operating System

CO1:To learn objectives & functions of Operating Systems.

CO2:To understand processes and its life cycle.

CO3:To learn and understand various Memory and Scheduling

Algorithms.

CO4:To have an overall idea about the latest developments in

Operating Systems

BCA6B16| Programming Laboratory III: Lab Exam of Java web programming

CO1: Practice Java programming.

CO2: Familiar with the students with OOPs concept

CO3: Programs using classes and methods

CO4: Create programs for various real world problems.

CO5: Programs using interfaces and Packages.

CO6: Programs to implement the exception handling mechanism

CO7: To practice client side and server side scripting.

CO8: To practice PHP Programming.

CO9: To practice developing dynamic websites.

CO10:To practice how to interact with databases through PHP

BCA6B16 - PROJECT WORK

CO1 :To make the students confident in designing an Online Project with advanced technologies on their choice

CO2 :To develop programming skills, networking skills, learn applications, packages, programming languages and modern techniques of IT.

CO3 :Students are trained to meet the requirements of the Industry

BCA6B18c - SOFTWARE TESTING AND QUALITY ASSURANCE (ELECTIVE)

CO1 : To discuss the phases in Software Project Development and Process models in Software Life Cycle model.

CO2 : To provide the basics of Quality control, quality assurance, verification and validation

CO3 : To learn white-box testing, black-box testing, integration testing and inspection techniques and how test tools can be used in the testing life cycle

CO4 : To know system and acceptance testing, perform comparative analysis of functional and non-functional testing

CO5 :To understand how to do performance testing and regression testing.

CO6 : To know test planning, management and testing metrics for product and process

Complementary—BSc Mathematics

First Semester

CSC1C01-Computer Fundamentals

CO1: Explain about Number Systems and Boolean Algebra, Digital Codes,Boolean Operations

CO2: To describe the basics of Computer organization

CO3: To equip the students to write algorithm and draw flow chart for solving simple problems

Second semester

CSC3C03-Fundamentals of System Software, Networks & DBMS

CO1: Learn the basic concepts of various system software

CO2: Learn the basics of Computer Networks

CO3: Explain how communication works in computer networks and to

understand the

basic terminology of computer networks

CO4: Learn the basics of Databases

CO5: Master the basic concepts and understand the applications of database

systems.

Third Semester

CSC2C03-Problem solving using C Programming .

CO1:To equip the students with fundamental principles of Problem Solving aspects.

CO2:To learn the concept of programming

CO3:To study C language

CO4:To equip the students to write programs for solving simple computing problems

Fourth semester

CSC4C04 Data Structures using C programming

CO1: To understand the data types, algorithms and time complexity.

CO2: To understand the basic data structures such as arrays linked lists, stack,
    queue, tree and graphs

CO3: Apply algorithms for sorting, searching, insertion and deletion of data in
    the various data structures.

CSC4C05 Programming Lab: C and Data Structures

Data Structures (Lab)

CO1: Develop programs for implementing linear data structures and its
    applications.

CO2: Programs for various sorting techniques.

CO3: Programs for various searching techniques.