



# ST. ANTONY'S COLLEGE

## PERUVANTHANAM

*(AFFILIATED TO MG UNIVERSITY, ACCREDITED BY GOVT. OF KERALA)*

**PSO & CO**

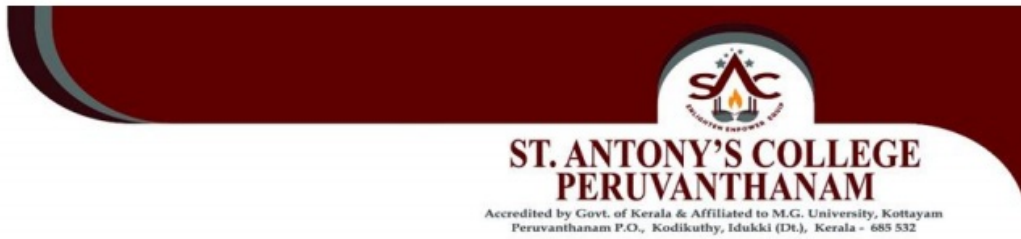


**BCA**

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✉ [principal@stantonyscollegepeerumade.ac.in](mailto:principal@stantonyscollegepeerumade.ac.in)

🌐 [www.stantonyscollegepeerumade.ac.in](http://www.stantonyscollegepeerumade.ac.in)



### **BCA PROGRAMME SPECIFIC OUTCOMES**

1. Understand the fundamental concept of computers, software, hardware and programming languages.
2. To develop experts in the field of computer science.
3. Develop software applications which will focus on social needs.
4. Work in the IT sector as a software developer, system engineer, web developer etc.
5. Analyze, design, implement and evaluate computerized solutions to real life problems.
6. Enable the students to develop software solutions based on ethical practices and cyber regulations.

**CORE COURSE****COURSE OUTCOMES**

<b>NAME OF THE PROGRAMME: BCA</b>			
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>COURSE OUTCOMES</b>	
<b>SEMESTER 1</b>			
<b>CA1C RT01</b>	<b>COMPUTER FUNDAMENTALS AND DIGITAL PRINCIPLES</b>	<b>CO1</b>	To understand the basic of computer and its input & output devices
		<b>CO2</b>	To aware about the number system and its conversion from one number system to another
		<b>CO3</b>	To aware about the different types combinational & sequential logic circuits and its working
		<b>CO4</b>	To understand the concept of operating system concept
		<b>CO5</b>	To understand the concept of binary addition and subtraction
<b>CA1C RT02</b>	<b>METHODOLOGY OF PROGRAMMING AND C LANGUAGE</b>	<b>CO1</b>	To be aware of the programming language and translators of computer.
		<b>CO2</b>	To know how to build a program in C language with the help of tokens, data types and operators
		<b>CO3</b>	To be able to write a simple program by using the concepts of control structures and looping statements.
		<b>CO4</b>	To understand the concept of arrays and functions
		<b>CO5</b>	To understand the concept of pointers in c
<b>CA1C RT01</b>	<b>SOFTWARE LAB1</b>	<b>CO1</b>	To familiarize decision statements, loop control statements.
		<b>CO2</b>	To be able to write the programs based on string handling functions
		<b>CO3</b>	Programs to write functions, structures
		<b>CO4</b>	Write programs based on arrays
		<b>CO5</b>	Write programs based on pointers
<b>SEMESTER 2</b>			
<b>CA2C RT03</b>	<b>DATABASE MANAGEMENT SYSTEMS</b>	<b>CO1</b>	To understand how data is stored in the database
		<b>CO2</b>	To understand how to store and manipulate data using MYSQL

		<b>CO3</b>	<b>To aware about database security concepts and the control measures</b>
		<b>CO4</b>	<b>To understand the concepts of normalisation</b>
		<b>CO5</b>	<b>To understand relational database concepts</b>
<b>CA2C RT04</b>	<b>COMPUTER ORGANIZATION &amp; ARCHITECTURE</b>	<b>CO1</b>	<b>The purpose of the course is to introduce principles of computer organization and the basic architectural concepts.</b>
		<b>CO2</b>	<b>Able to Demonstrate the design of the functional units of a digital computer system.</b>
		<b>CO3</b>	<b>Understand the basics of instructions sets and their impact on processor design</b>
		<b>CO4</b>	<b>To get clear idea about memory management</b>
		<b>CO5</b>	<b>To be clear with pipeline procedure and parallel processing</b>
<b>CA2C RT05</b>	<b>OBJECT ORIENTED PROGRAMMING USING C++</b>	<b>CO1</b>	<b>To understand how to use class and object in a program</b>
		<b>CO2</b>	<b>To attain the concept of constructors and use of different types of constructors in C++</b>
		<b>CO3</b>	<b>To get the clear idea about inheritance and different types of inheritance in C++</b>
		<b>CO4</b>	<b>To get the awareness of function overloading</b>
		<b>CO5</b>	<b>To understand the concept of virtual functions</b>
<b>CA2C RP02</b>	<b>SOFTWARE LABII</b>	<b>CO1</b>	<b>Programs based on function overloading, friend function, operator overloading (binary vs unary) using member function.</b>
		<b>CO2</b>	<b>To have a clear idea about how to write C++ program by using the concept of constructors and its types and inheritance and its type.</b>
		<b>CO3</b>	<b>Programs based on overloading concept in C++</b>
		<b>CO4</b>	<b>To get the awareness about how to create database and tables</b>
		<b>CO5</b>	<b>Database programs to create table and work with queries</b>
<b>SEMESTER 3</b>			
<b>CA3C RT06</b>	<b>COMPUTER GRAPHICS</b>	<b>CO1</b>	<b>To familiarize students with computer graphics systems.</b>
		<b>CO2</b>	<b>To gain knowledge on implementation of clipping and 3D graphics.</b>



		<b>CO3</b>	<b>Learn about different types of line drawing algorithms.</b>
		<b>CO4</b>	<b>To understand the steps required for designing an animation sequence.</b>
		<b>CO5</b>	<b>Learn about different types of transformations.</b>
<b>CA3C RT07</b>	<b>MICROPROCESSOR AND PC HARDWARE</b>	<b>CO1</b>	<b>To understand the architecture and pin configuration of Intel 8085</b>
		<b>CO2</b>	<b>To have basic knowledge about the instruction set of Intel 8085</b>
		<b>CO3</b>	<b>Able to get the basic components, installation and formatting procedure of Hard disk</b>
		<b>CO4</b>	<b>To know about the components and functions of Motherboard</b>
		<b>CO5</b>	<b>to learn different types of memory modules and memory area.</b>
<b>CA3C RT08</b>	<b>OPERATING SYSTEM</b>	<b>C O 1</b>	<b>Students will learn how Operating Systems are Important for Computer Systems.</b>
		<b>C O 2</b>	<b>Able to Understand the fundamental concepts of process scheduling in operating system</b>
		<b>C O 3</b>	<b>To learn different process scheduling algorithms and synchronization techniques to achieve better performance of a computer system.</b>
		<b>CO4</b>	<b>Able to learn different memory management techniques like paging, segmentation and demand paging etc</b>
		<b>CO5</b>	<b>To provide knowledge in Secondary Storage Structure that is file system and Evaluation of various Disk Scheduling Algorithms.</b>
<b>CA3C RT09</b>	<b>DATA STRUCTURES USING C++</b>	<b>CO1</b>	<b>To provide the knowledge of basic data structures and their implementations.</b>
		<b>CO2</b>	<b>To understand importance of data structures in context of writing efficient programs.</b>
		<b>CO3</b>	<b>Gain Knowledge In Concept Of Search and sort.</b>
		<b>CO4</b>	<b>provide students with a strong foundation in fundamental data structures</b>
		<b>CO5</b>	<b>The course aims to make students familiar with common algorithms that are used to manipulate data structures</b>

<b>CA3C RP03</b>	<b>Software Lab III</b>	<b>CO1</b>	<b>Demonstrate array operations.</b>
		<b>CO2</b>	<b>Demonstrate stack operations and its applications.</b>
		<b>CO3</b>	<b>Demonstrate the operations of binary search trees.</b>
		<b>CO4</b>	<b>Demonstrate the operations of linked list</b>
		<b>CO5</b>	<b>Demonstrate the operations of stack</b>
<b>SEMESTER 4</b>			
<b>CA4C RT10</b>	<b>DESIGN AND ANALYSIS OF ALGORITHMS</b>	<b>CO1</b>	<b>Design and analyze the time and space efficiency of the data structure</b>
		<b>CO2</b>	<b>Design an algorithm by selecting appropriate design strategies.</b>
		<b>CO3</b>	<b>To analyze the performance of algorithms.</b>
		<b>CO4</b>	<b>Learn about the implementation of Strassen's matrix multiplication.</b>
		<b>CO5</b>	<b>To understand the use of backtracking..</b>
<b>CA4C RT11</b>	<b>SYSTEM ANALYSIS AND SOFTWARE ENGINEERING</b>	<b>CO1</b>	<b>To know how to develop and deliver quality software within budget and time.</b>
		<b>CO2</b>	<b>Gain knowledge about various software lifecycle models.</b>
		<b>CO3</b>	<b>Able to know the role of software engineer and learn about various software testing methods.</b>
		<b>CO4</b>	<b>The course covers project management techniques such as scheduling, budgeting..</b>
		<b>CO5</b>	<b>The course provides students with skills to work effectively in teams</b>
<b>CA4C RT13</b>	<b>WEB PROGRAMMING USING PHP</b>	<b>CO1</b>	<b>To know the basic html commands to prepare a website and how to validate it by using java script.</b>
		<b>CO2</b>	<b>To attain the basic idea about php variables ,arrays, and able to write a simple php program</b>
		<b>CO3</b>	<b>To connect php program with Mysql database with required sql fields</b>
		<b>CO4</b>	<b>Able to make a website by using CSS properties</b>
		<b>CO5</b>	<b>To provide the functions and methods in PHP</b>
	<b>LINUX</b>	<b>C O</b>	<b>Familiarize students with the Linux environment, and be able to run commands</b>

<b>C A4 C R T1 2</b>	<b>ADMINISTRATION</b>	<b>1</b>	<b>on a standard Linux operating system.</b>
		<b>C O 2</b>	<b>Provide the skills needed to develop the Linux shell programs</b>
		<b>C O 3</b>	<b>Able to Develop shell scripts to perform more complex tasks in a shell programming environment.</b>
		<b>CO4</b>	<b>Understand the role and responsibilities of a Linux system administrator</b>
		<b>CO5</b>	<b>Able to Execute Filter commands on a standard linux operating system</b>
<b>CA4C RP04</b>	<b>SOFTWARE LAB IV</b>	<b>CO1</b>	<b>Create programs based on html and validate it with java script program</b>
		<b>CO2</b>	<b>To create programs based on php fuctions and MYSQL.</b>
		<b>CO3</b>	<b>Implement PHP programs of cookie and session.</b>
		<b>CO4</b>	<b>Students will be able to create file systems and directories and operate them</b>
		<b>CO5</b>	<b>Students will able to develop shell script</b>
<b>SEMESTER 5</b>			
<b>CA5C RT14</b>	<b>COMPUTER NETWORKS</b>	<b>CO1</b>	<b>To understand the types of signals and data to be used for communication.</b>
		<b>CO2</b>	<b>To clear about how to encrypt and decrypt the message during transmission</b>
		<b>CO3</b>	<b>To understand how can we transmit data using transmission media</b>
		<b>CO4</b>	<b>Gain the knowledge about Cellular telephony</b>
		<b>CO5</b>	<b>understand different protocols and addressing.</b>
<b>C A5 C R T1 5</b>	<b>IT AND ENVIRONMEN T</b>	<b>CO1</b>	<b>Able to Understand the significance and value of environment</b>
		<b>CO2</b>	<b>Students will able to Understand the evolution of E-Learning and its tools</b>
		<b>CO3</b>	<b>To understand how the growth of information technology affects the society</b>
		<b>CO4</b>	<b>Obtain the fundamentals of green computing and its strategies</b>
		<b>CO5</b>	<b>Helps to enable students to develop theoretical understandings of Human Rights laws.</b>

<b>CA5C RT16</b>	<b>JAVA PROGRAMMING USING LINUX</b>	<b>CO1</b>	<b>To attain the basic idea about java and able to write programs</b>
		<b>CO2</b>	<b>To aware about the core concepts of java such as multi-threading, exception handling etc,</b>
		<b>CO3</b>	<b>To understand how Java is used to create GUI by using the concept of applets</b>
		<b>CO4</b>	<b>To get the awareness of interfaces and package in java</b>
		<b>CO5</b>	<b>To get the awareness of data base concept in java</b>
<b>CA5C RP05</b>	<b>SOFTWARE LAB V</b>	<b>CO1</b>	<b>Learn how to write application programs in java</b>
		<b>CO2</b>	<b>Learn how to write applet programs in java</b>
		<b>CO3</b>	<b>Learn how to connect java program with database</b>
		<b>CO4</b>	<b>Learn how to implement overloading concept in Java</b>
		<b>CO5</b>	<b>Learn how to implement package in java through program</b>
<b>CA5C RP06</b>	<b>SOFTWARE DEVELOPMENT LAB I (MINI PROJECT IN PHP)</b>	<b>CO1</b>	<b>Learn about how to develop a project in PHP.</b>
		<b>CO2</b>	<b>It makes the student confident in designing a project.</b>
		<b>CO3</b>	<b>Students are trained to meet the requirements of the industry.</b>
		<b>CO4</b>	<b>Students are able to execute commands in linux</b>
		<b>CO5</b>	<b>Students are trained to develop shell script in linux</b>
<b>SEMESTER 6</b>			
<b>CA6C RT17</b>	<b>CLOUD COMPUTING</b>	<b>CO1</b>	<b>To know about most widely used cloud platforms in industry and different types of cloud.</b>
		<b>CO2</b>	<b>Understand the concept of virtualization and types of virtualizations.</b>
		<b>CO3</b>	<b>To aware of the main application area of using cloud computing</b>
		<b>CO4</b>	<b>Gain the knowledge about Aneka -The cloud Platform</b>
		<b>CO5</b>	<b>This aims the idea about data intensive computing</b>
		<b>CO1</b>	<b>Students will be able to demonstrate</b>



<b>C A6 C R T1 8</b>	<b>MOBILE APP LICATION DE VELOPMENT -ANDROID</b>		<b>their understanding of the fundamentals Android Operating system</b>
		<b>CO2</b>	<b>To develop UI based mobile application using android software development tools</b>
		<b>CO3</b>	<b>Able to apply Java programming concepts to Android application Development</b>
		<b>CO4</b>	<b>Students get the awareness of Android basic features</b>
		<b>CO5</b>	<b>To develop simple Android program using tools</b>
<b>CA6C RP07</b>	<b>SOFTWARE LAB VI &amp; SEMINAR</b>	<b>CO1</b>	<b>Develop skills in presentation and discussion of research topics in a public forum.</b>
		<b>CO2</b>	<b>Exposure to a variety of research topics and activities in order to enrich their academic experience.</b>
		<b>CO3</b>	<b>Understand how to organize the contents for presentation</b>
		<b>CO4</b>	<b>Demonstrate the ability to describe, interpret and analyze technical issues and develop competence in presenting.</b>
		<b>CO5</b>	<b>Make use of new and recent technology and improve soft skills</b>
<b>CA6C RP08</b>	<b>SOFTWARE DEVELOPMENT LAB II ( MAIN PROJECT)</b>	<b>CO1</b>	<b>It makes the student confident in designing a project.</b>
		<b>CO2</b>	<b>Students are trained to meet the requirements of the industry.</b>
		<b>CO3</b>	<b>Familiar with real time project work.</b>
		<b>CO4</b>	<b>Able to perform different levels of software testing.</b>
		<b>CO5</b>	<b>Able to perform feasibility analysis on different areas.</b>

**COMPLEMENTARY COURSE****COURSE OUTCOMES**

<b>NAME OF THE PROGRAMME:</b>			
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>COURSE OUTCOMES</b>	
<b>SEMESTER 1</b>			
<b>MM1CMT03</b>	<b>DISCRETE MATHEMATICS 1</b>	<b>CO1</b>	To familiarize sets and functions
		<b>CO2</b>	To know the concept of number theory and cryptosystem
		<b>CO3</b>	To understand logic operators and rules of inference
		<b>CO4</b>	To understand relation and its properties
		<b>CO5</b>	To understand sequences and summation
<b>ST1CMT01</b>	<b>BASIC STATISTICS AND INTRODUCTORY PROBABILITY THEORY</b>	<b>CO1</b>	To attain foundation of basic Statistics
		<b>CO2</b>	To familiarize the concepts of random variables - discrete and continuous and its properties
		<b>CO3</b>	To understand the concepts of Central Tendency, Dispersion, Skewness, Kurtosis
		<b>CO4</b>	To understand graphical representation histogram, frequency polygon, frequency curve, ogives and stem and leaf chart
		<b>CO5</b>	To understand Measures of Dispersion -Range, Quartile Deviation, Mean Deviation, Standard Deviation, Coefficient of Variation and Box Plot
<b>SEMESTER 2</b>			
<b>MM2CMT03</b>	<b>DISCRETE MATHEMATICS 2</b>	<b>CO1</b>	To familiarize the basic concepts of graph and graph models

		CO2	To understand the ideas of trees and their properties
		CO3	To know the concept of Boolean functions
		CO4	To understand Symmetric, Skew-symmetric, Conjugate, Hermitian, Skew-hermitian matrices
		CO5	To learn how to determine rank by Row Canonical form and Normal form
<b>SEMESTER 3</b>			
ST3CMT02	ADVANCED STATISTICAL METHODS	CO1	To understand probability distributions (discrete/continuous) such as Uniform, Bernoulli, Binomial, poisson, Normal distributions and its properties
		CO2	To understand the concepts of Estimation, Estimators and Estimate
		CO3	To know large and small sample tests
		CO4	To understand the concepts of Statistical hypotheses, Simple and composite hypotheses. Null and Alternate hypothesis
		CO5	To learn Methods of estimation-method of moments and method of maximum likelihood.
<b>SEMESTER 4</b>			
MM4CMT03	OPERATIONS RESEARCH	CO1	To understand the mathematical formulation of a LPP
		CO2	To identify the Transportation Problem and formulate it as an LPP and hence solve the problem
		CO3	To familiarize with the concept of Game Theory
		CO4	To study transportation and assignment problems
		CO5	To study about two-person zero sum games

**OPEN COURSE****COURSE OUTCOMES**

<b>NAME OF THE PROGRAMME:</b>			
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>COURSE OUTCOMES</b>	
<b>SEMESTER 5</b>			
<b>C A 5 O P T 02</b>	<b>COMPUTER FUNDAMENTALS, INTERNET &amp; MSOFFICE</b>	<b>CO1</b>	To give basic knowledge about the computer system
		<b>CO2</b>	To give knowledge about computer hardware and computer software.
		<b>CO3</b>	To familiarize students with the importance of operating system and networking
		<b>CO4</b>	To familiarize students with the use of the Internet and E-mail.
		<b>CO5</b>	To familiarize students with the use of MS Office-MS Word, MS Excel & MS PowerPoint.

**OPTIONAL COURSE****COURSE OUTCOMES**

<b>NAME OF THE PROGRAMME: BCA</b>			
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>COURSE OUTCOMES</b>	
<b>SEMESTER 6</b>			
<b>CA6PET01</b>	<b>Data Mining</b>	<b>CO1</b>	Able to Understand what Is Data Mining , what kinds of data can be mined.
		<b>CO2</b>	Able to understand techniques for discovering interesting patterns from data
		<b>CO3</b>	To fully understand standard data mining methods and techniques



			such as association rules and classification.
		CO4	Able to understand the various clustering methods
		CO5	Students will able to understand various mining techniques

**COMMON COURSE**

**ENGLISH**

NAME OF THE PROGRAMME	COURSE CODE	COURSE TITLE	COURSE OUTCOMES	
			<b>SEMESTER 1</b>	
<b>BCA</b>	<b>EN1CCT01</b>	<b>FINE TUNE YOUR ENGLISH</b>	<b>CO1</b>	Student will confidently use English in both written and spoken forms.
			<b>CO2</b>	Use English for formal communication effectively.
			<b>CO3</b>	Develop communicative skills effectively.
			<b>CO4</b>	Improve their knowledge in the structure of grammar for effective, concise and grammatically correct language uses.
			<b>CO5</b>	Generate simple sentences containing learned vocabulary and appropriate grammatical structures

	<b>SEMESTER 2</b>			
<b>BCA</b>	<b>EN2CCTC03</b>	<b>ISSUES THAT MATTER</b>	<b>CO1</b>	<b>Student will identify the major contemporary issues.</b>
			<b>CO2</b>	<b>Respond rationally and positively to the issues raised.</b>
			<b>CO3</b>	<b>Internalise the values imparted through the selections.</b>
			<b>CO4</b>	<b>Evaluate the consequences of personal, lifestyle choices on ecological/humanit arian crises.</b>
			<b>CO5</b>	<b>Make informed, sustainable choices and decisions in everyday life.</b>