ST. JOSEPH'S COLLEGE, DEVAGIRI, CALICUT
(AUTONOMOUS)

UNDER GRADUATE DEGREE PROGRAMME

ST. JOSEPH'S CHOICE BASED CREDIT SEMESTER SYSTEM (SJCBCSSUG)

BACHELOR OF COMPUTER APPLICATION (BCA)
(CORE, OPEN & COMPLEMENTARY COURSES)

Course Outcome
(2019Admn Onwards)

COURSE OUTCOMES
Core Courses

SEMESTER I
GBCA1B01T – COMPUTER FUNDAMENTALS & HTML

Credits: 3
Contact Hours: 64 Hrs (2L+2P Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To equip the students with fundamentals of Computer
CO2	To learn the basics of Computer organization
CO3	To equip the students to write algorithm and draw flow chart for solving simple problems
CO4	To learn the basics of Internet and webpage design

SEMESTER II
GBCA2B02T – PROBLEM SOLVING USING C

Credits: 3
Contact Hours: 64 Hrs (2L+2P Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
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

SEMESTER II
GBCA2B03P - PROGRAMMING LABORATORY I: HTML & PROGRAMMING IN C
(Lab Exam of 1st & 2nd Semester)

Credits: 4
Course Evaluation: 100 (Internal 20 & External 80)

COs	COURSE OUTCOMES
CO1	To learn the basics of web designing
CO2	To make the students learn programming environments.
CO3	To practice procedural programming concepts.
CO4	To make the students equipped to solve mathematical or scientific problems using C

SEMESTER III
GBCA3B04T – DATA STRUCTURES USING C

Credits: 3
Contact Hours: 112 Hrs (3L + 4P Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To introduce the concept of data structures
CO2	To make the students aware of various data structures
CO3	To equip the students to implement fundamental data structures
CO4	Basic knowledge of computers, data structures and programming

SEMESTER IV
GBCA4B05T – DATABASE MANAGEMENT SYSTEM AND RDBMS

Credits: 3
Contact Hours: 112 Hrs (3L + 4P Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To learn the basics of RDBMS
CO2	To learn the concepts of database manipulation using SQL
CO3	To study PL/SQL language
CO4	Basic knowledge of computers, data structures and programming
CO5	To learn the basic principles of database and database design

SEMESTER III & IV
GBCA4B06P – PROGRAMMING LABORATORY II: DATA STRUCTURES AND RDBMS
(Lab Exam of 3rd and 4th Semester)

Credits: 4
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To make the students solve mathematical or scientific problems using C
CO2	To learn how to implement various data structures.
CO3	To provide opportunity to students to use data structures to solve real life problems.
CO4	Knowledge in operating computer.
CO5	Theoretical knowledge in Data structures.
CO6	Knowledge in Database

SEMESTER V
GBCA5B07T – COMPUTER ORGANIZATION AND ARCHITECTURE

Credits: 3
Contact Hours: 64 Hrs (4L Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To learn logic gates, combinational circuits and sequential circuits
CO2	To learn basics of computer organization and architecture

SEMESTER V
GBCA5B08T – JAVA PROGRAMMING

Credits: 3
Contact Hours: 96 Hrs (3L + 3P Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To review on concept of OOP.
CO2	To learn Java Programming Environments.
CO3	To practice programming in Java.
CO4	To learn GUI Application development in JAVA

SEMESTER V
GBCA5B09T – WEB PROGRAMMING USING PHP

Credits: 3
Contact Hours: 96 Hrs (3L + 3P Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To review on concept of OOP.

CO2	To learn Java Programming Environments.
CO3	To practice programming in Java.
CO4	To learn GUI Application development in JAVA.

SEMESTER V
GBCA5B10T – PRINCIPLES OF SOFTWARE ENGINEERING

Credits: 3
Contact Hours: 64 Hrs (4L Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To learn engineering practices in Software development.
CO2	To learn various software development methodologies and practices.
CO3	To learn and study various Evaluation methods in Software Development.

SEMESTER VI
GBCA6B11T- ANDROID PROGRAMMING

Credits: 3
Contact Hours: 112 Hrs (4L + 3P Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To have a review on concept of Android programming.
CO2	To learn Android Programming Environments.
CO3	To practice programming in Android.
CO4	To learn GUI Application development in Android platform with XML
CO5	To get Knowledge in OO & Java Programming.

SEMESTER VI
GBCA6B12T - OPERATING SYSTEMS

Credits: 3
Contact Hours: 112 Hrs (4L + 3P Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To learn objectives & functions of Operating Systems.
CO2	To understand processes and its lifecycle.
CO3	To learn and understand various Memory and Scheduling Algorithms.
CO4	To have an overall idea about the latest developments in Operating Systems
CO5	To get Knowledge in Data structures

SEMESTER VI
GBCA6B13T - COMPUTER NETWORKS

Credits: 3
Contact Hours: 80 Hrs (5L Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To learn about transmissions in Computer Networks.
CO2	To learn various Protocols used in Communication.
CO3	To have a general idea on Network Administration
CO4	To learn about transmissions in Computer Networks.

GBCA6B14P - PROGRAMMING LABORATORY III: JAVA AND PHP PROGRAMMING
(Lab Exam of Vth Semester)

Credits: 4
Course Evaluation: 100 (Internal 20 & External 80)

COs	COURSE OUTCOMES
CO1	To practice Java programming.
CO2	To practice client side and server side scripting.
CO3	To practice PHP Programming.
CO4	To practice developing dynamic websites.
CO5	To practice how to interact with databases through PHP.

SEMESTER VI

GBCA6B15P - PROGRAMMING LABORATORY IV: ANDROID AND LINUX SHELL PROGRAMMING

Credits: 4
Contact Hours: 96 Hrs (6 P Hrs/Week)
Course Evaluation: 100 (Internal 20 & External 80)

COs	COURSE OUTCOMES
CO1	To practice Android programming.
CO2	To practice user interface applications.
CO3	To develop mobile application.
CO4	To practice shell programming
CO5	Theoretical knowledge in Android programming.
CO6	Theoretical knowledge of Shell Programming.

GBCA6B16D - INDUSTRIAL VISIT & PROJECT WORK

Credits: 3
Contact Hours: 64 Hrs (2P in V Sem & 2P in VI Sem Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To practice programming skill
CO2	To practice user interface applications.
CO3	To provide practical knowledge on software development process
CO4	Basic programming and system development knowledge

Common Courses

SEMESTER III
GBCS3A01T - PYTHON PROGRAMMING

Credits: 4
Contact Hours: 64 Hrs (4 Hrs/Week)
Course Evaluation: 100 (Internal 20 & External 80)

COs	COURSE OUTCOMES
CO1	Understand various statements, data types and functions in Python
CO2	Develop programs in Python programming language
CO3	Understand the basics of Object oriented programming using Python
CO4	To learn basics of Python programming
CO5	To learn decision making, looping and functions in Python

SEMESTER III
GBCS3A02T– DATA COMMUNICATION AND OPTICAL FIBERS

Credits: 4
Contact Hours: 64 Hrs (4 Hrs/Week)
Course Evaluation: 100 (Internal 20 & External 80)

COs	COURSE OUTCOMES
CO1	To introduce the concept of data communication
CO2	Understand various types of communication
CO3	To equip the students to implement communication techniques.

SEMESTER IV
GBCS4A03T – MICROPROCESSORS ARCHITECTURE AND PROGRAMMING

Credits: 4
Contact Hours: 64 Hrs (4T Hrs/Week)
Course Evaluation: 100 (Internal 20 & External 80)

COs	COURSE OUTCOMES
CO1	To understand internal details of Microprocessor.
CO2	To learn architecture of 8085Microprocessor
CO3	To learn instruction set of 8085Microprocessor
CO4	To learn how to program a Microprocessor

GBCS4A04T – SENSORS AND TRANSDUCERS

Credits: 4
Contact Hours: 64 Hrs (4T Hrs/Week)
Course Evaluation: 100 (Internal 20 & External 80)

COs	COURSE OUTCOMES
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

Electives

SEMESTER VI
GBCA6E01T -SYSTEM SOFTWARE

Credits: 3
Contact Hours: 64 Hrs (4 Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To build fundamental knowledge in system software.
CO2	To learn functions of various system software.
CO3	To learn specifically learn compilation process of a program.

SEMESTER VI
GBCA6E02T - MACHINE LEARNING

Credits: 3
Contact Hours: 64 Hrs (4 Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To familiarize with the basic concepts of Linear Algebra, Probability Theory for Machine Learning.
CO2	Introduce Machine Learning to the graduates and enable them think more scientifically
CO3	The students will be able to understand machine learning concepts
CO4	They also get the essential mathematical and statistical foundations of machine learning

SEMESTER VI
GBCA6E03T- SOFTWARE TESTING & QUALITY ASSURANCE

Credits: 3
Contact Hours: 64 Hrs (4 Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To familiarize with the basic concepts of testing
CO2	Introduce various testing tools
CO3	The students will be able to understand testing concepts

SEMESTER VI
GBCA6E04T - TECHNICAL WRITING

Credits: 3
Contact Hours: 64 Hrs (4 Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To familiarize with the basic concepts of technical writing
CO2	Basic communication skills in English
CO3	The students will be able to Acquire the skills and knowledge for professional technical communication, web content writing
CO4	Develop soft skill development and search engine optimization

SEMESTER VI
GBCA6E05T - FUNDAMENTALS OF LIFE SKILL EDUCATION

Credits: 3
Contact Hours: 64 Hrs (4 Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	Develop intra-personal and inter-personal skills, critical thinking, decision making and communication skills
CO2	Get an insight to career planning and development
CO3	Establish self-management and help to maintain work life balance

Complimentary Courses

SEMESTER I

GBCA1C01T – MATHEMATICAL FOUNDATION FOR COMPUTER APPLICATIONS

Credits: 3
Contact Hours: 64 Hrs (4 Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To learn the basic principles of linear algebra and vectors.
CO2	To learn the basic principles of differential and integral Calculus.
CO3	To learn mathematical modelling using ordinary and partial equations
CO4	To apply the acquired basic knowledge of matrix and vectors. Basic knowledge of differentiation and integration needed for designing and solving problems.

SEMESTER I
GBCA1C02T – DISCRETE MATHEMATICS

Credits: 3
Contact Hours: 64 Hrs (4 Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To learn mathematical logic and Boolean algebra.
CO2	Ability to apply mathematical logic to solve problems.
CO3	Understand sets, relations, functions and discrete structures
CO4	Able to use logical notations to define and reason about fundamental mathematical concepts such as sets relations and functions
CO5	Able to model and solve real world problems using graphs and trees

SEMESTER II
GBCA2C03T – FINANCIAL AND MANAGEMENT ACCOUNTING

Credits: 3
Contact Hours: 64 Hrs (4 Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To get a general introduction on accounting and its general applications.
CO2	To get an understanding on various tools for financial statement analysis.
CO3	To get an 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

SEMESTER II
GBCA2C04T- OPERATIONS RESEARCH

Credits: 3
Contact Hours: 64 Hrs (4 Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To get a general introduction in solving linear programming problems.
CO2	To get a general understanding of network analysis technique.
CO3	To get a general understanding of different mathematical models.
CO4	To Identify and develop operational research models from the verbal description of the real system
CO5	To Understand the mathematical tools that are needed to solve optimisation problems
CO6	To analyse the results and propose recommendations in language understandable to the decision-making processes

SEMESTER III
GBCA3C05T- COMPUTER ORIENTED NUMERICAL & STATISTICAL METHODS

Credits: 3
Contact Hours: 80 Hrs (5 Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To learn floating point arithmetic
CO2	Learning to solve linear equations.
CO3	To learn numerical differentiation and integration.
CO4	To learn the basics of statistics and probability theory

SEMESTER III
GBCA3C06T –THEORY OF COMPUTATION

Credits: 3
Contact Hours: 80 Hrs (5 Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To get a general introduction to the theory of Computer Science
CO2	To get a general understanding on different languages, grammar and automata
CO3	Basic knowledge in discrete structures and graph theory.

SEMESTER IV
GBCA4C07T – E-COMMERCE

Credits: 3
Contact Hours: 80 Hrs (5 Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To get a general introduction of the Electronic Commerce framework.
CO2	To get a general understanding on the various electronic payment system.

CO3	To get a general understanding on the Internal information systems.
CO4	To get a general understanding on the new age information
CO5	To get a Basic knowledge of Commerce

SEMESTER IV
GBCA4C08T – COMPUTER GRAPHICS

Credits: 3
Contact Hours: 80 Hrs (5 Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To learn the basics of Computer Graphics
CO2	Basic knowledge in Mathematics and Computer fundamentals

Open Courses

SEMESTER V
GBCA5D01T – INTRODUCTION TO COMPUTERS AND OFFICE AUTOMATION

Credits: 3
Contact Hours: 48 Hrs (3T Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To learn Office Automation.
CO2	Basic knowledge in Computer & Internet
CO3	To learn about application software

GBCA5D02T – WEB DESIGNING

Credits: 3
Contact Hours: 48 Hrs (3T Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To learn Web Designing.
CO2	Basic knowledge in Computer & Internet
CO3	To learn about web designing tools

GBCA5D03T – INTRODUCTION TO PROBLEM SOLVING AND C PROGRAMMING

Credits: 3
Contact Hours: 48 Hrs (3T Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To introduce fundamental principles of Problem Solving aspects.
CO2	To learn the concept of programming.
CO3	To learn C language.

GBCA5D04T – INTRODUCTION TO DATA ANALYSIS USING SPREAD SHEET

Credits: 3
Contact Hours: 48 Hrs (3T Hrs/Week)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	To introduce fundamental principles spread sheet
CO2	To introduce the importance of software tools.
CO3	To learn the Analysis using Spread sheets.