SHRI DHARMASTHALA MANJUNATHESHWARA
COLLEGE OF BUSINESS MANAGEMENT
MANGALURU – 575 003 (DAKSHINA KANNADA)
Office : 0824-2494186
Principal : 0824-2496980
NAAC Reaccredited (2023)
with 'A' Grade
Fax : 0824-2494186
Email : sdmcbm@sdmcbm.ac.in
Website : www.sdm.ac.in

BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)

COURSE OUTCOMES

STATE EDUCATION POLICY (SEP)

(2024 Batch onwards)

COURSE OUTCOMES (COs)
FIRST SEMESTER

Semester	**I SEMESTER**
Subject	**ENGLISH**
Code	**BCAENLS101**
Learning Objectives	Creative and critical response to literature in light of cultural values and literary history.
Learning Outcomes	**CO1:** To enable students to understand and utilize the English language in various forms (speaking, listening, reading, writing) across different contexts, including everyday conversations, academic situations, and professional settings, by developing their vocabulary, grammar, pronunciation, and comprehension skills to effectively communicate in English.

Semester	**I SEMESTER**
Subject	**HINDI**
Code	**BCAHDLS101**
Learning Objectives	भाषा विकास, सांकृतिक ज्ञान और मूल्यों का संचार
Learning Outcomes	**CO1:** भाषा और तकनीक के मेल को समझना **CO2:** नैतिक मूल्यों के विज्ञान से सम्बन्ध **CO3:** मानव जीवन की विशिष्टता को समझना

Semester	**I SEMESTER**
Subject	**KANNADA**
Code	**BCAKALS101**
Learning Objectives	• ಕಂಪ್ಯೂಟರ್ ಯುಗದಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಮಾನವೀಯ ಸಂವೇದನೆಯನ್ನು ಹುಟ್ಟು ಹಾಕಲು ಭಾಷಾ ಭೋದನೆಯು ಅಗತ್ಯ • ಮಾಧ್ಯಮದ ಜೊತೆಗೆ ಸರ್ವತೋಮುಖ ಬೆಳವಣಿಗೆಗೆ ಭಾಷೆ ಸೋಪಾನ
Learning Outcomes	**CO1:** ಕಂಪ್ಯೂಟರ್ ಯುಗದಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಸಾಹಿತ್ಯದ ಅಭಿರುಚಿ ಮೂಡಿಸಿ ಜೀವನ ಯಾಂತ್ರಿಕವಾಗದಿರಲು ಭಾಷೆ ಅತ್ಯಗತ್ಯ **CO2:** ಭಾಷೆಯ ಮೂಲಕಕಲೆ, ಸಾಹಿತ್ಯ, ಸಂಸ್ಕೃತಿಯ ಕಲಿಕೆ ಸಾಧ್ಯ.

Semester	**I SEMESTER**
Subject	**FUNDAMENTALS OF COMPUTERS**
Code	**BCACACS101**
Learning Objectives	● To impart knowledge about the evolution of computers, classification, various peripherals of computers, types of software's etc. ● To introduce the number system and Boolean algebra. ● To enable the students to understand the design components of a digital subsystem that required for realizing the various components
Learning Outcomes	**CO1:** Understand the fundamentals of computer system **CO2:** Identify different components within the computer system **CO3:** Understand different types of input and output devices **CO4:** Demonstrate the working concepts of different devices connected to computers. **CO5:** Explain different generations of programming languages and their significance. **CO6:** Understand the use of Word processing, Spreadsheet, Presentation and Database (Design database, insert records and querying in ACCESS) application.

Semester	**I SEMESTER**
Subject	**PROGRAMMING IN C**
Code	**BCACACS102**
Learning Objectives	• Designed to provide complete knowledge of C language. • Students will be able to develop logic which will help them to create programs, applications in C. Also, by learning the basic programming constructs they can easily switch over to any other language in future.
Learning Outcomes	After completing this course satisfactorily, a student will be able to: **CO1:** Confidently operate Desktop Computers to carry out computational tasks **CO2:** Understand working of Hardware and Software and the importance of operating systems **CO3:** Understand programming languages, number systems, peripheral devices, networking, multimedia and internet concepts **CO4:** Read, understand and trace the execution of programs written in C language **CO5:** Write the C code for a given problem **CO6:** Perform input and output operations using programs in C

Semester	**I SEMESTER**
Subject	**DISCRETE MATHEMATICS FOR COMPUTER APPLICATIONS**
Code	**BCACACS103**
Learning Objectives	To impart knowledge on the various applications of Discrete probability. To also understand the applications in Modelling Computation.
Learning Outcomes	**CO1:** Study and solve problems related to connectives, predicates and quantifiers under different situations. **CO2:** Understand the basic concepts of Discrete Probability **CO3:** To develop the knowledge about derivatives and know various applications of differentiation. **CO4:** Understand the Applications of Discrete Mathematics in Modelling Computation. **CO5:** Understand the basic concepts of Mathematical reasoning, set and functions

Semester	**I SEMESTER**
Subject	**INFORMATION TECHNOLOGY LAB**
Code	**BCACAPS104**
Learning Objectives	● To learn MS Office Applications. ● To learn document creation in MS Word, MS Excel, MS PowerPoint and MS Access.
Learning Outcomes	**CO1:** Compare and contrast various types of operating systems **CO2:** Explain the purpose of office automation **CO3:** Describe how information is stored and retrieved in/from computer memory **CO4:** Know about various types of office automation software and their applications **CO5:** Create document using word processing software **CO6:** Design presentation using presentation software **CO7:** Create worksheets using spreadsheet software **CO8:** Store and retrieve data in/from database management applications.

Semester	**I SEMESTER**
Subject	**C PROGRAMMING LAB**
Code	**BCACAPS105**
Learning Objectives	To learn the programming logic for problems with decision making, looping, arrays, structures and pointers.
Learning Outcomes	Upon the completion of this course, the students will be able to write programs with: **CO1:** Simple logic involving if, switch, for and while loops. **CO2:** Single- and two-dimensional arrays. **CO3:** User defined and recursive functions. **CO4:** Pointer concepts. **CO5:** Structures and Unions.

Semester	**I SEMESTER**
Subject	**CONSTITUTIONAL VALUES**
Code	**COMCOVS101**
Learning Objectives	● To equip with comprehensive understanding the principles and their relevance in daily life ● To understand the basic fundamental rights and duties applicable in daily life
Learning Outcomes	**CO1:** Students are equipped with democratic values, critical thinking skills and civic engagement **CO2:** Students can engage in organising and promoting social changes by strengthening their understanding of constitutional values

SHRI DHARMASTHALA MANJUNATHESHWARA
COLLEGE OF BUSINESS MANAGEMENT
MANGALURU – 575 003 (DAKSHINA KANNADA)

Office : 0824-2494186
Principal : 0824-2496980

NAAC Reaccredited (2023)
with 'A' Grade

Fax : 0824-2494186
Email : sdmcbm@sdmcbm.ac.in
Website : www.sdm.ac.in

BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)

COURSE OUTCOMES

STATE EDUCATION POLICY (SEP)

(2024 Batch onwards)

COURSE OUTCOMES (COs)
SECOND SEMESTER

Semester	**II SEMESTER**
Subject	**ENGLISH**
Code	**BCAENLS201**
Learning Objectives	To enable students to learn and comprehend the written and spoken form of English Language.
Learning Outcomes	**CO1:** To enable the learner to communicate effectively and appropriately in real life situations.

Semester	**II SEMESTER**
Subject	**HINDI**
Code	**BCAHDLS201**
Learning Objectives	भावों की अभिव्यक्ति
Learning Outcomes	**CO1:** भाषा और तकनीकी के मेल को समझना **CO2:** मानव जीवन की विशिष्टता को समझना

Semester	**II SEMESTER**
Subject	**KANNADA**
Code	**BCAKALS201**
Learning Objectives	ಗಣಕ ವಿಜ್ಞಾನದ ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಸಾಹಿತ್ಯದ ಅಭಿರುಚಿ ಮೂಡಿಸುವ ಉದ್ದೇಶ
Learning Outcomes	**CO1:** ಕಂಪ್ಯೂಟರ್ ಯುಗದಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳು ಯಾಂತ್ರಿಕವಾಗಿರದೆ ಭಾಷೆಯ ಕಾರಣ ಕಲೆ, ಸಾಹಿತ್ಯ, ಸಂಸ್ಕೃತಿಯ ಕಲಿಕೆಯಿಂದ ಇಂದಿನ ಅಗತ್ಯಕ್ಕೆ ತಮ್ಮನ್ನು ತೊಡಗಿಸಿಕೊಳ್ಳುತ್ತಾರೆ. **CO2:** ಭಾಷಾ ಕಲಿಕೆಯಿಂದ ಮಾನವೀಯ ಸಂವೇದನೆಯನ್ನು ಬೆಳೆಸಿಕೊಳ್ಳುತ್ತಾರೆ.

Semester	**II SEMESTER**
Subject	**DATA STRUCTURES**
Code	**BCACACS201**
Learning Objectives	**1.** To choose the appropriate data structure and algorithm design method for a specified application. **2.** To learn the systematic way of solving problems, including various methods of organizing large amounts of data. **3.** To implement linear and non-linear data structures such as arrays, linked lists, stacks, queues, trees, and graphs. **4.** To understand and apply algorithmic techniques such as recursion, searching, and sorting for problem-solving. **5.** To use dynamic memory management functions effectively in data structure implementation.
Learning Outcomes	**CO1:** To describe the usage of various data structures such as arrays, linked lists, stacks, queues, trees, and graphs. **CO2:** To choose the appropriate data structure to solve a programming problem efficiently. **CO3:** To demonstrate various methods of organizing and accessing large volumes of data. **CO4:** To implement sorting, searching, and recursive techniques in program design. **CO5:** To apply suitable memory management techniques in dynamic data structure operations.

Semester	**II SEMESTER**
Subject	**OBJECT ORIENTED PROGRAMMING USING JAVA**
Code	**BCACACS202**
Learning Objectives	Students will learn to: **1.** Describe the fundamental features of the Java programming language and explain the architecture and functioning of the Java Virtual Machine (JVM). **2.** Develop Java programs using basic data types, control flow constructs (such as loops and conditionals), and demonstrate how type casting is performed. **3.** Identify classes, objects, class members, and relationships, and apply object-oriented programming concepts such as polymorphism and inheritance. **4.** Implement Java programs using interfaces and threads, and explain the benefits of Java's exception handling mechanism compared to other programming languages. **5.** Design and create Java applications that feature Graphical User Interfaces (GUIs), incorporate event-driven programming, and perform file handling operations.
Learning Outcomes	After the successful completion of the course, the student will be able to: **CO1:** Understand the features of Java and the architecture of JVM **CO2:** Write, compile, and execute Java programs that may include basic data types and control flow constructs and how type casting is done **CO3:** Identify classes, objects, members of a class and relationships among them needed for a specific problem and demonstrate the concepts of polymorphism and inheritance **CO4:** The students will be able to demonstrate programs based on interfaces and threads and explain the benefits of JAVA's Exceptional handling mechanism compared to other Programming Language **CO5:** Write, compile, execute Java programs that include GUIs and event driven programming and also programs based on files

Semester	**II SEMESTER**
Subject	**COMPUTATIONAL MATHEMATICS**
Code	**BCACACS203**
Learning Objectives	**1.** To develop a fundamental understanding of various numerical techniques used to solve mathematical problems that cannot be addressed analytically. **2.** To bridge the gap between theoretical mathematical concepts and their practical implementation using computer-based algorithms. **3.** To understand the sources of numerical errors, including truncation and round-off errors, and methods to minimize and analyze them. **4**. To apply numerical methods for solving real-life problems involving: o Solution of linear and non-linear equations o Interpolation and curve fitting o Numerical differentiation and integration o Solution of ordinary differential equations and partial differential equations.
Learning Outcomes	After the successful completion of the course, the student will be able to: **CO1:** Obtain an intuitive and working understanding of numerical methods for the basic problems of numerical analysis. **CO2:** Gain experience in the implementation of numerical methods using a computer. **CO3:** Trace error in these methods and need to analyse and predict it. **CO4:** Provide knowledge of various significant and fundamental concepts to inculcate in the students an adequate understanding of the application of Statistical Methods. **CO5:** Demonstrate the concepts of numerical methods used for different applications

Semester	**II SEMESTER**
Subject	**DATA STRUCTURES LAB**
Code	**BCACAPS204**
Learning Objectives	**1.** To implement and analyze various sorting algorithms such as selection, insertion, merge, and quick sort through hands-on programming. **2.** To understand recursion and apply it practically to solve problems like Tower of Hanoi and binary search. **3.** To apply stack and queue concepts by developing programs using both array and linked list representations. **4.** To develop and manipulate dynamic data structures such as dynamic arrays, singly linked lists, and binary search trees. **5.** To build logical and modular programs that perform common data operations like insertion, deletion, traversal, and expression evaluation.
Learning Outcomes	**CO1:** Students will be able to write programs that perform sorting using selection, insertion, merge, and quick sort techniques, and understand their step-by-step execution. **CO2:** Students will demonstrate recursive thinking in solving structured problems like Tower of Hanoi and binary search. **CO3:** Students will develop programs to implement and operate on stacks and queues using both static (array) and dynamic (linked list) structures. **CO4:** Students will implement data processing tasks like reversing strings, evaluating postfix expressions, and performing basic operations on linked lists and BSTs. **CO5:** Students will gain practical proficiency in dynamic memory handling, designing menu-driven programs, and debugging logical and structural errors in C-based implementations.

Semester	**II SEMESTER**
Subject	**OBJECT ORIENTED PROGRAMMING JAVA LAB**
Code	**BCACAPS205**
Learning Objectives	Students will learn to: **1.** Write, compile, and execute Java programs using basic syntax, control structures, and type casting. **2.** Apply object-oriented programming principles such as classes, objects, inheritance, and polymorphism to solve practical problems. **3.** Implement programs using interfaces and multithreading to demonstrate modularity and concurrency. **4.** Handle exceptions effectively using Java's exception handling mechanisms to build robust applications. **5.** Develop GUI-based applications with event handling, perform file operations, and test/debug programs for correctness and reliability.
Learning Outcomes	After successful completion of the Java practical sessions, students will be able to: **CO1:** Set up and use the Java development environment to write, compile, and run Java programs. **CO2:** Develop programs using Java's basic syntax, control structures, data types, and type casting techniques. **CO3:** Apply object-oriented programming concepts such as classes, objects, inheritance, and polymorphism in coding solutions. **CO4:** Implement advanced features like interfaces and multithreading for building modular and concurrent applications. **CO5:** Create applications with graphical user interfaces (GUIs), handle events, perform file operations, and manage exceptions effectively.

Semester	**II SEMESTER**
Subject	**ENVIRONMENTAL STUDIES**
Code	**COMEVSS201**
Learning Objectives	**1.** To make Students realize the importance of a healthy environment and understand the various aspects of ecosystem **2.** To enable students to grasp the significance and issues related to biodiversity and natural resources and way of conservation **3.** To raise awareness of environmental policies and conservation efforts and encourage public awareness and individual role in protecting the environment through sustainable practices
Learning Outcomes	**CO1:** Student will able to understand environmental significance **CO2:** Engage in conservation efforts, - Develop confidence and skills to actively participate in the conservation of water, soil and biodiversity.