MANGALORE UNIVERSITY

Bachelor of Science in Computer Science

Programme Outcomes

Programme Specific Outcomes

Course Objectives

Course Outcomes

Program Outcomes

Program Outcomes Students of all undergraduate general degree programs at the time of graduation will be able to

PO1: Critical Thinking: Make effective decisions (intellectual, organizational, and personal) with intellectual integrity to solve problems and/or achieve goals utilizing the knowledge and skills.

PO2: Effective Communication: Fully and without bias comprehend written and verbal communication and present a clear, coherent and independent exposition of the world by connecting meaningfully people, ideas, books, media and technology.

PO3: Social Interaction: Respect views of others, mediate disagreements and help reach conclusions in group settings.

PO4: Effective Citizenship: Demonstrate empathetic social concern and equity centred on national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO5: Ethics: Recognize different value systems including their own, understand the moral dimensions of their decisions, and accept responsibility for them.

PO6: Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.

PO7: Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context of socio-technological changes.

B.Sc Computer Science

Program Specific Outcomes

PSO1: explain and analyse standard computer science algorithms and describe theoretical aspects of various programming languages

PSO2: apply problem-solving skills to implement medium and large- scale programs using state of art programming languages

PSO3: describe the interactions between low-level hardware, operating systems, and applications

PSO4: demonstrate effective communication and organization as part of a team of software developers or researchers collaborating on a large computer program

Course Objectives and Course Outcomes

Course Name	Course Objectives	Course Outcomes
I Semester Digital Computer Fundamentals	**Students will learn:** • The concept of various components. • The concepts that underpin the disciplines of analog and digital electronic logic circuits. • Various Number system and Boolean algebra. • Design and implementation of combinational circuits. • Design and implementation of Sequential circuits. • Hardware description language.	**Upon successful completion of the course the student will able to** • Understand the concepts of various components to design stable analog circuits. • Represent numbers and perform arithmetic operations. • Minimize the Boolean expression using Boolean algebra and design it using logic gates. • Analyse and design combinational circuit. • Design and develop sequential circuits
Elective Papers Discipline Supportive Subject **E1:** Computer Network and Security	**Students will learn:** • basics of computer network • internet concepts • Information security and cyber security.	**Upon successful completion of the course the student will able to understand the** • Basics of components of Network and Internet. • Basics of Internet technology, such as http and the World Wide Web and internet applications. • Concepts of information security, cyber security and Overview of Emerging Technologies.
Elective Paper E2: Open Source Software	**Students will learn:** The concepts, strategies, and methodologies related to open source software development.	**Upon successful completion of the course the student will** • Familiar with open source software products and development tools currently available in the market. • Be able to utilize open source software for developing a variety of software applications, particularly Web

		applications.
II Semester Problem Solving using C Language	**Students will learn:** • The algorithms and flowcharts for solving a specific problem. • The programming skills using C programming language.	**Upon successful completion of the course the student will be able to:** • Write the algorithm and flowcharts to solve a problem. • Write the C programs for a particular problem.
Elective Papers Expanded Scope E1: Cloud Computing	**Students will learn:** The concept of cloud computing, its applications and architecture.	**Upon successful completion of the course the student will be able to:** • Know the concept of cloud computing, historical development of cloud computing, advantages and disadvantages of Cloud Computing. • Know the areas of Cloud applications and its architecture
Elective Paper E2: Data Mining with R	**Students will learn:** • the basic concepts of R: the data frame and data manipulation • Discover powerful tools for data preparation and data cleansing • Visually find patterns in data • to work with complex data sets and understand how to process data sets • Get to know how object-oriented programming is done in R • Explore graphs and the statistical measure in graphs	**Upon successful completion of the course the student will be able to:** • identify the characteristics of datasets • select and implement data mining techniques in R suitable for the applications under consideration. • recognize and implement various ways of selecting suitable model parameter for different machine learning techniques.
III Semester Data Structures	**Students will :** • Understand and remember algorithms and its analysis procedure. • Understand the concept of data structures like List, Stack, and Queues. • Able to design and implement various data structure algorithms. • Understand the various techniques for representation	**Upon successful completion of the course the student will be able to:** • Select appropriate data structures as applied to specified problem definition. • Implement operations like searching, insertion, and deletion, traversing mechanism etc. on various data structures.

	of the data in the real world. • Develop application using data structure algorithms.	• Students will be able to implement linear and Non-Linear data structures. • Implement appropriate sorting/searching technique for given problem. • Design advance data structure using Non Linear data structure.
Elective Papers: Skill Development course E1: System Administration and Maintenance	• To make the students to learn and understand the system administration tools of windows operating system. • To make the students to learn about Linux operating system	**Upon successful completion of the course the student will be able to:** • Install the windows operating systems, to setup network and to use the tools of control panel. • • be able to install and manage the Linux operating systems.
E2: Desktop Publishing	To make the students to learn and understand the Desktop publishing tools like Page Maker and CorelDraw.	**Upon successful completion of the course the student will be able to:** create and format the document using the PageMaker and CorelDraw.
IV Semester Operating Systems and LINUX	**Students will :** • Learn the basics of operating systems. • Learn the management of resources like processor, memory, device and information by operating system.	**Upon successful completion of the course the student will be able to:** • understand the concepts of operating system, resources of operating system • Understand the management of memory, processor and devices and files. • Understand Linux environment, commands and shell programming.
Elective Papers **Other Domain Subject** E1: Fundamentals of Information Technology	To make the students to learn and understand the basics of computer for its effective use in day to day life.	**Upon successful completion of the course the student will be able to:** • Know the functional units of computer, Input/output devices, and storage

		devices. • know the computer software, network, Internet usage and cyber security issues
Elective Paper E2: Office Automation Tools	To make the students to learn and understand the basics of windows operating systems and MS office tools.	**Upon successful completion of the course the student will be able to:** • use the computer with the knowledge of windows operating systems • use the MS office tools like Word, excel and PowerPoint.
V Semester DATABASE CONCEPTS AND ORACLE	**Students will :** • Learn the basics concepts of database systems. • Learn the oracle commands and PL/SQL programming	**Upon successful completion of the course the student will be able to:** • Understand the concepts of database, its models, relational model, relational algebra and design theory of relational database. • Create tables, joining the tables, writing SQL queries and writing PL/SQL programs.
Elective Stream-I E1: MICROPROCESSOR ARCHITECTURE AND 8086 PROGRAMMING	**Students will :** • Learn the basics concepts of microprocessors and structure of 8086 processor. • To learn the instructions of 8086 and write the 8086 programming.	**Upon successful completion of the course the student will be able to:** • Understand the architecture of 8086 processor, addressing modes. • Understand the directives and instructions of 8086, interrupts and its services. • Write the 8086 programs.
Elective E2: Web Development Using PHP	**Students will :** • Understand the usage of PHP and MySQL in web development. • Familiarize PHP language data types, logic controls, built-in and user-defined functions.	**Upon successful completion of the course the student will be able to:** • Design and publish static and dynamic web pages • Develop database application using PHP • Build a simple, yet functional web

	• develop database application using PHP • Build a simple, yet functional web application using PHP/MySQL.	application using PHP/MySQL.
VI Semester Object Oriented Programming with JAVA	To make the students • To learn the concepts of Object Oriented Programming. • To learn the Object oriented programming using Java.	**Upon successful completion of the course the student will be able to** • Understand the concepts of OOP and Java fundamentals. • Write the Java programs using the concepts of inheritance, interfaces, packages, multithreading and
Elective Papers E1: VISUAL BASIC.NET PROGRAMMING	To learn programming with graphical interface using object oriented concept.	**Upon successful completion of the course the student will be able to** Develop skill in VB.NET framework, tools, programming and connectivity with databases.
E2: Computer Graphics and Animation	To learn the concepts of Computer graphics and animation • To learn the Object oriented programming using Java.	**Upon successful completion of the course the student will be able to** • Understand the basic algorithms for line drawing, circle drawing. • Understand geometric transformation and its implementation. • Understand the concept of animation and multimedia.