A.S.D. GOVERNMENT DEGREE COLLEGE FOR WOMEN (A), KAKINADA

DEPARTMENT OF COMPUTER SCIENCE

B.Sc.(Computer Science)

PROGRAMME OUTCOMES

2024-2025

Students of Undergraduate Programmes (B. Sc, B. Com, BA) at the time of graduation will be able to:

PO1: **Critical Thinking:** Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

PO2: **Effective Communication:** Speak, read, write and listen clearly in person and through electronic media in English and in at least one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

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

PO4: **Ethics:** Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

PO5: **Effective Citizenship:** Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

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

PO7: **Problem solving skills:** Identify, formulate, and analyse complex problems, reaching substantiated conclusions by applying the knowledge and skills acquired during undergraduate study for the welfare of individuals and society.

PO8: **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO9: **Self-directed and Life-long Learning:** Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes.

PO10: **Higher Progression, Employability and Entrepreneurship:** Progress towards higher education / become potential workforce by enhancing employability through skill-based education / become good entrepreneurs.

PROGRAMME SPECIFIC OUTCOMES

PSO1: To understand the principles and working of computer systems and be able to apply computational knowledge and project development skills to provide innovative solutions.

PSO2: To design and develop computer programs and understand the structure and development methodologies of software systems.

PSO3: To apply their skills in the field of algorithms, web design, and data analytics.

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COURSE OUTCOMES

2024-2025

S.No	Admitted Batch	Year	Semester	Course Code	Title of the paper	Course Outcomes
1	2024-2025	I	I	BSCM24101	ESSENTIALS AND APPLICATIONS OF MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES	**CO1:**Apply critical thinking skills to solve complex problems involving complex numbers, trigonometric ratios, vectors, and statistical measures. **CO2:** Understand the basic principles and concepts underlying a broad range of fundamental areas of physics and to Connect their knowledge of physics to everyday situations **CO3:** Understand the basic principles and concepts underlying a broad range of fundamental areas of chemistry and to Connect their knowledge of chemistry to daily life. **CO4:** Examine the interplay and connections between mathematics, physics, and chemistry in various applications. **CO5:** Recognize how mathematical models and physical and chemical principles can be used to explain and predict phenomena in different contexts. **CO6:** To explore the history and evolution of the Internet and to gain an understanding of network security concepts, including threats, vulnerabilities, and countermeasures.

2	2024-2025	I	I	BSCM24102	ADVANCES IN MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES	**CO1:** Explore the applications of mathematics in various fields of physics and chemistry, to understand how mathematical concepts are used to model and solve real-world problems. **CO2:** To Explain the basic principles and concepts underlying a broad range of fundamental areas of physics and to Connect their knowledge of physics to everyday situations. Understand the different sources of renewable energy and their generation processes and advances in nanomaterials and their properties, with a focus on quantum dots. **CO3:** To study the emerging field of quantum communication and its potential applications. **CO4:** To gain an understanding of the principles of biophysics in studying biological systems. **CO5:** Explore the properties and applications of shape memory materials. Understand the principles and techniques used in computer-aided drug design and drug delivery systems, to understand the fabrication techniques and working principles of nanosensors. **CO6:** Explore the effects of chemical pollutants on ecosystems and human health. Understand the interplay and connections between mathematics, physics, and chemistry in various advanced applications. **CO7:** Recognize how mathematical models and physical and chemical principles can be used to explain and predict phenomena in different contexts. **CO8:** Understand and convert between different number systems, such as binary, octal, decimal, and hexadecimal.

3	2024-2025	I	II	CS24201	PROBLEM SOLVING IN C	**CO1:** Understand the working of a digital computer and Fundamental constructs of Programming **CO2:** Analyze and develop a solution to a given problem with suitable control structures **CO3:** Apply the derived data types in program solutions **CO4:**Use the 'C' language constructs in the right way **CO5:** Apply the Dynamic Memory Management for effective memory utilization
4	2024-2025	I	II	CS24202	DIGITAL LOGIC DESIGN	**CO1:** Understand how to Convert numbers from one radix to another radix and perform arithmetic operations. **CO2:** Simplify Boolean functions using Boolean algebra and k- maps **CO3:** Design adders and subtractors circuits. **CO4:** Design combinational logic circuits such as decoders, encoders, multiplexers and demultiplexers. **CO5:** Use flip flops to design registers and counters.
5	2023-2024	II	III	CS23301	OBJECT ORIENTED PROGRAMMING USING JAVA	**CO1:** Understand the basic concepts of Object-Oriented Programming and Java Program Constructs **CO2:** Implement classes and objects and analyze Inheritance and Dynamic Method Dispatch **CO3:** Demonstrate various classes in different packages and can design own packages **CO4:** Manage Exceptions and Apply Threads **CO5:** Create GUI screens along with event handling.
6	2023-2024	II	III	CS23302	DATA STRUCTURES USING C	**CO1:** Understand various Data Structures for data storage and processing. **CO2:** Realize Linked List Data Structure for various operations

						CO3: Analyze step by step and develop algorithms to solve real world problems by implementing Stacks, Queues data structures. **CO4:** Understand and implement various searching & sorting techniques. **CO5:** Understand the Non-Linear Data Structures such as Binary Trees and Graphs
7	2023-2024	II	III	CS23303	COMPUTER ORGANIZATION	**CO1:** Identify different types of instructions **CO2:** Differentiate between micro-programmed and hard-wired control units. **CO3:** Analyse the performance of hierarchical organization of memory. **CO4:** Summarize different data transfer techniques. **CO5:** Demonstrate arithmetic operations on fixed- and floating-point numbers and illustrate concepts of parallel processing.
8	2023-2024	II	III	CS23304	OPERATING SYSTEMS	**CO1:** Demonstrate knowledge and comprehension of operating system functions. **CO2:** Analyze different process scheduling algorithms and apply them to manage processes and threads effectively **CO3:** Create strategies to prevent, detect, and recover from deadlocks, and design solutions for inter-process communication and synchronization problems. **CO4:** Compare and contrast different memory allocation strategies and evaluate their effectiveness. **CO5:** Evaluate disk scheduling algorithms while implementing OS security measures.
9	2023-2024	II	IV	CS204307	DATABASE MANAGEMENT SYSTEMS	**CO1:** Differentiate between database systems and file based systems **CO2:** Design a database using ER model **CO3:** Use relational model in database design

						CO4: Use SQL commands for creating and manipulating data stored in databases. **CO5:** Write PL/SQL programs to work with databases.
10	2023-2024	II	IV	CS23402	OBJECT ORIENTED SOFTWARE ENGINEERING	**CO1:** Understand and apply the fundamental principles of Object-Oriented Programming (OOP) concepts and Unified Modelling Language (UML) basics, in the development of software solutions. **CO2:** Analyse and specify software requirements, develop use cases and scenarios, apply object- oriented analysis and design (OOAD) principles **CO3:** Familiar with the concept of test-driven development (TDD) and its practical implementation **CO4:** Analyse and Evaluate Software Maintenance and Evolution Strategies **CO5:** Apply Advanced Object-Oriented Software Engineering Concepts.
11	2023-2024	II	IV	CS23403	DATA COMMUNICATION AND COMPUTER NETWORKS	**CO1:** Understand and apply network applications, hardware, software, and reference models for network communication. **CO2:** Design and analyse data link layer protocols, multiple access protocols, and wireless LAN technologies. **CO3:** Design routing algorithms, congestion control algorithms, and evaluate network layer protocols for internetworking. **CO4:** Analyse transport service, transport protocols, and evaluate UDP and TCP in the internet.
12	2022-2023	III	V	CS205307-6A	WEB INTERFACE DESIGNING TECHNOLOGIES	**CO1:** Understand and appreciate the web architecture and services. **CO2:** Gain knowledge about various components of a website. **CO3:** Demonstrate skills regarding creation of a static website and an interface to dynamic website.

						CO4: Learn how to install word press and gain the knowledge of installing various plugins to use in their websites.
13	2022-2023	III	V	CS205308-7A	WEB APPLICATIONS DEVELOPMENT USING PHP & MYSQL	**CO1:** Write simple programs in PHP. **CO2:** Understand how to use regular expressions, handle exceptions, and validate data using PHP. **CO3:** Apply In-Built functions and Create User defined functions in PHP programming. **CO4:** Write PHP scripts to handle HTML forms. **CO5:** Write programs to create dynamic and interactive web based applications using PHP and MYSQL. **CO6:** Know how to use PHP with a MySQL database and can write database driven web pages
14	2022-2023	III	V		INTERNET OF THINGS	**CO1:** Appreciate the technology for IoT **CO2:** Understand various concepts, terminologies and architecture of IoT systems. **CO3:** Understand various applications of IoT **CO4:** Learn how to use various sensors and actuators for design of IoT. **CO5:** Learn how to connect various things to Internet. **CO6:** Learn the skills to develop simple IOT Devices.
15	2022-2023	III	V		APPLICATION DEVELOPMENT USING PYTHON	**CO1:** Understand and appreciate the web architecture and services. **CO2:** Examine Python syntax and semantics and be fluent in the use of Python flow control and functions. **CO3:** Demonstrate proficiency in handling Strings and File Systems. **CO4:** Create, run and manipulate Python Programs using core data structures like Lists, x Dictionaries and use Regular Expressions. **CO5:** Interpret the concepts of Object-Oriented Programming as used in Python.

						CO6: Apply concepts of Python programming in various fields related to IOT, Web Services and Databases in Python.
16	2022-2023	III	V		DATA SCIENCE	**CO1:** Develop relevant programming abilities. **CO2:** Demonstrate proficiency with statistical analysis of data. **CO3:** Develop the ability to build and assess data-based models. **CO4:** Demonstrate skill in data management **CO5:** Apply data science concepts and methods to solve problems in real-world contexts and will communicate these solutions effectively
17	2022-2023	III	V		PYTHON FOR DATA SCIENCE	**CO1:** Identify the need for data science and solve basic problems using Python built-in data types and their methods. **CO2:** Design an application with user-defined modules and packages using OOP concept **CO3:** Employ efficient storage and data operations using NumPy arrays. **CO4:** Apply powerful data manipulations using Pandas. **CO5:** Do data pre-processing and visualization using Pandas

N.N.S. Eswari
Signature of the HOD
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