UG-B.E (CS) 2022-Scheme COs

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING	
COURSE CODE	**BPOPS103/203-PRINCIPLES OF PROGRAMMING USING C**
CO1	Elucidate the basic architecture and functionalities of a computer and also recognize the hardware parts
CO2	Apply programming constructs of C language to solve the realworld problem
CO3	Explore user-defined data structures like arrays in implementing solutions to problems like searching and sorting
CO4	Explore user-defined data structures like structures, unions and pointers in implementing solutions
CO5	Design and Develop Solutions to problems using modular programming constructs using functions
COURSE CODE	**BPLCK105B/205B-INTRODUCTION TO PYTHONPROGRAMMING**
CO1	Demonstrate proficiency in handling loops and creation offunctions.
CO2	Identify the methods to create and manipulate lists, tuples anddictionaries.
CO3	Develop programs for string processing and file organization
CO4	Interpret the concepts of Object-Oriented Programming as used in Python.
COURSE CODE	**BCS302-DIGITAL DESIGN AND COMPUTERORGANIZATION**
CO1	Apply the K–Map techniques to simplify various Boolean expressions.
CO2	Design different types of combinational and sequential circuits along with Verilog programs.
CO3	Describe the fundamentals of machine instructions, addressing modes and Processor performance
CO4	Explain the approaches involved in achieving communication between processor and I/O devices
CO5	Analyze internal Organization of Memory and Impact of cache/Pipelining on Processor Performance.
COURSE CODE	**BCS303-OPERATING SYSTEMS**
CO1	Explain the structure and functionality of operating system
CO2	Apply appropriate CPU scheduling algorithms for the given problem.
CO3	Analyse the various techniques for process synchronization and deadlock handling.
CO4	Apply the various techniques for memory management
CO5	Explain file and secondary storage management strategies
CO6	Describe the need for information protection mechanisms.
COURSE CODE	**BCS304-DATA STRUCTURES AND APPLICATIONS**
CO1	Explain different data structures and their applications.
CO2	Apply Arrays, Stacks and Queue data structures to solve the given problems.
CO3	Use the concept of linked list in problem solving.
CO4	Develop solutions using trees and graphs to model the real-world problem.
CO5	Explain the advanced Data Structures concepts such as Hashing Techniques and Optimal Binary Search Trees.
COURSE CODE	**BCSL305-DATA STRUCTURES LABORATORY**
CO1	Analyze various linear and non-linear data structures
CO2	Demonstrate the working nature of different types of data structures and their applications
CO3	Use appropriate searching and sorting algorithms for the give scenario
CO4	Apply the appropriate data structure for solving real world problems
COURSE CODE	**BCS306A-OBJECT ORIENTED PROGRAMMING WITH JAVA**
CO1	Demonstrate proficiency in writing simple programs involving branching and looping structures.
CO2	Design a class involving data members and methods for the given scenario.
CO3	Apply the concepts of inheritance and interfaces in solving real world problems.
CO4	Use the concept of packages and exception handling in solving complex problem
CO5	Apply concepts of multithreading, autoboxing and enumerations in program development
COURSE CODE	**BCS306B-OBJECT ORIENTED PROGRAMMING with C++**
CO1	Illustrate the basic concepts of object-oriented programming.
CO2	Design appropriate classes for the given real world scenario.
CO3	Apply the knowledge of compile-time / run-time polymorphism to solve the given problem
CO4	Use the knowledge of inheritance for developing optimized solutions
CO5	Apply the concepts of templates and exception handling for the given problem
CO6	Use the concepts of input output streams for file operations
COURSE CODE	**BSCK307-SOCIAL Connect & Responsibility**
CO1	Communicate and connect to the surrounding.

CO2	Create a responsible connection with the society.
CO3	Involve in the community in general in which they work.
CO4	Notice the needs and problems of the community and involve them in problem –solving.
CO5	Develop among them a sense of social & civic responsibility & utilize their knowledge I finding practical solutions toindividual and community problems.
CO6	Develop competence required for group-living and sharing of responsibilities & gain skills in mobilizing community participation to acquire leadership qualities and democraticattitudes.
COURSE CODE	**BCS358A-DATA ANALYTICS WITH EXCEL**
CO1	Use advanced functions and productivity tools to assist in developing worksheets.
CO2	Manipulate data lists using Outline and PivotTables
CO3	Use Consolidation to summarize and report results from multiple worksheets.
CO4	Apply Macros and Auto filter to solve the given real world scenario.
COURSE CODE	**BCS358B-R PROGRAMMING**
CO1	Explain the fundamental syntax of R data types, expressions and the usage of the R-Studio IDE
CO2	Develop a program in R with programming constructs:conditionals, looping functions
CO3	Apply the list and data frame structure of the R programminglanguage.
CO4	Use visualization packages and file handlers for data analysis.
COURSE CODE	**BCS358C-PROJECT MANAGEMENT WITH GIT**
CO1	Use the basics commands related to git repository
CO2	Create and manage the branches
CO3	Apply commands related to Collaboration and Remote Repositories
CO4	Use the commands related to Git Tags, Releases and advanced git operations
CO5	Analyse and change the git history
COURSE CODE	**BCS358D-DATA VISUALIZATION WITH PYTHON**
CO1	Demonstrate the use of IDLE or PyCharm IDE to create Python Applications
CO2	. Use Python programming constructs to develop programs for solving real-world problems
CO3	Use Mat plot lib for drawing different Plots
CO4	Demonstrate working with Seaborn, Bokeh for visualization.
CO5	Use Plotly for drawing Time Series and Maps.