

COURSE OUTCOMES - 2022 SCHEME

3rd SEMESTER

Subject:	Mathematics for Computer Science		
Subject Code:	BCS301	NBA Code:	AD201
CO1	Explain the basic concepts of probability, random variables, probability distribution and apply suitable probability distribution models for the given scenario.		
CO2	Apply the notion of a discrete-time Markov chain and n-step transition probabilities to solve the given problem		
CO3	Use statistical methodology and tools in the engineering problem-solving process		
CO4	Compute the confidence intervals for the mean of the population		
CO5	Apply the ANOVA test related to engineering problems		

Subject:	Digital Design and Computer Organization		
Subject Code:	BCS302	NBA Code:	AD202
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.		

Subject:	Operating Systems		
Subject Code:	BCS303	NBA Code:	AD203
CO1	Explain the structure and functionality of operating system		
CO2	Apply appropriate CPU scheduling algorithms for the given problem		
CO3	Analyze the various techniques for process synchronization and deadlock handling		
CO4	Apply the various techniques for memory management		
CO5	Understand file systems and secondary storage structures and protection principle in operating systems.		

Subject:	Data Structures And Applications		
Subject Code:	BCS304	NBA Code:	AD204
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.		

Subject:	Data Structures Laboratory		
Subject Code:	BCSL305	NBA Code:	AD205
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		
CO5	Apply the advanced data structure concepts such as hashing techniques to solve real world problems.		

Subject:	Object Oriented Programming with JAVA		
Subject Code:	BCS306A	NBA Code:	AD206
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, auto boxing and enumerations in program development		

Subject:	Social Connect & Responsibility		
Subject Code:	BSCK307	NBA Code:	AD207
CO1	Develop effective communication skills to connect with the surrounding environment, communities, and cultural heritage during plantation and adoption activities.		
CO2	Foster a responsible and engaged relationship with society through the exploration of local history, heritage, and traditional crafts during the heritage walk and crafts corner activities.		
CO3	Demonstrate an understanding of organic farming practices, waste management techniques, and their impact on neighboring villages and campus environments.		
CO4	Investigate and promote water conservation practices through the documentation and analysis of current methods in surrounding villages and their implementation on campus.		
CO5	Engage in the exploration of local culinary practices, food traditions, and indigenous ingredients to appreciate and promote the cultural significance of food in the region.		

Subject:	Data Analytics with Excel		
Subject Code:	BCS358A	NBA Code:	AD208
CO1	Use advanced functions and Segregation functions to assist in developing worksheets.		
CO2	Use of productivity tools to develop a worksheets		
CO3	Manipulate data lists using Outline and PivotTables.		
CO4	Use Consolidation to summarise and report results from multiple worksheets.		
CO5	Apply Macros and Autofilter to solve the given real world scenario.		

Subject:	National Service Scheme (NSS)		
Subject Code:	BNSK359	NBA Code:	AD209
CO1	Understand the importance of his / her responsibilities towards society.		
CO2	Analyse the environmental and societal problems/issues and will be able to design solutions for the same.		
CO3	Evaluate the existing system and to propose practical solutions for the same for sustainable development.		
CO4	Implement government or self-driven projects effectively in the field.		
CO5	Develop capacity to meet emergencies and natural disasters & practice national integration and social harmony in general.		

Subject:	Physical Education (PE) (Sports and Athletics)		
Subject Code:	BPEK359	NBA Code:	AD210
CO1	Understand the fundamentals of concepts and skills of physical education, health, nutrition and fitness.		
CO2	Familiarization of health related exercises, sports for overall growth and development.		
CO3	Create a foundation for the professionals in physical education and sports.		
CO4	Participate in the competition at regional/state /national/international levels.		
CO5	Create consciousness among the students on health, fitness and wellness in developing and maintaining a healthy lifestyle.		

COURSE OUTCOMES - 2022 SCHEME

4th SEMESTER

Subject:	Analysis & Design of Algorithms		
Subject Code:	BCS401	NBA Code:	AD211
CO1	Apply asymptotic notational method to analyze the performance of the algorithms in terms of time complexity.		
CO2	Demonstrate divide & conquer approaches and decrease & conquer approaches to solve computational problems		
CO3	Make use of transform & conquer and dynamic programming design approaches to solve the given real world or complex computational problems.		
CO4	Apply greedy and input enhancement methods to solve graph & string based computational problems		
CO5	Analyze various classes (P, NP and NP Complete) of problems and Illustrate backtracking, branch & bound and approximation methods.		

Subject:	Artificial Intelligence		
Subject Code:	BAD402	NBA Code:	AD212
CO1	Apply knowledge of agent architecture, searching and reasoning techniques for different applications.		
CO2	Compare various Searching and Inferencing Techniques		
CO3	Develop knowledge base sentences using propositional logic and first order logic		
CO4	Describe the concepts of quantifying uncertainty.		
CO5	Use the concepts of Expert Systems to build applications.		

Subject:	Database Management System		
Subject Code:	BCS403	NBA Code:	AD213
CO1	Describe the basic elements of a relational database management system		
CO2	Design entity relationship for the given scenario.		
CO3	Analyze various normalization forms for the given application, and Apply various Structured Query Language (SQL) statements for database manipulation.		
CO4	Develop database applications for the given real world problem		
CO5	Understand the concepts related to NoSQL databases.		

Subject:	Analysis & Design of Algorithms Lab		
Subject Code:	BCSL404	NBA Code:	AD214
CO1	Develop programs to solve computational problems using suitable algorithm design strategy.		
CO2	Compare algorithm design strategies by developing equivalent programs and observing running times for analysis (Empirical).		
CO3	Make use of suitable integrated development tools to develop programs.		
CO4	Choose appropriate algorithm design techniques to develop solution to the computational and complex problems.		
CO5	Demonstrate and present the development of program, its execution and running time(s) and record the results/inferences.		

Subject:	Discrete Mathematical Structures		
Subject Code:	BCS405A	NBA Code:	AD215
CO1	Apply concepts of logical reasoning and mathematical proof techniques in proving theorems and statements.		
CO2	Demonstrate the application of discrete structures in different fields of computer science.		
CO3	Apply the basic concepts of relations, functions and partially ordered sets for computer representations.		
CO4	Solve problems involving recurrence relations and generating functions.		
CO5	Illustrate the fundamental principles of Algebraic structures with the problems related to computer science & engineering.		

Subject:	MongoDB		
Subject Code:	BDSL456B	NBA Code:	AD216
CO1	Execute MongoDB commands and queries		
CO2	Utilize MongoDB aggregation pipelines effectively		
CO3	Demonstrate the importance of query optimization		
CO4	Develop and implement aggregate pipelines for text search		
CO5	Apply advanced MongoDB query techniques		

Subject:	Biology For Engineers		
Subject Code:	BBOC407	NBA Code:	AD217
CO1	Elucidate the basic biological concepts such as cell biology, stem cells, biomolecules properties and key biomolecule function.		
CO2	Explore the application of biomolecules in biotechnology, medicine and industry.		
CO3	Understanding the anatomical knowledge to the design and development of bioengineering solution		
CO4	Understanding the natural material and mechanism for bio inspiration		
CO5	Discussing the impact of bioengineering on healthcare, sustainability and industry.		

Subject:	Universal human values course		
Subject Code:	BUHK408	NBA Code:	AD218
CO1	Students would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.		
CO2	Students would have better critical ability.		
CO3	Students would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society).		
CO4	It is hoped that students would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.		

Subject:	National Service Scheme (NSS)		
Subject Code:	BNSK459	NBA Code:	AD219
CO1	Understand the importance of his / her responsibilities towards society.		
CO2	Analyse the environmental and societal problems/issues and will be able to design solutions for the same.		
CO3	Evaluate the existing system and to propose practical solutions for the same for sustainable development.		
CO4	Implement government or self-driven projects effectively in the field.		
CO5	Develop capacity to meet emergencies and natural disasters & practice national integration and social harmony in general.		

Subject:	Physical Education (PE) (Sports and Athletics)		
Subject Code:	BPEK459	NBA Code:	AD220
CO1	Understand the ethics and moral values in sports and athletics.		
CO2	Perform in the selected sports or athletics of student's choice.		
CO3	Understand the roles and responsibilities of organization and administration of sports and games.		