

**DEPARTMENT OF ARTIFICIAL INTELLIGENCE & DATA SCIENCE**
**Course Outcomes-2022 Scheme**

S.No.	Subject Code	Course Code	Course Outcomes
1	BMATS101 Mathematics-I for Computer Science and Engineering stream	C101.1	Apply the knowledge of calculus to solve problems related to polar curves and learn the notion of partial differentiation to compute rate of change of multivariate functions
		C101.2	analyze the solution of linear and nonlinear ordinary differential equations
		C101.3	get acquainted and to apply modular arithmetic to computer algorithms
		C101.4	make use of matrix theory for solving the system of linear equations and compute eigenvalues and eigen vectors
		C101.5	familiarize with modern mathematical tools namely MATHEMATICA/MATLAB/ PYTHON/ SCILAB

S.No.	Subject Code	Course Code	Course Outcomes
2	BCHES102 Chemistry for CSE Stream	C102.1	Identify the terms and applications processes involved in scientific and engineering
		C102.2	Explain the phenomena of chemistry to describe the methods of engineering processes
		C102.3	Solve the problems in chemistry that are pertinent in engineering applications.
		C102.4	Apply the basic concepts of chemistry to explain the chemical properties and processes.
		C102.5	Analyze properties and multidisciplinary situations processes associated with chemical substances in multidisciplinary situations.

S.No.	Subject Code	Course Code	Course Outcomes
3	BCEDK103 Computer Aided Engineering Drawing	C103.1	Draw and communicate the objects with definite shape and dimensions
		C103.2	Recognize and Draw the shape and size of objects through different views
		C103.3	Develop the lateral surfaces of the object
		C103.4	Create a Drawing views using CAD software.
		C103.5	Identify the interdisciplinary engineering components or systems through its graphical representation.

S.No.	Subject Code	Course Code	Course Outcomes
4	BESCK104C Introduction to Electronics Engineering	C104.1	Develop the basic knowledge on construction operation and characteristics of electronic circuits encompassing amplifiers and power supplies
		C104.2	Develop proficient knowledge to analyze the operation of oscillators and operational amplifiers
		C104.3	Develop competence knowledge to construct basic digital circuit by make use of basic gate and it's function
		C104.4	Discuss the characteristics and technological advances of embedded systems
		C104.5	Construct the conceptual blocks for Basic communication system spanning from frequency Spectrum to various circuits involved

S.No.	Subject Code	Course Code	Course Outcomes
5	BPLCK105B Introduction to Python Programming	C105.1	Learn the syntax and semantics of the Python programming language.
		C105.2	Illustrate the process of structuring the data using lists, tuples
		C105.3	Appraise the need for working with various documents like Excel, PDF, Word and Others.
		C105.4	Demonstrate the use of built-in functions to navigate the file system
		C105.5	Implement the Object Oriented Programming concepts in Python.

S.No.	Subject Code	Course Code	Course Outcomes
6	BENCK106 Communicative English	C106.1	understand and apply the fundamentals of communication skills in their communication skills
		C106.2	identify the nuance of phonetics , intonation and enhance pronunciation skills
		C106.3	to impart basic english grammar and essentials of language skills as per presentation requirement
		C106.4	understand and use all types of english vocabulary and language proficiency
		C106.5	adapt the technique of information transfer through presentation

S.No.	Subject Code	Course Code	Course Outcomes
7	BICOK107 Indian Constitution	C107.1	Analyse the basic structure of Indian Constitution.
		C107.2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
		C107.3	Know about our Union Government, political structure & codes, procedures.
		C107.4	Understand our State Executive & Elections system of India
		C107.5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

S.No.	Subject Code	Course Code	Course Outcomes
8	BSFHK158 Scientific Foundations of Health	C108.1	To understand and analyse about Health and wellness (and its Beliefs) & It's balance for positive mindset.
		C108.2	Develop the healthy lifestyles for good health for their better future
		C108.3	Build a Healthy and caring relationships to meet the requirements of good/social/positive life.
		C108.4	To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future.
		C108.5	Prevent and fight against harmful diseases for good health through positive mindset.

S.No.	Subject Code	Course Code	Course Outcomes
9	BMATS201 Mathematics for CSE Stream-II	C109.1	Apply the concept of change of order of integration and variables to evaluate multiple integrals and their usage in computing area and volume.
		C109.2	Understand the applications of vector calculus refer to solenoidal, and irrotational vectors. Orthogonal curvilinear coordinates.
		C109.3	Demonstrate the idea of Linear dependence and independence of sets in the vector space, and linear transformation
		C109.4	Apply the knowledge of numerical methods in analyzing the discrete data and solving the physical and engineering problems.
		C109.5	Get familiarize with modern mathematical tools namely MATHEMATICA/ MATLAB /PYTHON/ SCILAB

S.No.	Subject Code	Course Code	Course Outcomes
10	BPHYS202 Applied Physics for CSE Stream	C110.1	Describe the principles of LASERS and Optical fibers and their relevant applications.
		C110.2	Discuss the basic principles of the Quantum Mechanics and its application in Quantum Computing.
		C110.3	Summarize the essential properties of superconductors and its applications in qubits.
		C110.4	Illustrate the application of physics in design and data analysis.
		C110.5	Practice working in groups to conduct experiments in physics and perform precise and honest measurements.

S.No.	Subject Code	Course Code	Course Outcomes
11	BPOPS203 Principles of Programming Using C	C111.1	Elucidate the basic architecture and functionalities of a computer and also recognize the hardware parts.
		C111.2	Apply programming constructs of C language to solve the real world problem
		C111.3	Explore user-defined data structures like arrays in implementing solutions to problems like searching and sorting.
		C111.4	Explore user-defined data structures like structures, unions and pointers in implementing solutions
		C111.5	Design and Develop Solutions to problems using modular programming constructs using functions

S.No.	Subject Code	Course Code	Course Outcomes
12	BESCK204B Introduction to Electrical Engineering	C112.1	Understand the concepts of various energy sources and Electric circuits.
		C112.2	Apply the basic Electrical laws to solve circuits.
		C112.3	Discuss the construction and operation of various Electrical Machines.
		C112.4	Identify suitable Electrical machine for practical implementation.
		C112.5	Explain the concepts of electric power transmission and distribution, electricity billing, circuit protective devices and personal safety measures.

S.No.	Subject Code	Course Code	Course Outcomes
13	BETCK205I Introduction to Cyber Security	C113.1	Explain the cybercrime terminologies
		C113.2	Describe Cyber offenses and Botnets
		C113.3	Illustrate Tools and Methods used on Cybercrime
		C113.4	Explain Phishing and Identity Theft
		C113.5	Justify the need of computer forensics

S.No.	Subject Code	Course Code	14Course Outcomes
14	BPWSK206 Professional Writing Skills in English	C114.1	To understand and identify the Common Errors in Writing and Speaking.
		C114.2	To Achieve better Technical writing and Presentation skills.
		C114.3	To read Technical proposals properly and make them to Write good technical reports.
		C114.4	Acquire Employment and Workplace communication skills.
		C114.5	Acquire Employment and Workplace communication skills.

S.No.	Subject Code	Course Code	Course Outcomes
15	BKBKK207 Balake Kannada	C115.1	To understand the necessity of learning of local language for comfortable life.
		C115.2	To speak, read and write Kannada language as per requirement.
		C115.3	To communicate (converse) in Kannada language in their daily life with kannada speakers.
		C115.4	To Listen and understand the Kannada language properly.
		C115.5	To speak in polite conversation.
	OR		
	BKBKK207 Samskrutika Kannada	C115.1	ಕನ್ನಡ ಭಾಷೆ, ಸಾಹಿತ್ಯ ಮತ್ತು ಕನ್ನಡದ ಸಂಸ್ಕೃತಿಯ ಕುರಿತು ಅರಿವು ಮೂಡಿರುತ್ತದೆ.
		C115.2	ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಪ್ರಧಾನ ಭಾಗವಾದ ಆಧುನಿಕ ಪೂರ್ವ ಮತ್ತು ಆಧುನಿಕ ಕಾವ್ಯಗಳನ್ನು ಸಾಂಕೇತಿಕವಾಗಿ ಕಲಿತು ಹೆಚ್ಚಿನ ಓದಿಗೆ ಮತ್ತು ಜ್ಞಾನಕ್ಕೆ ಸ್ಪೂರ್ತಿ ಮೂಡುತ್ತದೆ.
		C115.3	ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಸಾಹಿತ್ಯ ಮತ್ತು ಸಂಸ್ಕೃತಿಯ ಬಗ್ಗೆ ಅರಿವು ಹಾಗೂ ಆಸಕ್ತಿಯನ್ನು ಹೆಚ್ಚಾಗುತ್ತದೆ.
		C115.4	ತಾಂತ್ರಿಕ ವ್ಯಕ್ತಿಗಳ ಪರಿಚಯ ಹಾಗೂ ಅವರುಗಳ ಸಾಧಿಸಿದ ವಿಷಯಗಳನ್ನು ತಿಳಿದುಕೊಂಡು ನಾಡಿನ ಇನ್ನಿತರ ವ್ಯಕ್ತಿಗಳ ಬಗ್ಗೆ ತಿಳಿದುಕೊಳ್ಳಲು ಕೌತುಕತೆ ಹೆಚ್ಚಾಗುತ್ತದೆ.

		C115.5	ಸಾಂಸ್ಕೃತಿಕ, ಜನಪದ ಹಾಗೂ ಪ್ರವಾಸ ಕಥನಗಳ ಪರಿಚಯ ಮಾಡಿಕೊಡುವುದು.
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S.No.	Subject Code	Course Code	Course Outcomes
16	BIDTK258 Innovation & Design Thinking	C116.1	Appreciate various design process procedure
		C116.2	Generate and develop design ideas through different technique
		C116.3	Identify the significance of reverse Engineering to Understand products
		C116.4	Draw technical drawing for design ideas

S.No.	Subject Code	Course Code	Course Outcomes
17	BCS301 Mathematics for Computer Science	C201.1	Explain the basic concepts of probability, random variables, probability distribution
		C201.2	Apply suitable probability distribution models for the given scenario.
		C201.3	Apply the notion of a discrete-time Markov chain and n-step transition probabilities to solve the given problem
		C201.4	Use statistical methodology and tools in the engineering problem-solving process.
		C201.5	Compute the confidence intervals for the mean of the population.
		C201.6	Apply the ANOVA test related to engineering problems.

S.No.	Subject Code	Course Code	Course Outcomes
18	BCS302 Digital Design and Computer Organization	C202.1	Apply the K-Map techniques to simplify various Boolean expressions.
		C202.2	Design different types of combinational and sequential circuits along with Verilog programs.
		C202.3	Describe the fundamentals of machine instructions, addressing modes and Processor performance.
		C202.4	Explain the approaches involved in achieving communication between processor and I/O devices.
		C202.5	Analyze internal Organization of Memory and Impact of cache/Pipelining on Processor Performance.

S.No.	Subject Code	Course Code	Course Outcomes
19	BCS303  Operating Systems	C203.1	Explain the structure and functionality of operating system
		C203.2	Apply appropriate CPU scheduling algorithms for the given problem.
		C203.3	Analyse the various techniques for process synchronization and deadlock handling.
		C203.4	Apply the various techniques for memory management
		C203.5	Explain file and secondary storage management strategies
		C203.6	Describe the need for information protection mechanisms

S.No.	Subject Code	Course Code	Course Outcomes
20	BCS304 Data Structures and Applications	C204.1	Explain different data structures and their applications.
		C204.2	Apply Arrays, Stacks and Queue data structures to solve the given problems.
		C204.3	Use the concept of linked list in problem solving.
		C204.4	Develop solutions using trees and graphs to model the real-world problem.
		C204.5	Explain the advanced Data Structures concepts such as Hashing Techniques and Optimal Binary Search Trees.

S.No.	Subject Code	Course Code	Course Outcomes
21	BCSL305 Data Structures Laboratory	C205.1	Analyze various linear and non-linear data structures
		C205.2	Demonstrate the working nature of different types of data structures and their applications
		C205.3	Use appropriate searching and sorting algorithms for the give scenario.
		C205.4	Apply the appropriate data structure for solving real world problems

S.No.	Subject Code	Course Code	Course Outcomes
	BCS306A	C206.1	Demonstrate proficiency in writing simple programs involving branching and looping structures.
		C206.2	Design a class involving data members and methods for the given scenario.

22	Object Oriented Programming with JAVA	C206.3	Apply the concepts of inheritance and interfaces in solving real world problems.
		C206.4	Use the concept of packages and exception handling in solving complex problem
		C206.5	Apply concepts of multithreading, autoboxing and enumerations in program development

S.No.	Subject Code	Course Code	Course Outcomes
23	BSCK307 Social Connect & Responsibility	C207.1	Communicate and connect to the surrounding.
		C207.2	Create a responsible connection with the society
		C207.3	Involve in the community in general in which they work.
		C207.4	Notice the needs and problems of the community and involve them in problem –solving.
		C207.5	Develop among themselves a sense of social & civic responsibility & utilize their knowledge in finding practical solutions to individual and community problems.
		C207.6	Develop competence required for group-living and sharing of responsibilities & gain skills in mobilizing community participation to acquire leadership qualities and democratic attitudes.

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24	BCS358A Data Analytics with Excel	C208.1	Use advanced functions and productivity tools to assist in developing worksheets.
		C208.2	Manipulate data lists using Outline and PivotTables.
		C208.3	Use Consolidation to summarise and report results from multiple worksheets.
		C208.4	Apply Macros and Autofilter to solve the given real world scenario

S.No.	Subject Code	Course Code	Course Outcomes
	BPEK359 Physical Education(Sports & Athletics)-I	C209.1	Understand the fundamental concepts and skills of Physical Education, health, Nutrition and Fitness
		C209.2	Familiarization of health-related exercises, sports for overall-growth and development
		C209.3	Create a foundation for the professionals in Physical Education and Sports
		C209.4	Participate in the competition at regional/state/national/international levels.



25		C209.5	Create consciousness among the students on Health, Fitness, and Wellness in developing and maintaining a healthy lifestyle.
	OR		
	BNSK359  National Service Scheme (NSS)	C209.1	Understand the importance of his / her responsibilities towards society
		C209.2	Analyse the environmental and societal problems/issues and will be able to design solutions for the same.
		C209.3	Evaluate the existing system and to propose practical solutions for the same for sustainable development.
		C209.4	Implement government or self-driven projects effectively in the field.
		C209.5	Develop capacity to meet emergencies and natural disasters & practice national integration and social harmony in general.
	OR		
	BYOK359 Yoga for a Better Life	C209.1	Understand the meaning, aim and objectives of Yoga.
		C209.2	Perform Suryanamaskar and able to Teach its benefits.
		C209.3	Understand and teach different Asanas by name, its importance, methods and benefits.
		C209.4	Instruct Kapalabhati and its need and importance
		C209.5	Teach different types of Pranayama by its name, precautions, procedure and uses
		C209.6	Coach different types of Kriyas , method to follow and usefulness.

S.No.	Subject Code	Course Code	Course Outcomes
26	BCS401 Analysis & Design of Algorithms	C210.1	Apply asymptotic notational method to analyze the performance of the algorithms in terms of time complexity.
		C210.2	Demonstrate divide & conquer approaches and decrease & conquer approaches to solve computational problems.
		C210.3	Make use of transform & conquer and dynamic programming design approaches to solve the given real world or complex computational problems.
		C210.4	Apply greedy and input enhancement methods to solve graph & string based computational problems.
		C210.5	Analyse various classes (P, NP and NP Complete) of problems
		C210.6	Illustrate backtracking, branch & bound and approximation methods.

S.No.	Subject Code	Course Code	Course Outcomes
27	BAD402 Artificial Intelligence	C211.1	Apply knowledge of agent architecture, searching and reasoning techniques for different applications.
		C211.2	Compare various Searching and Inferencing Techniques.
		C211.3	Develop knowledge base sentences using propositional logic and first order logic
		C211.4	Describe the concepts of quantifying uncertainty.
		C211.5	Use the concepts of Expert Systems to build applications.

S.No.	Subject Code	Course Code	Course Outcomes
28	BCS403 Database Management Systems	C212.1	Describe the basic elements of a relational database management system
		C212.2	Design entity relationship for the given scenario.
		C212.3	Apply various Structured Query Language (SQL) statements for database manipulation.
		C212.4	Analyse various normalization forms for the given application.
		C212.5	Develop database applications for the given real world problem.
		C212.6	Understand the concepts related to NoSQL databases.

S.No.	Subject Code	Course Code	13Course Outcomes
29	BCSL404 Analysis & Design of Algorithms Lab	C213.1	Develop programs to solve computational problems using suitable algorithm design strategy
		C213.2	Compare algorithm design strategies by developing equivalent programs and observing running times for analysis (Empirical).
		C213.3	Make use of suitable integrated development tools to develop programs
		C213.4	Choose appropriate algorithm design techniques to develop solution to the computational and complex problems.
		C213.5	Demonstrate and present the development of program, its execution and running time(s) and record the results/inferences.

S.No.	Subject Code	Course Code	Course Outcomes
		C214.1	Apply concepts of logical reasoning and mathematical proof techniques in proving theorems and statements.

30	BCS405A Discrete Mathematical Structures	C214.2	Demonstrate the application of discrete structures in different fields of computer science.
		C214.3	Apply the basic concepts of relations, functions and partially ordered sets for computer representations.
		C214.4	Solve problems involving recurrence relations and generating functions.
		C214.5	Illustrate the fundamental principles of Algebraic structures with the problems related to computer science & engineering.

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31	BDSL456C MERN	C215.1	Apply the fundamentals of MongoDB, such as data modelling, CRUD operations, and basic queries to solve given problem
		C215.2	Use constructs of Express.js, including routing, software and constructing RESTful APIs to solve real world problems
		C215.3	Develop scalable and efficient RESTful APIs using NodeJS
		C215.4	Develop applications using React, including components, state, props, and JSX syntax

S.No.	Subject Code	Course Code	Course Outcomes
32	BBOC407 Biology for Engineers	C216.1	Elucidate the basic biological concepts via relevant industrial applications and case studies.
		C216.2	Evaluate the principles of design and development, for exploring novel bioengineering projects.
		C216.3	Corroborate the concepts of biomimetics for specific requirements
		C216.4	Think critically towards exploring innovative biobased solutions for socially relevant problems.

S.No.	Subject Code	Course Code	Course Outcomes
33	BUHK408 Universal Human Values	C217.1	They would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
		C217.2	They would have better critical ability.
		C217.3	They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society).
		C217.4	It is hoped that they 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.
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34	BPEK459 Physical Education(Sports & Athletics)-II	C218.1	Understand the ethics and moral values in sports and athletics
		C218.2	Perform in the selected sports or athletics of student's choice.
		C218.3	Understand the roles and responsibilities of organization and administration of sports and games.
	OR		
	BNSK459 National Service Scheme (NSS)	C218.1	Understand the importance of his / her responsibilities towards society
		C218.2	Analyse the environmental and societal problems/issues and will be able to design solutions for the same.
		C218.3	Evaluate the existing system and to propose practical solutions for the same for sustainable development.
		C218.4	Implement government or self-driven projects effectively in the field.
		C218.5	Develop capacity to meet emergencies and natural disasters & practice national integration and social harmony in general.
	OR		
	BYOK459 Yoga for a Better Life	C218.1	Understand the meaning, aim and objectives of Yoga.
		C218.2	Perform Suryanamaskar and able to Teach its benefits.
		C218.3	Understand and teach different Asanas by name, its importance, methods and benefits.
		C218.4	Instruct Kapalabhati and its need and importance
		C218.5	Teach different types of Pranayama by its name, precautions, procedure and uses
		C218.6	Coach different types of Kriyas , method to follow and usefulness.