Audyogik Shikshan Mandal's
College of Commerce, Science & Information Technology
(ID. No. PU/PN/SC/160/2001)
(Affiliated to Savitribai Phule Pune University & Recognized by Govt. of Maharashtra)
S. No. 29/1+2A, Behind Sterling Honda, Pune-Mumbai Highway, Pimpri, Pune-411018
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Program Outcomes
B.Sc. (CS)
2019 Pattern

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Program Outcomes – B.Sc. (CS)

PO No	Program Outcome (PO) Description
PO1	Understand core concepts of computer science and mathematics.
PO2	Analyse and solve computational problems logically.
PO3	Design and develop effective software solutions.
PO4	Use modern programming tools and technologies.
PO5	Communicate technical ideas clearly and effectively.
PO6	Follow ethical and professional computing practices.
PO7	Work effectively as an individual and in teams.
PO8	Understand social and environmental impacts of computing.
PO9	Engage in continuous and lifelong learning.
PO10	Apply project management skills in real-world situations.

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Course Outcomes –BSc(CS)

Course Outcome: - CS-351-Operating Systems – I

CO	Course Outcomes
CO-1	Understand the basic concepts, structure, and services of an Operating System.
CO-2	Explain process management, scheduling algorithms, and synchronization.
CO-3	Solve problems related to memory management and virtual memory.
CO-4	Analyze file system organization and disk scheduling techniques.
CO-5	Evaluate OS techniques for handling processes, deadlocks, and I/O systems.
CO-6	Apply OS concepts to case studies (Linux. Windows)

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Course Outcome: - (CS-352) Computer Network-II

CO	Course Outcomes
CO1	Students should be able to recall current trends and advancements in networking technologies.
CO2	Students should have to understand the basic concepts and principles of computer networks, including types of networks (LAN, WAN, MAN, PAN), network topologies, and protocols.
CO3	Students must be able to design and implement a small to medium-sized network considering performance, security, and scalability requirements.
CO4	Students have to analyze the standards and protocols of wireless networking (e.g., Wi-Fi, Bluetooth) to determine their suitability for various applications.
CO5	Students will be able to evaluate the effectiveness of different layers in handling specific networking tasks and protocols.
CO6	Students should be able to create a detailed network security plan that includes the implementation of firewalls, VPNs, IDS/IPS, and other security measures.

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Course Outcome: - (CS-353) Web Technologies-I

CO	Course Outcomes
CO1	Recall and explain the basic concepts of HTML, CSS, web servers, web browsers, HTTP, and PHP basics.
CO2	Develop web pages using HTML5 semantic elements, forms, tables, CSS styling, and navigation bars.
CO3	Apply PHP basics including lexical structure, variables, operators, control structures, and functions to write dynamic scripts.
CO4	Analyze and manipulate strings, arrays, and regular expressions for data handling in PHP programs.
CO5	Evaluate and implement file handling operations, directory management, and database interactions (SQL, PEAR DB).
CO6	Design and create complete web solutions using PHP, including email handling, validation, and dynamic data processing.

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Course Outcome: - (CS-354-FDS) Foundation of Data Science

CO	Course Outcomes
CO1	Students are able to Perform Exploratory Data Analysis.
CO2	Students should able to Obtain Clean/Process and transform data..
CO3	Students must be able to Detect and diagnose common data issues, such as missing values ,Special Values, Outliers, inconsistencies and localization.
CO4	Students should be able to Demonstrate proficiency with Statistical analysis of data.
CO5	Students have able to Present results using visualization techniques.
CO6	The course should provide students must have to Prepare data for use with a variety of Statistical methods and models and recognize how the quality of the data and the means of data collection may affect

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Course Outcome :-(CS-355-MJ-T)-

Object Oriented Programming Using Java-I

CO	Course Outcomes
CO1	**Student will be able to recall** Java syntax, keywords, basic structure, and tools.
CO2	**Student will be able to explain** object-oriented concepts, inheritance, exception handling, and interface design.
CO3	**Student will be able to implement** and develop Java programs using arrays, classes, inheritance, interfaces, and GUI components.
CO4	**Student will be able to analyze** object relationships, polymorphic behavior, and file I/O operations.
CO5	**Student will be able to evaluate** and debug Java code with exception handling and modular structure.
CO6	**Student will be able to design** Java applications integrating GUI, events, and file handling effectively.

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Course Outcome: - (CS-356) Theoretical Computer Science

CO	Course Outcomes
CO1	**Students will be able to** recall, define and explain fundamental concepts of formal languages, automata, and grammars.
CO2	**Students will be able to** Construct finite automata (DFA/NFA) and convert between different automata and regular expressions.
CO3	**Students will be able to** Analyze regular and context-free languages using pumping lemmas and closure properties.
CO4	**Students will be able to** Design context-free grammars and pushdown automata for specific languages.
CO5	**Students will be able to** Evaluate the capabilities and limitations of Turing Machines and decidability problems.
CO6	**Students will be able to** differentiate between recursively enumerable and recursive languages and examine problems related to NP-completeness.

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Course Outcome: - CS-3510-Python Programming

CO	Course Outcomes
CO-1	Recall Python's basic syntax, data types, control structures, and program execution process.
CO-2	Explain control statements, string operations, functions, and data structures in Python.
CO-3	Develop Python programs using lists, tuples, dictionaries, sets, and modular programming techniques
CO-4	Analyze and debug Python code for errors, performance, and readability.
CO-5	Assess Python's file handling, module management, and exception handling capabilities.
CO-6	Design and implement real-world Python applications integrating files, modules, and error handling.

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Course Outcome: - (CS-3511-MN) Blockchain Technology

CO	Course Outcomes
CO1	Students are able to regain the knowledge of fundamental concepts on blockchain technology such as core principles and architecture.
CO2	Students should able to understand about cryptographic techniques used in blockchain, such as hashing, digital signatures, and public/private key encryption.
CO3	Students must be able to apply problem-solving skills related to blockchain implementation, including scalability, interoperability, and performance optimization.
CO4	Students should be able to analyze diverse use cases helps in identifying areas where blockchain can add value and also about various platforms allows professionals to choose the right tool for specific use cases.
CO5	Students have able to evaluate on failed use cases of blockchain to understand common pitfalls.
CO6	The course should provide students must have to work collaboratively in teams to design and implement blockchain solutions, leveraging diverse skills and perspectives..

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