K.D.K. College of Engineering, Nagpur

CO'S for

Master of Computer Application- IInd Year

Python Programming

Course Objectives	
1	Learn the syntax and semantics of Python Programming Language.
2	Write Python functions to facilitate code reuse and manipulate strings.
3	Illustrate the process of structuring the data using lists, tuples and dictionaries.
4	Demonstrate the use of built-in functions to navigate the file system.

Course Outcomes	
After completion of syllabus, the student is able to	
CO 1	Ability to execute Python programs interactively and through scripts.
CO 2	Determine the methods to create and manipulate Python programs by utilizing the data structures like lists, dictionaries, tuples and sets.
CO 3	Determine the methods to create and manipulate Python programs by utilizing the data structures like lists, dictionaries, tuples and sets.
CO 4	Work with Databases and Develop GUI Applications
CO 5	Develop basic real-world applications using object-oriented programming concepts in Python.

Optimization Technique

Course Objectives	
1	To introduce various optimization techniques i.e classical, linear programming, transportation problem, simplex algorithm, dynamic programming
2	Constrained and unconstrained optimization techniques for solving and optimizing electrical and electronic engineering circuits design problems in real world situations.
3	To explain the concept of Dynamic programming and its applications to project implementation.

Course Outcomes	
After completion of syllabus, the student is able to	
CO1	Understand optimization function surface.
CO2	Apply classical optimization techniques, linear programming, simplex algorithm, transportation problem.
CO3	Apply unconstrained optimization and constrained non-linear programming and dynamic programming.
CO4	Formulate optimization problems and explain the need of optimization of engineering systems.
CO5	Understand and apply dynamic programming concepts including multistage decision processes, principle of optimality, and computational procedures to solve problems using tabular and calculus-based methods.

Machine Learning

	Course Objectives
1	Acquire theoretical Knowledge on setting hypothesis for pattern recognition.
2	Apply suitable machine learning techniques for data handling and to gain knowledge from it
3	Evaluate the performance of algorithms and to provide solution for various real world applications.

	Course Outcomes
	After completion of syllabus, the student is able to
CO1	Recognize the characteristics of Machine Learning techniques that enable to solve real world problems
CO2	Recognize the characteristics of machine learning strategies and Apply various supervised learning methods to appropriate problems
CO3	Identify and integrate more than one techniques to enhance the performance of learning & Create probabilistic and unsupervised learning models for handling unknown pattern.
CO4	Analyze the co-occurrence of data to find interesting frequent patterns
CO5	Apply genetic algorithms and evolutionary models to hypothesis space search, utilizing genetic operators, fitness functions.

Big Data Analytics (Elective-III)

	Course Objectives
1	To know the fundamental concepts of big data and analytics.
2	To explore tools and practices for working with big data.
3	To learn about stream computing.
4	To know about the research that requires the integration of large amounts of data.

	Course Outcomes
	After completion of syllabus, the student is able to
CO1	Understand big data phenomena and its applications
CO2	Understand New SQL system concepts and databases.
CO3	Apply Hadoop ecosystem tools to implement big data related case studies Implement distributed storage and big data processing concepts using open-source tools like Hadoop.
CO4	Understanding Eval Function and Cassandra.
CO5	Discuss about Jasper and Cassandra

(Elective-III) GREEN COMPUTING

Course Objectives	
1	To learn the fundamentals of Green Computing.
2	To analyze the Green computing Grid Framework.
3	To understand the issues related with Green compliance.
4	To study and develop various case studies.

Course Outcomes	
After completion of syllabus, the student is able to	
CO1	Discuss Green IT with its different dimensions and Strategies.
CO2	Discuss the definition and scope of green IT.
CO3	Describe Green devices and hardware along with its green software methodologies.
CO4	Discuss the various green enterprise activities, functions and their role with IT.
CO5	Describe The Concepts Of How To Manage The Grid Framework green Compliance With Necessary Components.

DATA WAREHOUSING & DATA MINING (Elective-III)

Course Objectives	
1	To teach principles, concepts and applications of data warehousing and data mining.
2	To introduce the task of data mining as an important phase of knowledge recovery process
3	To inculcate Conceptual, Logical, and Physical design of Data Warehouses OLAP applications and OLAP deployment
4	To inculcate fundamental concepts that provide the foundation of data mining

Course Outcomes	
After completion of syllabus, the student is able to	
CO1	Design a data mart or data warehouse for any organization
CO2	Understand the concepts of Data Cubes and multidimensional data models.
CO3	Extract knowledge using data mining techniques.
CO4	Adapt to new data mining tools.
CO5	Explore recent trends in data mining such as web mining, spatial-temporal mining.

SOFTWARE TESTING

Course Objectives	
1	To study fundamental concepts in software testing, including software testing objectives, process, criteria, strategies, and methods
2	To discuss various software testing issues and solutions in software unit test; integration, regression, and system testing
3	To learn how to planning a test project, design test cases and data, conduct testing operations, manage software problems and defects, generate a testing report.

Course Outcomes	
After completion of syllabus, the student is able to	
CO1	Understand the fundamental concept of Testing
CO2	Determine the role of testing in SDLC
CO3	Understand and apply black box testing techniques.
CO4	Apply the concept of Software testing and its management tools.

Industry based Mini Project

Course Objectives	
1	This course will help to get familiar with the basics of project planning, designing and development. Also, students can learn to understand technology and processes associated in software industries.

Course Outcomes	
On successful completion of the course, students will be able to:	
CO1	Implement comprehensive project planning, designing and development process.
CO2	Acquire and understand Software industry needs.
CO3	Design and develop functional project solutions using appropriate methodologies, tools, and technologies.
CO4	Demonstrate project planning, time management, and teamwork skills through collaborative development efforts
CO5	Apply theoretical knowledge to real-world problems through industry-oriented project work.

DISTRIBUTED SYSTEM

	Course Objectives
1	To provide hardware and software issues in modern distributed systems.
2	To get knowledge in distributed architecture, naming, synchronization, consistency and replication, fault tolerance, security, and distributed file systems.
3	To analyze the current popular distributed systems such as peer-to-peer (P2P) systems will also be analyzed
4	This course is an introduction to the design of distributed systems and algorithms that support distributed computing. It aims to provide a practical exposure into the design and functioning of existing distributed systems

Course Outcomes	
After completion of syllabus, the student is able to	
CO1	Understand Distributed Computing techniques, Synchronous and Processes
CO2	Design a distributed system that fulfils requirements with regards to key distributed systems properties.
CO3	Understand Distributed File Systems and Distributed Shared Memory.
CO4	Design and develop distributed applications using appropriate middleware, RPC, RMI, or socket programming.

ARTIFICIAL INTELLIGENCE

	Course Objectives
1	Learn the basic AI approaches
2	Develop problem solving agents.
3	Perform logical and probabilistic reasoning.
4	Investigate applications of AI techniques in intelligent agents, expert systems, artificial neural networks and other machine learning models.

Course Outcomes	
After completion of syllabus, the student is able to:	
CO1	Apply the good programming skills to formulate the solutions for computational problems.
CO2	Design and develop solutions for informed and uninformed search problems in AI.
CO3	Demonstrate and enrich knowledge to select and apply AI tools to synthesize information and develop models within constraints of application area.
CO4	Design and develop an Expert System that operates in a realistic problem domain and communicate effectively in a team or individual and prepare reports.

Major Project/ Internship

Course Objectives	
1	This course will help to get familiar with the basics of project planning, designing and development. Also, students can learn to understand technology and processes associated in software industries

	Course Outcome
On successful completion of the course, students will be able to:	
CO1	Implement comprehensive project planning, designing and development process.
CO2	Acquire and understand Software industry needs.