



ANDHRA KESARI UNIVERSITY ::ONGOLE

MINOR

Subject: CLOUD COMPUTING

w.e.f. AY 2023-24

COURSE STRUCTURE

Year	Semester	Course	Title of the Course	No. of Hrs /Week	No. of Credits
I	II	1	Computer Networks	3	3
			Computer Networks Practical Course	2	1
II	III	2	Cloud Computing	3	3
			Cloud Computing Practical Course	2	1
	IV	3	AWS for Cloud Computing	3	3
			AWS for Cloud Computing Practical Course	2	1
		4	Data Mining and Data warehousing	3	3
			Data Mining and Data warehousing Practical Course	2	1
III	V	5	Python Programming	3	3
			Python Programming Practical Course	2	1
		6	Data Analytics Methods	3	3
			Data Analytics Methods Practical Course	2	1

SEMESTER-V
COURSE 5: PYTHON PROGRAMMING

Theory

Credits: 3

3 hrs/week

I. Learning Outcomes:

1. Develop and execute simple Python programs.
2. Structure a Python program into functions.
3. Using Python lists, tuples to represent compound data
4. Develop Python Programs for file processing
5. Understand the inheritance concepts

II. Syllabus

UNIT- I

Introduction to Python, Python, Features of Python, Execution of a Python, Program, Writing Our First Python Program, Data types in Python. Python Interpreter and Interactive Mode; Values and Types: int, float, boolean, string, and list; Variables, Expressions, Statements, Tuple Assignment, Precedence of Operators, Comments; Modules and Functions, Function Definition and use, Flow of Execution, Parameters and Arguments

UNIT- II

Operators in Python, Input and Output, Control Statements. Boolean Values and operators, Conditional (if), Alternative (if-else), Chained Conditional (if-elif-else); Iteration: state, while, for, break, continue, pass; Fruitful Functions: Return Values, Parameters, Local and Global Scope, Function Composition, Recursion

UNIT- III

Arrays in Python, Strings and Characters. Strings: String Slices, Immutability, String Functions and Methods, String Module; Lists as Arrays. Illustrative Programs: Square Root, gcd, Exponentiation, Sum an Array of Numbers, Linear Search, Binary Search.

UNIT- IV

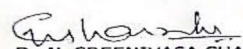
Functions, Lists and Tuples. List Operations, List Slices, List Methods, List Loop, Mutability, Aliasing, Cloning Lists, List Parameters; Tuples: Tuple Assignment, Tuple as Return Value; Dictionaries: Operations and Methods; Advanced List Processing - List Comprehension; Illustrative Programs: Selection Sort, Insertion Sort, Merge sort, Histogram.

UNIT-V

Files and Exception: Text Files, Reading and Writing Files, Format Operator; Command Line Arguments, Errors and Exceptions, Handling Exceptions, Modules, Packages; Illustrative Programs: Word Count, Copy File.

Text Books:

1. Mark Lutz, Learning Python
2. Tony Gaddis, Starting Out with Python



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SEMESTER-V
COURSE 5: PYTHON PROGRAMMING

Practical

Credits: 1

2 hrs/week

Practical Syllabus: PYTHON PROGRAMMING

III. Skill Outcomes:

1. Foundation to write and understand Python code
2. Learners will understand how to break down complex problems into smaller, manageable tasks
3. Understand how to design and implement classes, objects
4. Inheritance hierarchies, enabling them to build more complex and scalable programs.
5. Acquire skills to work with data structures like lists, dictionaries, and tuples

IV. Practical Syllabus:

1. Write a Python program to convert temperatures to and from Celsius, Fahrenheit.
2. Write a Python program that accepts a word from the user and reverse it
3. Write a Python program to get the Fibonacci series between 0 to 50.
4. Write a Python program to find the square root of a number.
5. Write a Python program that accepts a string and calculate the number of digits and letters
6. Write a Python program to check whether an alphabet is a vowel or consonant
7. Write a Python program to calculate the sum and average of n integer numbers
8. Write a Python program to create the multiplication table (from 1 to 10) of a number
9. Write a Python function to find the Max of three numbers.
10. Write a Python function to calculate the factorial of a number (a non-negative integer).
The function accepts the number as an argument.
11. Write a Python function that takes a number as a parameter and check the number is prime or not.
12. Write a Python function to check whether a number is perfect or not.
13. Write a Python function that checks whether a passed string is palindrome or not.
14. Write a Python program for sequential search.

V. References:

15. Kenneth A. Lambert, Fundamentals of Python
16. James Payne, Beginning Python using Python 2.6 and Python

VI. Co-Curricular Activities:

Suggested Co-Curricular

Activities:

1. Training of students by related industrial experts.
2. Assignments
3. Seminars, Group discussions, Quiz, Debates etc. (on related topics).
4. Preparation of videos on tools and techniques.
5. Visits to technology facilities, firms, research organizations etc.
6. Invited lectures and presentations on related topics by field/industrial experts.

SEMESTER-V

COURSE 6: DATA ANALYTICS METHODS

Theory

Credits: 3

3 hrs/week

I.COURSE OUTCOMES: After successful completion of this course, the student will be able to;

1. Ability to distinguish between discrete and continuous distributions.
2. Knowledge related to concept of curve fitting.
3. Knowledge of important discrete and continuous distributions such as Binomial, Poisson, rectangular, normal, distributions.
4. Acumen to apply standard discrete and continuous probability distributions to different situations.
5. Knowledge related to concept of correlations.
6. Knowledge related to concept of regressions.
7. Knowledge of correlation, regression analysis, regression diagnostics.

UNIT – I

Correlation: Introduction, Meaning of Correlation, Types of correlation, probable error, Karl-pearson's coefficient of correlation for individual series only, Spearman's Rank correlation for individual series only.

UNIT –II

Regression: Introduction, definition, difference between correlation and regression, Simple linear regression, properties of regression coefficients, Regression equation x on y , Regression equation y on x , Simple Problems.

UNIT – III

Estimation Techniques: Forward Differences - Backward differences. Newton's forward interpolation formula - Newton's backward interpolation formula

UNIT – IV

Curve Fitting : method of least squares, fitting of a straight line only. Linear trend and find trend values by the method of straight line trend.

UNIT –V

Applications of Numerical Integration: Trapezoidal rule, Simpson's $1/3^{\text{rd}}$ rule, Simpson's $3/8^{\text{th}}$ rule.

Note: Concentration on numerical problems only. Proofs of theorems and Derivations of expressions are omitted.

Text Books:

1. Mathematical Methods by Dr. T.K.V.Iyengar. - S.Chand Publications.
2. Statistical methods - S.P Gupta.

Reference Books:

Fundamentals of Mathematical statistics - S.C. Gupta & V.K.Kapoor.



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SEMESTER-V

COURSE 6: DATA ANALYTICS METHODS

Practical

Credits: 1

2 hrs/week

DATA ANALYTICS METHODS LAB

1. Trapezoidal rule
2. Simpson's rule
3. Fitting of a Straight Line.
4. Fitting of a Straight Line Trend.
5. Estimation Techniques
6. Interpolation.
7. Rank Correlation.
8. Correlation coefficient.
9. Regression lines X on Y.
- 10.** Regression lines Y on X.


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