Shiksha Mandal's
Bajaj College of Science, Wardha
(Formerly known as Jankidevi Bajaj College of Science, Wardha)
SYLLABUS FOR III
Skill Enhancement Course (SEC)
(COMPUTER SCIENCE Minor)
(BSc Physics with Computer Science as Minor/ BSc Electronics with Computer Science as Minor/ BSc Mathematics with Computer Science as Minor)
(To be implemented from Academic Session 2024-25)

(Code: UCS233P)

Introduction to Python

Credits: 2 (4 Pr)   No. of Practical: 30

Course Description: This course introduces Python programming language. You gain the fundamental knowledge required for understanding Python programming.

Learning Objectives:

- To introduce core programming concepts like data structures, conditionals, loops, variables, and functions.
- To overview the various tools available for writing and running Python and gets students coding quickly.
- To provide hands-on coding exercises using commonly used data structures and writing custom functions.

Course Learning Outcomes:

- Identify core aspects of programming and features of the Python language
- Use different tools for writing and running Python code
- Understand and apply core programming concepts like data structures, conditionals, loops, variables, and functions
- Design and write fully-functional Python programs using commonly used data structures, and custom functions.

Unit – I

Introduction to Python, Downloading & installing Python, how do I write Python, Variables, Basic Data Types, Operators, Strings, Casting, what is a Python script, running a Python script, adding comments, getting user input, if … elif … else statement, multiple if conditionals, checking user input, Python Errors

Unit – II
Types of Loops, iterating over a list, iterating over strings, 'for' loops using range, exiting a loop using break, continue, Nested loops, creating a list, updating a list, List functions, slicing lists, Strings vs. lists, slicing strings

Unit – III
Creating a tuple, creating a set, iterating over and updating a set, creating a dictionary, Key: value pairs, updating a dictionary, what is a function, Built-in functions, User-defined functions

List of Practical:

1. Program to print 'Welcome to Python' on screen.
2. Program to demonstrate various Python operators.
3. Program to input any number from the user and check whether it is even or not.
4. Program to input any number from the user and calculate the factorial of a number.
5. Program to input any number from the user and check if it is a prime number or not.
6. Program to calculate the nth term of the Fibonacci series.
7. Program to Print:
   ```
   *
   **
   ***
   ****
   ```
8. Program to search any word in a given string/sentence.
9. Create a list and perform the following methods 1) insert() 2) remove() 3) append() 4) len() 5) pop() 6)clear()
10. Create a tuple and perform the following methods 1) Add items 2) len() 3) check for item in tuple 4)Access items
11. Create a dictionary and apply the following methods 1) Print the dictionary items 2) access items 3) useget() 4)change values 5) use len()
12. Write a function that reverse the user-defined value.

References:

1. Core Python Programming by R. Nageswara Rao (Dreamtech Press)
2. Python for beginners – Harsh Bhasin (New Age International (P) Ltd Publishers)
3. Let us Python- Yashvant Kanetkar, Aditya Kanetkar (BPB Publications)
4. PYTHON PROGRAMMING: USING PROBLEM SOLVING APPROACH- Reema Thareja (Oxford University Press)
5. Programming in Python 3: A Complete Introduction to the Python Language- Mark Summerfield

Mode of evaluation:

Continuous Internal Assessment (No end semester examination) (Poster presentation / Project/ Presentation/ Assignment/ quiz)

Total Marks: 100

Shiksha Mandal's
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SYLLABUS FOR IV
Skill Enhancement Course (SEC)
(COMPUTER SCIENCE Minor)
(BSc Physics with Computer Science as Minor/ BSc Electronics with Computer Science as Minor/ BSc Mathematics with Computer Science as Minor)

(To be implemented from Academic Session 2024-25)

(Code:UCS243P)

LIBREOFFICE

Credits: 2 (4 Pr)   No. of Practical: 30

Course Description:

This course would enable the students in crafting professional documents; spread sheets, and presentations using the LibreOffice suite of tools.

Learning Objectives:
- To familiarize the students in preparation of documents, spreadsheets, and presentations with LibreOffice tools.

Course Learning Outcomes: After completion of this course the students would be able:

- To work in office, handle documents, spreadsheets, make presentations and communicate through internet.

UNIT – I

Introduction to LibreOffice Writer, Typing text and basic formatting in Writer, Inserting images, hyperlinks, bookmarks in Writer, Tables and table properties, viewing and printing a document, using find-replace and auto-correct, headers and footers.

UNIT – II

Introduction to LibreOffice Calc, Working with cells, Working with sheets, Formatting data in Calc, Basic data manipulation, Working with data in Calc, Viewing and printing spreadsheet, Using charts and graphics, basic formulae and function in Calc.

UNIT – III

Introduction to LibreOffice Impress, Creating a presentation in Impress, Viewing presentation, Inserting pictures and tables in Impress, Printing a presentation, Slide Master and Slide Design, Custom animation, Slide Show creation in Impress.

List of Practical:

1. To Prepare a Resume/Official Letter / Business Letter / Circular Letter Covering formatting commands - font size and styles - bold, underline, upper case, lower case, superscript, subscript, indenting paragraphs, spacing between lines and characters, tab settings etc.
2. To create a table using table menu, using cell editing operations like inserting, joining, deleting, splitting and merging cells.
3. To create numbered list and bulleted list with different formats (with numbers, alphabets, roman letters).
4. To use mail merge facility for sending a circular letter to many persons.
5. To Prepare a Statement for preparing Result of 10 students in 5 subjects (using formula to get Distinction, I Class, II Class and Fail under Result column against each student).
6. To perform operations like finding, deleting and adding records, formatting columns, row height, merging, splitting columns etc. Connecting the Worksheets and enter the data.
7. To create a chart for comparing the monthly sales of a company in different branch offices.
8. To perform Sorting, Searching operations, and Filtering Data.
9. To create a new Presentation based on a template – using content wizard, design template and plain blank presentation.
10. Creating a Presentation with Slide Transition – Automatic and Manual with different effects.
11. Creating a Presentation applying Custom Animation effects – Applying multiple effects to the same object and changing to a different effect and removing effects.
12. Creating and Printing handouts.

Reference Books

1. LibreOffice 7.5 Writer Guide by LibreOffice Documentation Team.
2. LibreOffice 7.5 Calc Guide by LibreOffice Documentation Team.
3. LibreOffice 7.4 Impress Guide by LibreOffice Documentation Team.