



**Janardan Bhagat Shikshan Prasarak Sanstha's
CHANGU KANA THAKUR
ARTS, COMMERCE & SCIENCE COLLEGE, NEW
PANVEL (AUTONOMOUS)**

**Re-accredited 'A+' Grade by NAAC
'College with Potential for Excellence' Status Awarded by UGC
'Best College Award' by University of Mumbai**

**Program: B.Com.
Revised Syllabus of S.Y.B.Com. Applied Component
Choice Based Credit & Grading System (75:25)
w.e.f. Academic Year 2020-21**

APPLIED COMPONENT
Computer Programming
Based on Credit Based and Grading System

Name of the Programme: S.Y.B.Com

Course Title: Computer Programming I and II (Skill enhancement Course)

Credit Structure: No. of Credits per Semester for Theory - 02

No. of Credits per Semester for Practical - 01

No. of lectures per Practical: 03

Work load (No. of theory lectures per week): 03

No. of practicals per week : 1 practical of 3 lecture periods

Scheme of Examination:

Theory - 75 marks: 2½ hours at the end of each semester.

Practical - 25 marks: 01 hour at the end of each semester

Conduct of Semester End Theory Examination (Total 75 marks)

- (a) At the end of each semester, examination of 2½ hours duration of 75 marks based on three units shall be held.
- (b) All questions shall be compulsory with internal choice within the questions. – Each Question may be sub-divided into sub questions as a, b, c, d & e, etc. & the allocation of Marks depends on the weightage of the topic.

Question	Based on	Marks
Q.1	Objective based on Unit I,II,III	15
Q.2	Unit I	20
Q.3	Unit II	20
Q.4	Unit III	20

SEMESTER III

Computer Programming - I

Course Code:UC3AP1

Course Outcome:

- 1) To give brief knowledge of computer hardware, software and system.
- 2) To understand all functionality of Word.
- 3) To use excel in different functions corresponding to different scenario.
- 4) To perform operations in excel as per the need

Unit	Details	Lectures
I	Introduction to Computer Systems (a) Computer Fundamentals: History and basic structure of a computer. Types of Computers: Super, mainframe, mini and micro computers. Types of micro computers: Desktop, laptop, tablet PC, PDA (Personal Digital Assistant). Units of measurement of computer memory: BITS, BYTES, KB, MB, GB, TB, etc. Terms: Hardware and Software. (b)Hardware Devices: Components of motherboard: I.C.s, bus lines, clock, micro processor chip, memory chips, ports, power supply. Types of Input and Output Devices. Types of Primary memory and Secondary memory storage devices. (c)Software: System and Application software, Types of System and Application software. FOSS. Types of Operating System, examples like DOS, UNIX, LINUX, Windows, Different versions of Windows. Features of Windows, Compilers and Interpreters, Higher and Lower Level languages, Compiler and Interpreter based languages.	15
II	(a) Introduction to a word processor: create and save a document. (b) Edit and format text: text style (B, I, U), font type, font size, text colour, alignment of text. Format paragraphs with line and/or paragraph spacing. Add headers and footers, numbering pages, grammar and spell check utilities, subscript and superscript, insert symbols, use print preview, and print a document. (c) Insert pictures, change the page setting, add bullets and numbering, borders and shading, and insert tables – insert/delete rows and columns, merge and split cells. (d) Use of drawing tools, shapes and mathematical symbols.	15
III	Spread Sheet Package (Microsoft Excel) (a) Concept of Workbook, Worksheet, Cell (b) Types of data, Entering, Editing, Deleting data, Fill command, Series command, Custom list (c) Selecting, Inserting, Deleting cells, Rows, Columns, Ranges, Cell formatting (d) References: Mixed, Relative, Absolute. (e) Formulas, Operators, Precedence of operators, Circular reference	15

	<p>(f) Library Functions:- (i) Financial Functions:- FV(), PMT(), PV() (ii) Statistical Functions:- ABS(), AVERAGE(), MEDIAN(), MODE(), STDEV(), VAR() (iii) String Functions:- LEN(), RIGHT(), LEFT(), MID(), PROPER(), UPPER(), LOWER() (iv) Logical Functions:- AND(), OR(), NOT(), IF() (g) Hiding/ unhide Rows, Columns; Background of sheet. (h) Data Validation, Conditional formatting, sorting, filter with customized condition, subtotal. (i) Chart Wizard: Bar, Pie, Line, Scatter plot.</p>	
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Books and References:

Sr. No.	Title	Author/s	Publisher	Edition	Year
1	Computer Fundamentals	Rajaraman	PHI	4 th	2014
2	Computer Fundamentals	P.K. Sinha	BPB	4 th	2016
3	Excel 2019 All-in-One For Dummies Book	Greg Harvey	John Wiley & Sons Inc	1 st	-
4	Excel 2007 Bible Book	John Walkenbach	Wiley india Pvt. Ltd	1 st	-

List of Practical: (Can be done using Microsoft office)

1	Write a paragraph perform the following activities: 1. Select, copy and paste text in a document 2. Select, cut and paste text in a document 3. Replace text in a document using Find option
2	Write a paragraph perform the following activities: 1. Create a bulleted list of the items in a document 2. Create a numbered list of the items in a document
3	Write a paragraph perform the following activities: 1. Change the Font style of text using the ribbon 2. Change the Font style of text using a short cut menu 3. Change the Font size of text using the ribbon 4. Change the Font size of text using a short cut menu
4	Write a paragraph perform the following activities: 1. Align text to the left 2. Align text to the center 3. Align text to the right 4. Align text to both left and right margins
5	Creating an excel sheet to demonstrate bar graph, pie chart etc.
6	Demonstrating financial and statistical functions in spreadsheet
7	Demonstrating string and logical functions in spreadsheet
8	Demonstrating data analysis, sorting, filter with customized condition, subtotal

SEMESTER IV

Computer Programming - II

Course Code:UC4AP1

Course Objectives:

The objective of this paper is to introduce various concepts of programming to the students using Python.

Expected learning outcomes:

- 1) Students should be able to understand the concepts of programming before actually starting to write programs.
- 2) Students should be able to develop logic for Problem Solving.
- 3) Students should be made familiar about the basic constructs of programming such as data, operations, conditions, loops, functions etc.

Unit	Details	Lectures
I	<p>Introduction to Python Language: Overview, Features of Python, Execution of a Python Program, Python Interpreter, Comparison of Python with C and Java, Installing Python, Writing & Executing, IDLE</p> <p>Data Types, Variables And Other Basic Elements: Comments, Data types-Numeric, Compound, Boolean, Dictionary, Sets, Mapping, Basic Elements of Python, Variables</p> <p>Input and Output Operations: Input Function, Output Statements, Command Line Arguments</p> <p>Operators: Arithmetic operators, Assignment operators, Unary minus operator, Relational operators, Logical operators, Bitwise operators, Membership operators, Identity operators, Precedence of Operators, Associativity of Operators</p> <p>Functions: Defining & Calling a Function, Returning Results, Returning Multiple Values, Built-in Functions, Parameters and Arguments,</p>	15
II	<p>Control Statements: The range function, the iterative for statement. The conditional statements if, if-else, if-elif-else. The iterative statements while, while-else, for-else. The continue statement to skip over one iteration of a loop, the break statement to exit the loop. Nested compound statements.</p> <p>Lists and Tuples: Lists, List Functions and Methods, List Operations, Tuples</p>	15
III	<p>Dictionaries: Creating a Dictionary, Operators in Dictionary, Dictionary Methods, Using for Loop with Dictionaries, Operations on Dictionaries.</p> <p>Strings :Creating Strings, Functions of Strings, Working with Strings, Length of a String, Indexing & Slicing, Repeating & Concatenation of Strings,</p> <p>Creating Strings, Functions of Strings, Working with Strings, Length of a String, Indexing & Slicing, Repeating & Concatenation of Strings,</p> <p>Anonymous functions. List comprehensions. enumerate the methods of strings, tuples, lists, dictionaries. Using these methods for problem-solving with compound types.</p>	15

Books and References:					
Sr. No.	Title	Author/s	Publisher	Edition	Year
1	Beginning Python: From Novice to Professional,	Magnus Lie Hetland,	Apress		
2	Practical Programming: An Introduction to Computer Science Using Python 3,	Paul Gries, et al.	Pragmatic Bookshelf	2/E	2014
3	Introduction to Computer Science using Python	Charles Dierbach	Wiley		2013

List of Practical: (Can be done in python)	
1	Installing and setting up the Python IDLE interpreter. Executing simple statements like expression statement (numeric and Boolean types), assert, assignment, delete statements; the print function for output.
2	Script and interactive modes; defining a function in the two modes; executing a script; interactively executing a statement list (semicolon-separated sequence of simple statements); the input function
3	Programs based conditional constructs, for statement and the range function;
4	Programs based on lists and its Functions, interactively using the built-in functions len, sum, max, min
5	Programs related to string manipulation and String functions
6	Programs based on the while statement
7	Programs using break and continue statements.
8	Programs related to dictionaries
9	Programs using list comprehensions and anonymous functions

