C. U. Shah University, Wadhwan City

Faculty of Computer Science

Name of Program: Bachelor of Science in Information Technology (B.Sc.IT)

Semester : V

W.e.f. June-2015

Teaching & Evaluation Scheme

Sr. No	Subject Code	Subject Name	Teaching Hours/Week				Credits	Evaluation Scheme/Semester							
								Theory				Practical			Total Marks
								Sessional Exam		University Exam		Internal		Uni.	
			Th	Tu	Pr	Total		Marks	Hrs	Marks	Hrs	Pr	TW	Pr	
2	4CS05IPP1	Python Programming	4	-	-	4	4	30	1.5	70	3	-	-	-	100

Objectives:

To able to develop, automate, and test applications and systems using one of the open source programming language.

Pre-requisites:

Students should have prior programming experience and be familiar with basic concepts such as variables/scopes, flow-control, and functions.

Prior exposure to object-oriented programming concepts is not required, but definitely beneficial.

Course outline:

Ch. No	Chapter Name and Topics	Lect. Hours
1	**Introduction Python:** The history of Python, Feature of Python, Getting started with Python, Getting Started with graphics Programming, Writing a simple Program, Reading input from the Console.	08
2	**Elementary Programming :** Identifiers, Variables, Assignment Statement and Expressions, Constant, Numeric Data Types and Operators, Type Conversions, Displaying Current time	09
3	**Functions :** Common Python function, String function, Character function, formatting number and string, Drawing various Shapes, Drawing with color and fonts.	07
4	**Selection and Looping:** If statement, if-else statement, if-elif- else statement, for loop, while loop break and continue.	06
5	**User Define Function :** **D**efining function,Calling function, function with/without return values, positional & keyword arguments, passing arguments by reference values, the scope of variable, returning multiple values.	12
6	**Classes & objects :** Define Class, Define Object, object vs mutable objects, hiding Data fields, class Abstraction & Encapsulation	06
7	**File & Exception Handling :** Describes File, Text Input and Output, Exception Handling	04
	Total	52

Learning Outcomes:

Open source software programming language

Books Recommended:

1. "Exploring Python", **Timothy Budd**, Tata McGraw Hill Publication.
2. "Practice of Computing using Python 2nd Edition", **William F. Punch & Richard Enbody**, Pearson Publication.
3. "Introduction to Computing and Programming using Python 3rd Edition", **Guzdial & Ericson**, Pearson Publication.
4. "Object-Oriented Programming in Python, 1/E", **Goldwasser & Letscher**, Prentice Hall

Program List:

1. Write a Python program to Display "hello world".
2. Write a Python program to get the Python version you are using.
3. Write a Python program to display the current date and time.
4. Write a Python program which accept the user's first and last name and print them in reverse order with a space between them.
5. Write a Python program to calculate the length of a string.
6. Write a Python program to get the largest number from a list.
7. Write a Python program to count the number of characters in a string.
   Sample String : 'google.com'
   Expected Result : {'o': 3, 'g': 2, '.': 1, 'e': 1, 'l': 1, 'm': 1, 'c': 1}
8. Write a Python program to get a string made of the first 2 and the last 2 chars from a given a string. If the string length is less than 2, return instead the empty string.
   Sample String : 'w3resource'
   Expected Result : 'w3ce'
   Sample String : 'w3'
   Expected Result : 'w3w3'
   Sample String : ' w'
   Expected Result : Empty String
9. Write a Python program to sort (ascending and descending) a dictionary by value.
10. Write a Python program to remove duplicates from a list.
11. Write a Python program to clone or copy a list.
12. Write a Python program to get the Fibonacci series between 0 to 50.
13. Write a Python program to count the number of even and odd numbers from a series of numbers.

14. Write a Python program to construct the following pattern, using a nested for loop.
    *
    * *
    * * *
    * * * *
    * * * * *
15. Write a Python function that takes a list and returns a new list with unique elements of the first list.
    Sample List : [1,2,3,3,3,3,4,5]
    Unique List : [1, 2, 3, 4, 5]**.**
16. Write a Python script to display the
    a) Current date and time
    b) Current year
    c) Month of year
    d) Week number of the year
    e) Weekday of the week
    f) Day of year
    g) Day of the month
    h) Day of week
17. Write a Python program to get days between two dates.
    Sample Dates : 2000,2,28, 2001,2,28
    Expected Output : 366 days, 0:00:00
18. Write a program in Python to define a list.
19. Write a program in Python to add elements to a list.
20. Write a program in Python to delete elements from a list.