

Branch Name:	MCA
Program Code:	CS201
Course Name:	Programming with Python Practical
Course Code:	3CS2010204P
Pre-requisite Course:	Knowledge of some programming language like C, Java

Course Objective:

1. To develop proficiency in creating based applications using the Python Programming Language.
2. To be able to understand the various data structures available in Python programming language and apply them in solving computational problems.
3. To be able to do testing and debugging of code written in Python.
4. To be able to draw various kinds of plots using PyLab.
5. To be able to use generators for generating series like Fibonacci.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture	Tutorial	Practical	Credit	Theory		Practical		Total
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
-	-	3	-	-	-	25	25	50

Practical List:

1	Write a Python Program to Convert Celsius to Fahrenheit and vice a versa.
2	Write a program in python to swap two variables without using temporary variable.
3	Write a Python Program to Convert Decimal to Binary, Octal and Hexadecimal
4	Write a program to make a simple calculator (using functions).
5	Write a program in python to find out maximum and minimum number out of three user entered number.
6	Write a program which will allow user to enter 10 numbers and display largest odd number from them. It will display appropriate message in case if no odd number is found.
7	Write a Python program to check if the number provided by the user is an Armstrong number or not.
8	Write a Python program to display all the prime numbers in user entered range.
9	Write a Python program to check if the number provided by the user is a palindrome or not.
10	Write a Python program to perform following operation on given string input: a) Count Number of Vowel in given string b) Count Length of string (donot use len()) c) Reverse string d) Find and replace operation e) check whether string entered is a palindrome or not
11	Define a procedure histogram() that takes a list of integers and prints a histogram to the screen. For example, histogram([4, 9, 7]) should print the following: **** ***** *****
12	Write a program in python to implement Fibonacci series up to user entered number. (Use recursive Function)
13	Write a program in python to implement Factorial series up to user entered number. (Use recursive Function)
14	Write a program in python to implement simple interest and compound interest values on chart using PyLab.

	Show the difference between both. (Note: Use of object oriented paradigm is compulsory.)
15	Write a program in Python to implement read lines, write line using file handling mechanisms.
16	Write a program in python to implement Salary printing file read operation. (File format: EmployeeNo, name, deptno, basic, DA, HRA, Conveyance) should perform below operations. a) Print Salary Slip for given Employee Number b) Print Employee List for Given Department Number
17	1) Write a program in python to implement Railway Reservation System using file handling technique. System should perform below operations. a. Reserve a ticket for a passenger. b. List information all reservations done for today's trains. (Note: Use of object oriented paradigm is compulsory.)
18	Write a program in python to implement Library Management System using file handling technique. System should perform below operations. a. Issue a book for student. b. List information today's issued books. (Note: Use of object oriented paradigm is compulsory.)
19	Write a program in python to implement Bank System using Class and Methods and perform below Operations. (Note: Use of object oriented paradigm is compulsory.) a) Add Bank account b) Deposit of money c) withdrawal operation d) Money transfer e) Show Balance
20	Write a program in python to implement Stack using Class and Methods and perform below operations. (Note: Use of object oriented paradigm is compulsory.) a) Create Stack b) Pop c) Push d) Merge two stack e) List element
21	Write a program in python to implement Queue using Class and Methods and perform below operations. (Note: Use of object oriented paradigm is compulsory.) a) Create Queue b) Add an element c) Remove an element d) Merge two Queues e) List elements
22	Write a program in python to implement Queue using Class and Methods and perform below operations. (Note: Use of object oriented paradigm is compulsory.) a) Create Queue b) Add an element c) Remove an element d) Merge two Queues e) List elements
23	Write a program in python to implement Merge Sort. (Note: Use of object oriented paradigm is compulsory)
24	Write a program in python to implement Bubble Sort. (Note: Use of object oriented paradigm is compulsory)
25	Write a program in python to implement 0/1 Knapsack algorithm. (Note: Use of object oriented paradigm is compulsory.)
26	Write a program in python to implement Fibonacci Series and Factorial using memo. (i.e. FastFibo & FastFact) (Note: Use of object oriented paradigm is compulsory.)

Text Books:

1. Allen B. Downey, "Think Python: How to Think Like a Computer Scientist", 2nd edition,

updated for Python 3, Shroff/O'Reilly Publishers, 2016.

- R. Nageswara Rao, "Core Python Programming", dreamtech
- Python Programming: A Modern Approach, Vamsi Kurama, Pearson

References Books:

- Core Python Programming, W.Chun, Pearson.
- Introduction to Python, Kenneth A. Lambert, Cengage
- Learning Python, Mark Lutz, Orielly

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	To read, write, execute by hand simple Python programs.	2 Understanding
CLO2	To study simple Python programs for solving problems.	1 Remembering 2 Understanding 3 Applying
CLO3	To decompose a Python program into functions.	3 Applying 2 Remembering
CLO4	To represent compound data using Python lists, tuples, and dictionaries.	2 Understanding,
CLO5	To read and write data from/to files in Python Programs	1 Remembering 2 Understanding
CLO6	To understand Exception handling and create a program using it.	3 Applying

Mapping of CLOs with Pos & PSOs

Course Learning Outcomes	Program Out comes (POs)												Program Specific Outcomes (PSOs)	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CLO1		M	L	M		M	H	L	M		M		H	M
CLO2	M	L			H	L		L		M	L	L	M	M
CLO3		L	M		M	M		L	M	M		L	M	L
CLO4	L		M	L	M		M		L		L		M	M
CLO5	M	L		M	L			M		L		L	M	L
CLO6	M		M		L	M			M	M		L	L	M

H:High, M:Medium, L:Low