20MSM511P					Object Oriented and Python Programming Lab					
Teaching Scheme					Examination Scheme					
L	T	P	C	Hrs/Week	Theory			Practical		Total Marks
					MS	ES	IA	LW	LE/Viva	
0	0	2	1	2	---	---	---	50	50	100

COURSE OBJECTIVES

- Understanding about object oriented programming.
- To make aware the concept of classes and objects.
- Understanding the process of exposing essential data and hiding the low level data.
- Implementation of object oriented programming concepts in PYTHON.
- Understand the basics of constructors, destructors, inheritance and polymorphism.

LIST OF EXPERIMENTS

1. Program illustrating use of inline functions and default arguments.
2. Program implementing the concept of function overloading.
3. Program implementing the concept of class/ nesting of member function.
4. Program for processing shopping list.
5. Program implementing the concept of static member function.
6. Program illustrating the concept of arrays of objects/ objects as arguments.
7. Program illustrating the concept of swapping private data of classes.
8. Program to write a class to represent a bank account including the following members: data members
   (i) Name of the depositor
   (ii) Account number
   (iii) Types of account
   (iv) Balance amount in the account
   Member functions: to assign initial values, to deposit an account, to withdraw an amount after checking the balance, to display name and balance.Write a main program to test the program.
9. Program implementing the concept of class with constructors or destructors/ overloaded constructors/ dynamic initialization of constructors.
10. Programs carrying out the concept of operator overloading and type conversions.
11. Creation of class **MAT** of size $m \times n$ and defining all possible matrix operations for **MAT** type objects.
12. Programs carrying out the concept of single inheritance public and private.

COURSE OUTCOMES

On completion of the course, student will be able to

CO1 – Apply the object oriented programming paradigm to write computer program.
CO2 – Demonstrate the ability to apply concepts of OOP.
CO3 – Apply data structures available in Python library.
CO4 – Analyze mathematical problems by writing simple program in OOP approach.
CO5 – Evaluate scientific/ mathematical problem by writing simple program in PYTHON.
CO6 – Create/manipulate object belonging to the class.

TEXT/REFERENCE BOOKS

1. Object-Oriented Programming with C++, E. Balagurusamy, Tata McGraw Hill.
2. Object Oriented Programming & C++, R. Rajaram, New Age International.
3. C++ The complete Reference, H. Schildt, 4th Ed, Tata McGraw Hill.
4. Object-Oriented Programming with C++ and JAVA, D. Samanta, PHI.
5. John V Guttag. “Introduction to Computation and Programming Using Python”, Prentice Hall of India.
6. Allen Downey, Jeffrey Elkner and Chris Meyers "How to think like a Computer Scientist, Learning with Python", Green Tea Press.