

Programme Code:	M.Sc. PHY			Programme Title:	Master of Physics	
Course Code:	23VAD301			Title	Batch:	2023 – 2024
				Value Added Course: Python Django	Semester:	III
Lecture Hrs./Week or Practical Hrs./Week	-	Tutorial Hrs./Sem.	-		Credits:	GRADE

Course Objective

To introduce Python programming to solve scientific and technological problems

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	Acquire the knowledge to analyze the problem	K1 / K2
CO2	Plan to write the algorithm of a program with the knowledge of mathematical operators, logical operators, conditional and looping statements	K3
CO3	Analyze the problems in various domains of physics to write the program using python codes	K4
CO4	Explain clearly the importance of different function statements and pass the arguments between functions	K5
CO5	Device and compile the python programming for application in the field of science and technology	K6

Mapping

PO / PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2
CO1	M	M	M	H	H	L	H	M
CO2	M	H	M	L	H	L	H	H
CO3	L	M	H	M	M	M	M	M
CO4	M	L	L	H	H	H	M	H
CO5	L	M	L	M	H	H	M	H

H – High; M – Medium; L – Low

Units	Content	Hrs
Unit I	Basics of Programming Basis of programming– IDLE - variables and data types – strings – manipulating data – operators - syntax	10
Unit II	Control Statements, Looping, File Handling Control statements: if, if-else, nested if-else – loops (for, while); nested loops – break – continue – pass - text files – file handling and directories – - printing on screen – reading and writing of data in a file - opening and closing a file	10
Unit III	Functions and Modules Defining a function - Calling a function – Types of functions – Function arguments – python modules - Importing module – commonly used modules – writing and executing python program for few scientific problems	10
	Total Contact Hrs	30

Pedagogy and Assessment Methods:

Seminar, Power Point Presentation, Chalk and talk, Quiz, Assignments, Group Task.

Text Book

S.NO	AUTHOR	TITLE OF THE BOOK	PUBLISHERS \ EDITION	YEAR OF PUBLICATION
1	Kenneth Lambert	Fundamentals of Python: First Programs	Course Technology, Cengage Learning	2012

Reference Book

S.NO	AUTHOR	TITLE OF THE BOOK	PUBLISHERS \ EDITION	YEAR OF PUBLICATION
1	Rashi Gupta	Making Use of Python	Wiley Publishing, Inc., New York	2002
2	Related online contents [MOOC, SWAYAM, NPTEL, Websites etc] www.python.org			



Dr. T.E. Manjulavalli, M.Sc.,M.Phil.,Ph.D.,
Assistant Professor and Head
PG & Research Department of Physics
NGM College (Autonomous)
Pollachi - 642 001, Tamil Nadu.



PRINCIPAL
N. G. M. COLLEGE, POLLACHI