

MANGALORE UNIVERSITY

DEPARTMENT OF COMPUTER SCIENCE

MASTER OF COMPUTER APPLICATIONS (MCA) PROGRAMME

MCAH502 :PYTHON PROGRAMMING		
Hours/Week: 4 Credits : 4		I.A. Marks: 30 Exams. Marks: 70
Course Outcomes: CO1: Explain basic principles of Python programming language CO2: Problem solving and programming capability. CO3: Implement object oriented concepts, CO4: Implement database and GUI applications.		
	UNIT-I	12 Hours
Introduction to python, the concept of data types ; variables, assignments; immutable variables; numerical types; arithmetic operators and expressions; comments in the program; understanding error messages; Conditions, Boolean logic, logical operators; ranges; Control statements : if-else, loops (for, while); short circuit evaluation; Strings and text files; manipulating files and directories, os and sys modules; text files : reading/writing text and Numbers from/to a file; creating and reading a formatted file (csv or tab-separated).		
	UNIT-II	12 Hours
String manipulations : subscript operator, indexing, slicing a string; strings and number System: converting strings to numbers and vice versa. Binary, octal, hexadecimal numbers Lists, tuples, and dictionaries; basic list operators , replacing, inserting, removing an element; searching and sorting lists; dictionary literals, adding and removing keys, accessing and Replacing values; traversing dictionaries .		
	UNIT-III	12 Hours
Design with functions : hiding redundancy, complexity; arguments and return values; formal vs. actual arguments, named arguments. Program structure and design. Recursive functions . Classes and OOP: classes, objects, attributes and methods; defining classes; design with classes, data modelling; persistent storage of objects inheritance, polymorphism, operator overloading (<code>_eq_</code> , <code>_str_</code> , etc); abstract classes; exception handling, try block		

	UNIT-IV	12 Hours
Python database application programmer's interface (DB- API), connection and cursor objects, Type objects and constructors, python database adapters. Creating simple web clients, introduction to CGI, CGI module, building CGI applications, python web application frameworks.		
REFERENCE BOOKS 1. Kenneth A. Lambert, The Fundamentals of Python: First Programs, 2011, Cengage Learning, 2. Magnus Lie Hetland, Beginning Python from Novice to Professional, Second Edition. 3. Mark Summerfield, Programming in Python 3 - A Complete Introduction to the Python Language, Second Edition. 4. Y. Daniel Liang, “Introduction to Programming Using Python”, Pearson 5. Chun, J Wesley, Core Python Programming, 2nd Edition, Pearson, 2007 Reprint 2010. 6. David Beazley and Brian K. Jones, Python Cookbook, Third Edition, Shroff Publishers & Distributors Pvt. Ltd. 7. Mark Lutz, Learning Python FIFTH EDITION Mark Lutz. 8. Mark Lutz, Programming Python (English) 4th Edition. 9. Testing Python, David Sale, Wiley India (P) Ltd.,		

