



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
<u>Course Outcomes:</u>		
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
<p>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.</p>		
<p>REFERENCE BOOKS</p> <ol style="list-style-type: none"> 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., 		

