SEMESTER – II

Course Code	PCA20C04J	Course Name	PYTHON PROGRAMMING	Course Category	C	Professional Core Course	L	T	P	C
							3	0	2	4

Pre-requisite Courses	Nil	Co-requisite Courses	Nil	Progressive Courses	Nil
Course Offering Department	Computer Applications		Data Book / Codes/Standards	Nil	

Course Learning Rationale (CLR):	The purpose of learning this course is to,
CLR-1 :	To understand why Python is a useful scripting language for developers.
CLR-2 :	To learn how to use lists, tuples, and dictionaries in Python programs.
CLR-3 :	To learn how to design and program Python applications.
CLR-4 :	To learn how to identify Python object types.
CLR-5 :	To learn how to design object-oriented programs with Python classes.
CLR-6 :	To learn how to use exception handling in Python applications for error handling.

Course Learning Outcomes (CLO):	At the end of this course, learners will be able to:	Learning		
		1	2	3
		Level of Thinking (Bloom)	Expected Proficiency (%)	Expected Attainment (%)
CLO-1 :	Appreciate the basic and advanced features of core language built ins	2	85	80
CLO-2 :	Handle and control system/OS level features	3	85	80
CLO-3 :	Communicate using sockets	3	85	80
CLO-4 :	Write client and server side scripts.	3	85	80
CLO-5 :	Design and implement basic applications with database connectivity.	3	85	80
CLO-6 :	Extensive support libraries	3	85	80

Program Learning Outcomes (PLO)														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Disciplinary Knowledge	Critical Thinking	Problem Solving	Analytical Reasoning	Research Skills	Team Work	Scientific Reasoning	Reflective Thinking	Self-Directed Learning	Multicultural Competence	Ethical Reasoning	Community Engagement	ICT Skills	Leadership Skills	Life Long Learning
L	H	H	H	H	M	-	H	M	H	-	H	-	-	-
L	H	H	H	H	-	-	M	M	L	-	H	-	-	-
L	H	H	H	H	-	-	M	M	L	-	H	-	-	-
L	H	H	H	H	-	-	M	M	L	-	H	-	-	-
L	H	H	H	H	-	-	M	M	L	-	H	-	-	-
L	H	H	H	H	-	-	M	M	L	-	H	-	-	-

Duration (hour)		15	15	15	15	15
S-1	SLO-1	*Introduction to Python*	*Iterations and Comprehensions*	*System tools*	*Socket Programming*	*Introduction to tkinter*
S-2	SLO-1	*Python Interpreter and its working*	*Handling text files Modules*	*OS and Sys modules*	*Handling Multiple Clients*	*Top Level Windows*
S-3	SLO-1	*Syntax and Semantics*	*Classes*	*Directory Traversal tools*	*Client side scripting*	*Dialogs, Message and Entry*
S-4-S-5	**SLO-1**	***Lab 1:Python Numbers, List***	**Lab 4: Creating Class in Python**	***Lab7: process standard streams.***	***Lab10: Client Socket Methods***	***Lab 13: Represent compound data using Python***
S-5	SLO-1	*Data Types*	*OOP Exception Handling*	*Parallel System tools*	*urlib Server Side Scripting*	*Event handling, Menus*

S-6	SLO-1	*Assignments*	*Exception Handling Strings*	*threading and queue*	*CGI Scripts with User Interaction*	*List boxes and Scrollbars*
S-7	SLO-1	*Expressions*	*Regular Expressions*	*Program Exits*	*Passing Parameters*	*Text, SQL Database interfaces with sqlite3*
S-9-S10	**SLO-1**	***Lab 2: Tuple, Strings, Set***	***Lab 5: Creating Object in Python***	***Lab 8 :Command-line arguments, shell variables***	***Lab 11: General Socket Methods***	***Lab 14: Lists, tuples, dictionaries.***
S-11	SLO-1	*Control Flow Statements*	*try statement in Python*	*system interfaces by focusing on tools and techniques*	XML Parser Architectures and APIs	*Basic operations and table load scripts.*
S-12	SLO-1	*Sequences, Dictionaries*	User-Defined Exception in Python	*binary files, tree walkers*	Parsing XML with SAX APIs	*SQLite database from your Python program.*
S-13	SLO-1	*Functions and lambda expressions*	*Use of Inheritance in Python*	*Python's library support for running programs in parallel.*	The parse Method	*Design and implement basic applications*
S-14-S15	**SLO-1**	***Lab 3: Lambda & Filter in Python Examples***	***Lab 6:* Creating Methods in Python**	***Lab 9: Python scripts here perform real tasks.***	***Lab 12:Creating Thread Using Threading Module***	***Lab 15: Read and write data from/to files in Python Programs***

Learning Resources	*1.Mark Lutz ,"Learning Python", O Reily, 4th Edition, 2009, ISBN: 978-0-596-15806-4.*
	1.Mark Lutz ,"Programming Python ", O Reily, 4th Edition, 2010, ISBN 9780596158118
	2.Tim Hall and J-P Stacey ,"Python 3 for Absolute Beginners" , 2009, ISBN:9781430216322
	3.Magnus Lie Hetland , "Beginning Python: From Novice to Professional", 2nd Edition, 2009, ISBN:9781590599822.

Learning Assessment

Level	Bloom's Level of Thinking	Continuous Learning Assessment (50% weightage)								Final Examination (50% weightage)	
		CLA – 1 (10%)		CLA – 2 (10%)		CLA – 3 (20%)		CLA – 4 (10%) #			
		Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice
Level 1	Remember	20%	20%	15%	15%	15%	15%	15%	15%	15%	15%
	Understand										
Level 2	Apply	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
	Analyze										
Level 3	Evaluate	10%	10%	15%	15%	15%	15%	15%	15%	15%	15%
	Create										
	Total	100 %		100 %		100 %		100 %		100 %	

CLA – 4 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, Conf. Paper etc.,

Course Designers		
Experts from Industry	**Experts from Higher Technical Institutions**	**Internal Experts**
Mr.G.Muruganandam, Group Project Manager, HCL Technologies, Chennai	*Dr.S.Gopinathan, Professor, University of Madras, Chennai*	*Mr.D.B.Shanmugam SRMIST*
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