

20ES1152/20ES1255 Problem Solving and Programming with Python Lab

Offering Branches	CIVIL,EEE,ECE,ME		
Course Category:	Engineering Sciences	Credits:	1.5
Course Type:	Practical	Lecture-Tutorial-Practical:	0-0-3
Prerequisites:	NIL	Continuous Internal Evaluation:	30
		Semester End Evaluation:	70
		Total Marks:	100
Course Outcomes			
Upon successful completion of the course, the student will be able to:			
CO1	Apply visual programming concepts, flowchart design techniques and Python programming constructs for solving problems.		L3
CO2	Conduct experiments as an individual, or team member by using Scratch/Raptor tools and Python programming.		-
CO3	Develop an effective report based on various programs implemented.		-
CO4	Apply technical knowledge for a given problem and express with an effective oral communication.		L3
CO5	Analyze outputs generated through Scratch/Raptor tools and Python programming.		L4
Course Content			
Expt. No.	Contents	Mapped CO	
1	Apply Visual Programming Concepts using Scratch tool.	CO1,CO2,CO3,CO4,CO5	
2	Solve various computational problems by designing flowcharts using Raptor tool.	CO1,CO2,CO3,CO4,CO5	
3	Python programs on usage of operators.	CO1,CO2,CO3,CO4,CO5	
4	Python Programs to demonstrate decision making and branching (Selection)	CO1,CO2,CO3,CO4,CO5	
5	Python programs to demonstrate iterative statements.	CO1,CO2,CO3,CO4,CO5	
6	Python programs to demonstrate functions	CO1,CO2,CO3,CO4,CO5	
7	Python programs to perform operations on strings, regular expressions with built – in functions	CO1,CO2,CO3,CO4,CO5	
8	Python programs to handle file operations.	CO1,CO2,CO3,CO4,CO5	
9	Python programs to apply various data structures.	CO1,CO2,CO3,CO4,CO5	
10	Installing, importing and accessing numpy and pandas packages	CO1,CO2,CO3,CO4,CO5	

Learning Resources	
Text Books	<ol style="list-style-type: none"> 1. An introduction to programming and algorithmic reasoning using raptor, Weingart, Dr. Troy, Brown, Dr. Wayne, 2018, CreateSpace (an Amazon.com Company) 2. Python Programming using Problem Solving Approach, Reema Thareja, 2017, OXFORD University Press
Reference Books	<ol style="list-style-type: none"> 1. Core Python programming, R. Nageswara Rao, 2018, Dreamtech press. 2. Programming with python, T R Padmanabhan, 2017, Springer.
e-Resources & other digital material	<ol style="list-style-type: none"> 1. http://fusecontent.education.vic.gov.au/9f79537a-66fc-4070-a5ce-e3aa315888a1/scratchreferenceguide14.pdf 2. https://raptor.martincarlisle.com/ 3. http://www.ict.ru.ac.za/Resources/cspw/thinkcspy3/thinkcspy3.pdf

Course Coordinator

HOD