

Course Title:				Programming using Python					
Course Code:				CSL DC102					
Course Coordinator				Sudesh Kumar					
Credits				3					
<b>Evaluation Scheme Total 100 Marks</b>									
Quiz (Total 20 Marks)				Assignment/Project (Total 20 marks) (Minimum Two Assignments or one Project)		Mid-Term	Major Examination	Total	
Quiz I (5 marks)	Quiz II (5 marks)	Quiz III (5 marks)	Quiz IV (5 marks)			20 marks) (1 ½ Hour Duration)	(40 marks) (3 Hour Duration)	100 Marks	
<b>WEEKS</b>				<b>TOPICS TO BE COVERED</b>					
Week 1				Introduction to python, importance of IDEs like Spyder (Anaconda)/PyCharm for professional programming, explore Python shell as a calculator and for inputting Python expressions directly. HelloWorld program in Python script					
Week 2				Python keyword and Identifiers, Indentation, Comments, Data Types in. Operators in Python: comparison, arithmetic, logical, Boolean, bitwise, assignment.					
Week 3				Input and Output in Python, if-else , for loop					
Week 4				while loop, break, pass, continue					
Week 5				Python: numbers, list,					
Week 6				tuple,					
Week 7				strings,					
Week 8				Set, dictionary, conversion between various data types					
Week 9				creating Functions, functions with arguments, returning values form functions, lambda expressions, recursion, global and local variables.					
Week 10				Importing other modules/packages and using their functions, creating random numbers/random-choice to create programs for simple guessing games like Rock –Paper-Scissors. Problems on 1D/2D/3D arrays using list. Problem solving using dictionary as look-up table.					
Week 11 (17 <sup>th</sup> -21 <sup>st</sup> March, 2025)				Mid-Term					
2 <sup>nd</sup> May, 2025				Showing of Mid-Term Answer Sheets					

Week 13	Basics of Object oriented programming: Class and Object. Defining variables and functions inside class. Creating objects, Inheritance, Multiple and Multi Level Inheritance,
Week 14	Function over-riding, the concept of composing objects of a different class in an object, problems on object composition
Week 15	GUI creation using Python's de-facto GUI package like tkinter or alternative packages like: wxPython, PyQt(PySide), Pygame, Pyglet, and PyGTK. Creating labels, buttons, entry (textbox), combobox, checkbutton,
Week 16	radiobutton, scrolledText (textarea), spinbox, progressbar, menubar, filedialog, tabs etc. Creating GUI simple games like Tic-Tac-Toe
Week 17 (5 <sup>th</sup> -9 <sup>th</sup> May, 2025)	Revision Week
Week 18 (13 <sup>th</sup> – 22 <sup>nd</sup> May, 2025)	Major Examinations
29 <sup>th</sup> May, 2025	Showing of Major Exams Answer Sheets

**Course Outcomes:**

- CO1:** Understand Python basics, including IDE usage, data types, operators, and basic programming constructs for effective scripting.
- CO2:** Implement control structures, functions and data structures like lists, tuples, and dictionaries for problem-solving.
- CO3:** Apply object-oriented programming concepts such as classes, objects, inheritance, and polymorphism to design robust Python programs.
- CO4:** Design and develop graphical user interfaces (GUIs) using libraries like tkinter to create interactive applications.

**Recommended Books:**

1. Think Python 2nd Edition - How to Think Like a Computer Scientist, Allen B Downey, O'Reilly publication
2. Learn Python 3 the Hard Way, Zed A. Shaw, Pearson publication
3. Dive into Python 3, Mark Pilgrim, Apress publication

Calendar of Quizzes/Assignment etc. to be provided as per below details and exact dates to be fixed in consultation with other course coordinators to avoid overlap of Quizzes of different courses.

Component	Date
Quiz-I	27 <sup>th</sup> -31 <sup>st</sup> , January 2025
Quiz-II	24 <sup>th</sup> -28 <sup>th</sup> February, 2025

Assignment-I	10 <sup>th</sup> -12 <sup>th</sup> February, 2025
Mid-Term	17-21 <sup>st</sup> March, 2025
Assignment-II/ Project Submission	21 <sup>st</sup> – 24 <sup>th</sup> April, 2025
Quiz-III	7 <sup>th</sup> – 11 <sup>th</sup> April, 2025
Quiz-IV	28 <sup>th</sup> April-2nd, May, 2025
Major Exam	13 <sup>th</sup> – 22 <sup>nd</sup> May, 2025

Note:

1. One surprise Quiz may be fixed out of Quiz-II, Quiz-III or Quiz-IV.
2. In case of any deviation in evaluation methodology for courses such as AEC/VAC/SEC shall be mentioned accordingly. Thus, same shall be approved by the next BOS of school if not done earlier.

*Sudek*  
24/01/2025

Signature of Course Coordinator :

School: Computer Science & Engineering		Program: B.Tech. (C.S.E.)		Semester: II
Course Title:		Python Programming Lab		
Course Code:		CSP DC102		
Course Coordinator:		Sudesh Kumar		
L-T-P: 0-0-2		Credits: 1		
Evaluation Scheme (Total Marks 100)				
Lab Exam (40 Marks)		Lab Record	Viva-Voice	Total
Written	Lab- Performance	30 Marks	30 Marks	100 Marks
WEEKS		DETAILS OF EXPERIMENTS TO BE PERFORMED		
Week1		Lab. 1 Basic Data Types ( Annexure A )		
Week 2		Lab. 2 Operators ( Annexure A )		
Week 3		Lab. 3 If Else ( Annexure A )		
Week 4		Lab. 4 Loops ( Annexure A )		
Week 5		Lab. 5 Patterns( Annexure A )		
Week 6		Lab. 6 Strings( Annexure A )		
Week 7		Lab. 6 Strings continue( Annexure A )		
Week 8		Lab. 7 LIST( Annexure A )		
Week 9		Lab. 7 LIST Continue( Annexure A )		
Week10		Lab. 8 TUPLE( Annexure A )		
Week 11		Lab. 9 SET( Annexure A )		
Week12		Lab. 10 DICT( Annexure A )		
Week13		Lab. 11 Function( Annexure A )		
Week 14		Lab. 12 OOP( Annexure A )		
Week 15		Project		
Week16		Project Continue		
Week 17		Lab Exam		

**Course Outcomes:**

- CO1:** Demonstrate the use of Python's basic data types, operators, and control structures to solve problems effectively.
- CO2:** Apply Python's built-in data structures such as lists, tuples, sets, and dictionaries for data manipulation and problem solving.
- CO3:** Design and implement programs using functions and object-oriented programming concepts to enhance modularity and code reuse.

**Recommended Books:**

1. Think Python 2nd Edition - How to Think Like a Computer Scientist. Allen B Downey. O'Reilly publication
2. Learn Python 3 the Hard Way. Zed A. Shaw, Pearson publication
3. Dive into Python 3, Mark Pilgrim, Apress publication

Sudev  
04/01/2025

**Signature of Course Coordinator :**