Daffodil Polytechnic Institute, Institute Code: 50238

Lesson Plan – Academic Session: August 2023 to January 2024

Marks	Grade Point	Letter Grade	Marks	Grade Point	Letter Grade
80>	4.00	A+	55-59	2.75	B-
75-79	3.75	A	50-54	2.50	C+
70-74	3.50	A-	45-49	2.25	C
65-69	3.25	B+	40-44	2.00	D
60-64	3.00	B	0-39	0.00	F

Subject Teacher : Md. Rajib Ahamed (Instructor).
Subject Name : Python Programming
Subject Code : 28521
Technology : Computer Science & Technology
Semester : 2nd
Reference Book : (1). Python Programming (Publisher: Hoque Publication)
(2). Learning Python-Mark Lutz (5th Edition)
(3). Python Programming: An Introduction to Computer Science-John Zelle (3rd Edition)
(4). Python for Data Analysis: Data Wrangling with Pandas, NumPy and IPython-Wes Mckinney (2nd Edition)
(5). Learn Python the Hard Way-ZED SHAW (3rdEdition)

eLearning Course Link: *https://dpi.df.daffodil.family/slides/python-programming-for-2nd-cst-28521-369*

INTENTION	
Class Time Distribution (90 Minutes)	
Greetings & Follow up absent students	5
Previous class review	10
Present class topic discussion	60
Present class topic review & Feedback	10
Next class topic	5
Total:	**90**

Mark Distribution (for 150 Marks)			
Theory Marks		**Practical Marks**	
Midterm	20	PC	25
Class test	10	PF	25
Quiz test	10	-	-
Final	60	-	-
Total:	**100**	**Total:**	**50**

Subject Aims:

To provide the students with an opportunity to acquire knowledge, skills and attitude in the area. To develop knowledge and skill on programming and problem solving. To develop knowledge and skillto create, compile, debug & execute a program.

Subject Outcome:

After undergoing the subject, students will be able to develop knowledge of the Basics of programming language, Basics of python, Variables and data types, String processing, Python operators, Branch, Loop, List, Tuple, Set, Dictionary structures, Function, and I/O operation of Python Programming Language.

Lecture	Chapter	Learning Area	Learning Outcome	Class/Lab Supporting Equipment's
Lecture-1	**Chapter-1: (Basics of Programming)**	1.1 State Computer Programming. 1.2 Explain Programming Language and its Classification. 1.3 State Translator Programs. 1.4 Define Algorithm and Flowchart.	After the class students will be able to learn: ❖ To know about Basic programming (such as computer program, programming, generation of programming, translator.	➢ Projector. ➢ Computer. ➢ White board & Marker YouTube link: https://www.youtube.com/watch?v=gmiAel-Bm-o
Lecture-2	**Chapter-1: (Basics of Programming)**	1.5 Explain the uses of Flowchart symbols. 1.6 Prepare Algorithm and Flowchart for simple problems. 1.7 Explain the Process of Program Planning.	After the class students will be able to learn: ❖ To know about Algorithm and Flowchart.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=jX7K1fANh70
Lab-1	**Software Installation**	1. Install Python 2. Install PyCharm IDE	After the Lab class students will be able to learn: ❖ To learn about how install python and PyCharm software.	➢ Projector. ➢ Computer. ➢ VSCode, PyCharm, Anaconda, IDLE, Jupiter notebook. YouTube link: https://www.youtube.com/watch?v=QJtuhoOfGp0&list=PLlBKlxyCgmsCYJLq9qc5QzaU-oBFJN79B
Lecture-3	**Chapter-2: (Basics of Python)**	2.1 State the features of Python. 2.2 Explain Identifiers and Keywords.	After the class students will be able to learn: ❖ To know about Basics of python, history of python, structure of python,identifiers and keywords.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=ajY-vNZoKXQ
Lecture-4	**Chapter-2: (Basics of Python)**	2.3 Explain Lines, Indentation, Multi-Line Statements. 2.4 State the uses of Quotation and Comments in Python. 2.5 Describe Command Line Arguments.	After the class students will be able to learn: ❖ To know about Basics Lines, Indentation, Multi-LineStatements and Multiple Statements ona Single Line.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=jVIrlXkD2CY
Lab-2	**Practice on variable related problem.**	1. Practices data type 2. Variable related problem	After the Lab Class students will be able to learn: ❖ To practice and known about data	➢ Projector. ➢ Computer. ➢ PyCharm, Anaconda, IDLE, Jupiter notebook. YouTube link:

			types and variables related different types of problems.	https://www.youtube.com/watch?v=SbApaY6kbOk&list=PLgH5QX0i9K3rz5XqMsTk41_j15_6682BN&index=6
Lecture-5	**Class Test-01**	Chapter 1 & Chapter 2(Basics of Programming andBasics of Python).	❖ To know about basic programming and basicpython programming.	• **Marker.** • **Exam answer script paper.** • **Question paper.**
Lecture-6	**Chapter-3: (Variables and Data Types)**	3.1 State variables. 3.2 Explain the rules of naming variables. 3.3 Assign Values to Variables.	After the class students will be able to learn: ❖ To know about assigning values to variables, multiple assignments.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=VR72eGYw5hw
Lecture-7	**Chapter-3: (Variables and Data Types)**	3.4 Describe Standard Data Types. 3.5 Explain Data Type Conversion. 3.6 Write programs using variable/multiple variables.	After the class students will be able to learn: ❖ To know about Data types, Data type conversion and multiple variables etc.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=2J-CpEQlEqc
Assignment-01		**Assignment on lecture 01–03**	❖ **To build up their confidence level & increase creativity on chapter- 01- 03**	**Must be submitted within the next two lectures.**
Lecture-8	**Quiz Test-01**	Chapter 3 (Variables and Data Types)	❖ To know about variables and data types.	• **Marker.** • **Exam answer script paper.** • **Question paper.**
Lab-3	**Practice on variable and data types related problem.**	1. Practices data type 2. Variable related problem	After the Lab Class students will be able to learn: ❖ To practice and known about data types and variables related different types of problems.	➢ Projector. ➢ Computer. ➢ PyCharm, Anaconda, IDLE, Jupiter notebook. YouTube link: https://www.youtube.com/watch?v=SbApaY6kbOk&list=PLgH5QX0i9K3rz5XqMsTk41_j15_6682BN&index=6
Lecture-9	**Chapter-4: (Python Operators)**	4.1 State Operators and their types. 4.2 Describe Arithmetic Operators, Comparison Operators, and Logical Operators.	After the class students will be able to learn: ❖ To know about python operators and their types. ❖ Known about Arithmetic Operators, Comparison Operators, and	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=C3DlPz8LLIA

			Logical Operators etc.	
Lecture-10	**Chapter-4: (Python Operators)**	4.3 State Assignment Operators, Bitwise Operators, Membership Operators, and Identity Operators. 4.4 Explain Operators Precedence. 4.5 Calculate the value of expression according to the precedence of operators.	After the class students will be able to learn: ❖ To know about Assignment Operators, Bitwise Operators, Membership Operators, and Identity Operators. ❖ To know about Operators Precedence.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=C3DlPz8LLIA
Lab-4	**Practice on python operators related problem.**	1. Practices data type. 2. Variable related problem. 3. Python operators related problem.	After the Lab Class students will be able to learn: ❖ To practice and known about operators, data types and variables related different types of problems.	➢ Projector. ➢ Computer. ➢ PyCharm / Anaconda / IDLE / Jupiter notebook. YouTube link: https://www.youtube.com/watch?v=Cmoem6s-svs
Lecture-11	**Class Test-02**	Chapter 4 (Python Operators)	❖ To know about Python Operators.	• **Marker.** • **Exam answer script paper.** • **Question paper.**
Lecture-12	**Chapter-5: (Branching Structure)**	5.1 State conditional and unconditional branching with flowchart. 5.2 Explain the syntax of if, if .... else, if....elif statements.	After the class students will be able to learn: ❖ To know about conditional and unconditional branching with flowchart. ❖ Syntax of if, if .... else, if....elif statements etc.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=zKBOjldz0MU
Lecture-13	**Chapter-5: (Branching Structure)**	5.3 Draw the flowchart of if, if .... else, if....elif statements. 5.4 Write programs using if, if .... else, if....elif statements.	After the class students will be able to learn: ❖ To know about the flowchart of if, if .... else, if....elif statements. ❖ Program writing by using if, if .... else, if....elif	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=1UgUSBRz2qU

			statements etc.	
Lecture-14	**Quiz Test-02**	Chapter 5 (Branching Structure)	❖ To know about branching structure.	• **Marker.** • **Exam answer script paper.** • **Question paper.**
Lab-5	**Practice on branching structure related problem.**	1. Practices data type. 2. Variable related problem. 3. Python operators related problem. 4. Python branching structure related problem.	After the Lab Class students will be able to learn: ❖ To practice and known about operators, branching structure, data types and variables related different types of problems.	➢ Projector. ➢ Computer. ➢ PyCharm / Anaconda / IDLE / Jupiter notebook. YouTube link: https://www.youtube.com/watch?v=1UgUSBRz2qU
	Mid Term Exam	**Chapters: 1-5**		
Lecture-15	**Chapter-6: (Looping Structure)**	6.1 State conditional and unconditional loop with flowchart. 6.2 Explain the syntax of for & while statements. 6.3 Draw the flowchart of for & while statements.	After the class students will be able to learn: ❖ To know about the state conditional and unconditional loop with flowchart. ❖ To know about the syntax and flowchart drawing of for & while statements.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=dfkVHo3rQMg
Lecture-16	**Chapter-6: (Looping Structure)**	6.4 Describe nested loop. 6.5 Write programs using for, while & nested loop.	After the class students will be able to learn: ❖ To describe nested loop and program writing by using for, while & nested loop.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=UJNGZI2nbq0
Assignment-02		**Assignment on lecture 04–06**	❖ **To build up their confidence level & increase creativity on chapter- 04- 06**	**Must be submitted within the next two lectures.**
Lab-6	**Practice on Looping related problem.**	1. Practices data type, Variable, Operators related problem. 2. Python branching structure related problem. 3. Python looping structure	After the Lab Class students will be able to learn: ❖ To practice and known about	➢ Projector. ➢ Computer. ➢ PyCharm / Anaconda / IDLE / Jupiter notebook.

		related problem.	operators, branching and loop structure, data types and variables related different types of problems.	YouTube link: https://www.youtube.com/watch?v=Umt5YNcy0kI
Lecture-17	**Chapter-7: (List Structure)**	7.1 Define List structure. 7.2 Assign Values in List. 7.3 Explain Updating and Deleting List Elements.	After the class students will be able to learn: ❖ To know about Lists(lists, assigning values in list, updating and deleting List Elements etc.)	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=V0zzqVn3Tn8
Lecture-18	**Chapter-7: (List Structure)**	7.4 State Basic List Operations. 7.5 Explain Built-in List Functions and Methods. 7.6 Write programs using List.	After the class students will be able to learn: ❖ To know about basic List operations. ❖ Built-in List Functions and Methods. ❖ Program writing by using List.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=YVov0H3JRkc
Lab-7	**Practice on List structure related problem.**	1. Python list structure related problem.	After the Lab Class students will be able to learn: ❖ To practice and known about list structure related different types of problems.	➢ Projector. ➢ Computer. ➢ PyCharm / Anaconda / IDLE / Jupiter notebook. YouTube link: https://www.youtube.com/watch?v=V0zzqVn3Tn8
Lecture-19	**Class Test-03**	Chapter 6 and 7 (Python looping and list structure)	❖ To know about Python looping and list structure.	• **Marker.** • **Exam answer script paper.** • **Question paper.**
Lecture-20	**Chapter-8: (Tuples Structure)**	8.1 Define Tuple. 8.2 Distinguish between List & Tuple. 8.3 Assign Values in Tuple. 8.4 Explain Updating and Deleting Tuple Elements.	After the class students will be able to learn: ❖ To know about definition of Tuple and distinguish between List & Tuple. ❖ Assign Values in Tuple. ❖ Updating and Deleting Tuple Elements.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=BOysCcj2w04
Lab-8	**Practice on Tuples structure**	1. Python tuples structure related problem.	After the Lab Class students will be able to learn:	➢ Projector. ➢ Computer. ➢ PyCharm / Anaconda /

	related problem.		❖ To practice and known about tuples structure related different types of problems.	IDLE / Jupiter notebook. YouTube link: https://www.youtube.com/watch?v=BOysCcj2w04
Lecture-21	**Chapter-8: (Tuples Structure)**	8.5 Describe Basic Tuple Operations. 8.6 Explain Built-in Tuple Functions. 8.7 Write program using Tuples.	After the class students will be able to learn: ❖ To know about basic Tuple operations. ❖ To know about Built-in Tuple functions. ❖ Program writing by using Tuples.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=BOysCcj2w04
Lecture-22	**Quiz Test-03**	Chapter 8 (Tuples Structure)	❖ To know about tuples structure.	• **Marker.** • **Exam answer script paper.** • **Question paper.**
Lab-9	**Practice on Tuples structure related problem.**	1. Python tuples structure related problem.	After the Lab Class students will be able to learn: ❖ To practice and known about tuples structure related different types of problems.	➢ Projector. ➢ Computer. ➢ PyCharm / Anaconda / IDLE / Jupiter notebook. YouTube link: https://www.youtube.com/watch?v=II1M79euBUk
Lecture-23	**Chapter-9: (Set Structure)**	9.1 State Set structure in Python. 9.2 Mention the properties of Set items. 9.3 Explain creating a Set using curly braces and set() method.	After the class students will be able to learn: ❖ To know about state Set structure in Python. ❖ Properties of Set items.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=YVyWORhFnCU
Lecture-24	**Chapter-9: (Set Structure)**	9.4 Explain Adding items to the set and Removing items from the set. 9.5 Describe Python set operation (Union, Intersection, difference). 9.6 Write programs using Set in Python.	After the class students will be able to learn: ❖ To know about adding items to the set and Removing items from the set. ❖ Python set operation (Union, Intersection, difference). ❖ Program writing by using Set in	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=YVyWORhFnCU

			Python.	
Assignment-03		**Assignment on lecture 07–09**	❖ **To build up their confidence level & increase creativity on chapter- 07- 09**	**Must be submitted within the next two lectures.**
Lab-10	**Practice on Set structure related problem.**	1. Python set structure related problem.	After the Lab Class students will be able to learn: ❖ To practice and known about set structure related different types of problems.	➢ Projector. ➢ Computer. ➢ PyCharm / Anaconda / IDLE / Jupiter notebook. YouTube link: https://www.youtube.com/watch?v=EiA6N198Kzk
Lecture-25	**Chapter-10: (Dictionary Structure)**	10.1 Define Dictionary in Python. 10.2 State Accessing Values in Dictionary. 10.3 Describe the process of values are Added into dictionary values.	After the class students will be able to learn: ❖ To know about definition of Dictionary in Python. ❖ To know about the process of values are Added into dictionary values.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=RQ9XfR7yax0
Lecture-26	**Chapter-10: (Dictionary Structure)**	10.4 Describe the process of elements are Deleted from the Dictionary. 10.5 Mention the properties of Dictionary Keys. 10.6 Explain Built-in Dictionary Functions & Methods. 10.7 Write programs using Dictionary.	After the class students will be able to learn: ❖ To know about the process of elements are Deleted from the Dictionary. ❖ To know about the properties of Dictionary Keys and Built-in Dictionary Functions & Methods. ❖ Program writing by using Dictionary.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=RQ9XfR7yax0
Lab-11	**Practice on Dictionary structure related problem.**	1. Python dictionary structure related problem.	After the Lab Class students will be able to learn: ❖ To practice and known about dictionary structure related different types of problems.	➢ Projector. ➢ Computer. ➢ PyCharm / Anaconda / IDLE / Jupiter notebook. YouTube link: https://www.youtube.com/watch?v=3qEW2p-PuRk

Lecture-27	**Class Test-04**	Chapter 9 and 10 (Set and Dictionary structure)	❖ To know about Python Set and Dictionary structure.	• **Marker.** • **Exam answer script paper.** • **Question paper.**
Lecture-28	**Chapter-11: (Function Operation)**	11.1 Define a Function. 11.2 Distinguish between library & user-defined function.	After the class students will be able to learn: ❖ To know about definition of function and distinguish between library & user-defined function.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=m9o9itPDjAs
Lab-12	**Practice on Function operation related problem.**	1. Python function operation related problem.	After the Lab Class students will be able to learn: ❖ To practice and known about function operation related different types of problems.	➢ Projector. ➢ Computer. ➢ PyCharm / Anaconda / IDLE / Jupiter notebook. YouTube link: https://www.youtube.com/watch?v=-Rq_1JKNYwg
Lecture-29	**Chapter-11: (Function Operation)**	11.3 State Calling a Function. 11.4 Explain Passing by Reference Versus Passing by Value.	After the class students will be able to learn: ❖ To know about calling a function. ❖ To know about Passing by Reference Versus Passing by Value etc.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=yAsq15hvZKc
Lecture-30	**Chapter-11: (Function Operation)**	11.5 Describe Function Arguments. 11.6 Mention Uses of Date and Time Functions. 11.7 Write programs using user-defined functions.	After the class students will be able to learn: ❖ To know about function arguments. ❖ Uses of Date and Time Functions. ❖ Program writing by using user-defined functions.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=CoQG2NacEd8
Lab-13	**Practice on Function operation related problem.**	1. Python function operation related problem.	After the Lab Class students will be able to learn: ❖ To practice and known about function operation related different types of problems.	➢ Projector. ➢ Computer. ➢ PyCharm / Anaconda / IDLE / Jupiter notebook. YouTube link: https://www.youtube.com/watch?v=GTWxn75Nf-k

Lecture-31	**Chapter-12: (Files I/O Operation)**	12.1 State the File Operation. 12.2 Describe the File opening modes. 12.3 Describe the File Opening and Closing functions.	After the class students will be able to learn: ❖ To know about File Operation. ❖ Learning about the File Opening and Closing functions etc.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=lnmonWbNIsQ
Lecture-32	**Chapter-12: (Files I/O Operation)**	12.4 Explain the File Reading and Writing functions. 12.5 Write programs for file input/output operation.	After the class students will be able to learn: ❖ To know about the File Reading and Writing functions. ❖ Program writing by using file input/output operation.	➢ Projector. ➢ Computer. ➢ White board & Marker. YouTube link: https://www.youtube.com/watch?v=8pD44zKlW0w
Assignment-04		**Assignment on lecture 10–12**	❖ **To build up their confidence level & increase creativity on chapter- 10- 12**	**Must be submitted within the next two lectures.**
Lecture-33	**Quiz Test-04**	Chapter 11 and 12 (Function and Files I/O operation)	❖ To know about Function and Files I/O operation.	• **Marker.** • **Exam answer script paper.** • **Question paper.**
Lab-14	**Final Lab Test Exam**	Lab topics: All	After the Lab Class students will be able to learn: ❖ To test their practical confidence level for the final lab exam.	➢ Projector. ➢ Computer. ➢ PyCharm / Anaconda / IDLE / Jupiter notebook. YouTube link: https://www.youtube.com/watch?v=DpC93vuzs8k
Lecture-34	**Model Test**	Chapter: All	After the exam students will be able to increase their confidence level for the final exam.	➢ **Marker.** ➢ **Whiteboard.** ➢ **Question and Answer script paper.**
Lecture-35	**Presentation**	Short presentation by individual students	After the presentation students will be able to learn be confident on practical life.	➢ **Desktop / Laptop.** ➢ **Projector.**

*****BEST OF LUCK*****