School of Computer Engineering
Kalinga Institute of Industrial Technology (KIIT),
Deemed to be University, Bhubaneswar

L&T Lab - Lesson Plan

Program	:	B.Tech. (CS, IT, CSSE, CSCE, ECS)
Academic Session	:	Spring 2022-2023
Semester	:	6th
Subject Code	:	CS-3096
Subject	:	T&T lab.
L-T-P	:	0-0-2
Faculty Members	:	
(L&T Lab. Course Committee)		**Prof. Anil Kumar Swain**, Prof. Mainak Bandyopadhyay, Prof. Ambika Prasad Mishra, Prof. Niranjan Kumar Ray, Prof. Lalit Kumar Vashishtha, Prof. Subhashree Darshana, Prof. Ajaya Kumar Parida, Prof. Lipika Dewangan, Prof. Krishnandu Hazra, Prof. Ajay Anand, Prof. Himansu Das, Prof. Sarita Mishra, Prof. Jayanti Dansana, Prof. Sampriti Soor, Prof. Prabhu Prasad Dev, Prof. Soumya Ranjan Mishra, Prof. Mohit Ranjan Panda, Prof. Debajyoty Banik, Prof. Ashish Singh

Lab. No.	Content of Lab. Exercises	
	SECTION-I : Basics of Python Programming	
L1.	**Introduction:** Installing Python & getting familar with different python IDE & code editors (Anacona, PyCharm, Spyder, Jupyter etc) for running a sample program. Identifiers & Keywords; Variables, Constants & Literals; Comments; Input & Output; Data types; Numbers & Type conversion; Operators & expressions	
L2.	**Flow Control**: Branching: if..else Looping: while, for Others: break, continue & pass statements in flow control	
L3.	**Function:** Defining a user defined function, calling a function, parameter passing mechansim to a function, Lambda function in python Modules in Python: Creating a module & importing it (import statement) Well known Built-in Functions (or modules) in Python	
	SECTION-II : Data Structures in Python	
L4.	**Arrays:** Create, Append, Pop, Reverse Examples String: **List:** How to build and modify a list, access elements from a list, and loop through the values in a list. Also covers numerical lists, list comprehensions, tuples, and more.	

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	Dictionary: How to build and modify a dictionary, access the information in a dictionary, and loop through dictionaries in a variety of ways. Includes sections on nesting lists and dictionaries, using an OrderedDict and more. **Tuples:** Pack, Unpack, Compare, Slicing, Delete, Key **Set:** Initializing a set, add() and update() methods; remove() and discard(); Set union, intersection, difference	
	SECTION-III : OOP in Python	
L5.	Class & Objects; Constructors; Operator Overloading	
L6.	Inheritance & File handling; Modules & Packages	
	SECTION-IV : Tools For Data Analytics	
L7.	NumPy: Pandas:	
L8.	Matplotlib: Seaborn Scipy	
	SECTION-V : Tools for Machine Learning/Deep Learning	
L9.	Sklearn (or Scikit Learn)	
L10.	TensorFlow	
L11.	Keras	
L12.	PyTorch	
L13.	G CO Lab	
	SECTION-VI (Optional) : Visualization Third party Tools, Deployment in Python	
L14.	**Visualization:**Tableau, Microsoft Power BI, Google Data Studio, Google Analytics, Sisense, Domo	
L15.	**Deployment:** Github; Bitbucket; API: Flask, DJango	
	SECTION-VII : Mini Project Work	
L16.	Groupwise mini project topic allotment	
L17.	Groupwise mini project review	
L18.	Groupwise mini project review	
L19.	Groupwise mini project evaluation	
L20.	Groupwise mini project evaluation	