Course Title:	Problem-Solving and Python Programming		
Course Code: UDS 102	**No. of credits:** 3	**L-T-P:** 20-10-30	**Learning hours:** 45
			L: Lectures**; T:** Tutorials**; P:** Practicals
Pre-requisite Course Code and Title (if any): None			
Department: Natural and Applied Sciences			
Course Coordinator: Dr. Adwitiya Sinha		**Course Instructor:**	
Contact Details:			
Course Type: Major		**Course Offered in:** Semester-2	

Course Description

The course begins with exploring diverse ways of computational approaches and applying them for problem-solving. The fundamentals include building blocks of algorithmic problem solving, pseudo code, flow charts, program flow diagrams, and infographics. The students will get acquainted of strategies for designing algorithms using iteration, recursion, function, and file handling. In the later phase, Python constructs would be introduced as a programming tool to develop problem-solving approaches. This will involve the basics of Python, control statements, data structures, lambda functions, modules, and packages. The course will also include visualizations, data, and code storytelling, and iPython for interactive computing. Overall, the course covers complete understanding of Python programming with primary focus on problem solving approaches to real-world cases.

Course Objectives
- To understand the fundamentals of algorithmic approaches to problem solving
- To learn Python programming essentials using conditionals, iterations, recursions
- To use functions and file handling in Python
- To utilize data structures in Python for data representation and manipulation
- To perform data visualization, file handling and interactive computing in Python