Programming Foundations

Session No#	Session mode	Session Details	Week-Day	Duration Hrs
1	EL-Async	IU 1: Programming Primer • Key programming terminologies and programming • Paradigms • Problem-solving skills, Computational Thinking • Software behavioural design IU 2: Programming Basics - Part 1 • Data types, Variables • Implement conditional statements (if, else) in programs. Use loops for repetitive tasks. Complete MCQ	Before Sync session	2
2	FC -Sync	IU 1: Programming Primer Familiarization with programming terms, techniques, and paradigms IU 2: Programming Basics - Part 1 Develop an algorithm and outline the solution Explain Assignment 1 & 2	1-1	3
3	AS -Sync	Complete the assignment and submit Assignment 1 - Algorithm Development to outline the solution	1-2	3
4	AP-Async	Additional Practice- Complete all the pending work	Before Sync Session	7
5	EL-Async	IU 3: Programming Basics - Part 2 • Understand the importance of modular programming. • Explore basic data structures like lists and dictionaries. IU 4: Object Oriented Programming • Principles of OOP - Encapsulation, Abstraction, Polymorphism, Inheritance, Interfaces Object oriented design and development Complete MCQ	Before Sync session	2
6	FC- Sync	IU 3: Programming Basics - Part 2 Manipulation of variables, data structures, and application of conditional statements and loops Modular programming IU 4: Object Oriented Programming Familiarization with Object Oriented Programming principles Explain assignment 2	2-3	3
7	AS- Sync	Complete the assignment and submit Assignment 2 - Problem-solving using procedural programming paradigms	2-4	3

8	AP-Async	Additional Practice- Complete all the pending work	Before Sync Session	7
9	EL-Async	IU 5: Testing & Documentation Different types of testing (unit, integration, etc.) and its importance Complete MCQ	Before Sync session	2
10	FC-Sync	IU 5: Testing & Documentation Familiarization with Object Oriented Programming Unit testing Explain assignment 3	3-5	3
11	AS -Sync	Complete the assignment and submit Assignment 3 - Problem-solving using Object Oriented Programming Paradigms and Unit testing	3-6	3
12	AP-Async	Additional Practice- Complete all the pending work	Before Sync Session	6
13	PM-Sync	Project Mentoring: Explain the project tasks 1. Formulate the system requirements specification to fulfil the functional, technical, and interface requirements. 2. Design the software components required to fulfil the system requirements specification. 3. Evaluate the tools and frameworks required for the development. 4. Develop the software based on the design. 5. Evaluate the implemented solution.	4-7	3
14	PI-Async	Complete project tasks 1 -3	Before Sync session	4
15	PI-Async	Complete project task 4-5	Before Sync session	4
16	PM-Sync	Project Mentoring to complete the project tasks	4-8	3
17	PI-Async	Prepare Project Report and submit	Before Assessment	2
18	SA-Sync	Summative Assessment (Each learner)	5-9	30 min

EL-E-Learning
FC-Flipped Class
AS-Assignment
PM-Project Mentoring
PI-Project Implementation
AP-Additional Practice
SA-Summative Assessment
Sync- Synchronous Sesson
Async- Asynchronous Session