University of Global Village (UGV), Barishal.
Sessional & Lab Module

Department Name: EEE. Semester: 2nd

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| Subject Name: | Structured Programming with Python Sessional | | | Total Class Hour : | 2940m (49h) |
| Subject Code : | CSE 0611-1210 | Total Class: | 24 | Total Practice Hour : | 4530m (75.5h) |
| Directed by : | Md. Abdul Aziz | | | Total Hour : | 7470m (124.5h) |

| Class No: | Skill Title | Details & Training Procedure | Class Hour | Practice Hour | Outcomes | Note |
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| 01 | Introduction to 'Python' programming | ➢ Setting up the development environment (IDE, compiler, etc.).<br>➢ Writing a simple "Hello, World!" program.<br>➢ Details About Programming language. Environment, Compiler, Interpreter, Syntax, keyword, Identifier, tools, debug, run, Command Promote, etc.<br>➢ Input and output using `input()` and `print`. | 120m | 240m | ✓ capable to download necessary IDE, Compiler, etc.<br>✓ capable to development environment & basic setup.<br>✓ Understanding how to run & debug their first program in Python.<br>✓ Capable to use input/output command.<br>✓ Understanding how to work Compiler, Interpreter, and other tools.<br>✓ Understanding details concept in a programming language and its work process. | |
| 02 | Sequential Programming | ➢ Writing sequential code<br>➢ Using variables and data types<br>➢ Input and output | 120m | 240m | ✓ Understanding how Writing sequential code<br>✓ Understanding how Using variables and data types<br>✓ Understanding how to work Input and output | |
| 03 | | ➢ Basic arithmetic operations and expressions. | 120m | 300m | ✓ arithmetic operations and expressions. | |

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| | Introduction to Conditional Statement. | ➢ To be familiar with if - else statement.<br>➢ To be familiar with switch statement.<br>➢ Nested if…else statement. | | | ✓ Understanding how to work and use Conditional Statement.<br>✓ Understanding how to use Nested if.... else statement.<br>✓ capable to make Result sheet, Current bill etc.<br>✓ capable to use Conditional Statement in programming | |
| 04 & 05 | Introducing Loops | ➢ To be familiar with while, do while and for loop in Python.<br>➢ Difference between while, do while and for loop.<br>➢ Loop continued (nested loop).<br>➢ switch case flow control.<br>➢ brake & Continue.<br>➢ goto<br>➢ a simple project using loops. | 240m | 480m | ✓ Understanding how to work and use with while, do while and for loop.<br>✓ Understanding how to use Nested loops statement.<br>✓ capable to use Conditional flow in programming.<br>✓ Understanding how to use switch case, brake & Continue. | |
| 06 | Assessment 1 | Assessment 1 | 120m (2h) | | Assessment 1 | |
| 07 | Introducing Functions | ➢ Introduction to functions in Python<br>➢ Function prototypes and headers.<br>➢ Pass by value and pass by reference.<br>➢ User-define function.<br>➢ Types of User-define functions.<br>➢ Recursion.<br>➢ Python Storage class. | 120m | 180m | ✓ Understanding how to use Function in Python.<br>✓ Understanding how to use Function prototypes and headers in Python.<br>✓ capable to use Pass by value and pass by reference. | |
| 08 & 09 | Introducing Arrays. | ➢ Introduction to arrays.<br>➢ One-dimensional and multi-dimensional arrays.<br>➢ Array manipulation and practice exercises.<br>➢ Two-Dimensional Array<br>➢ Array of Characters and String. | 240m | 450m | ✓ Understanding what is array and how it works.<br>✓ Understanding how to use One-dimensional and multi-dimensional arrays<br>✓ capable to use Array of Characters and String | |
| 10 & | | ➢ Introduction to structures and user-defined data types. | 240m | 480m | ✓ Understanding what is Structures & Pointers and how it works. | |

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| 11 | Structures & Pointers | ➢ Creating and using structures in Python.<br>➢ Creating and using list, set, tuples, and dictionary. | | | ✓ capable to use Structures & Pointers.<br>➢ capable to use list, set, tuples, and dictionary. | |
| 12 | Assessment 2 | Assessment 2 | 120m (2h) | | Assessment 2 | |
| 13 & 14 | Modularization | ➢ Organizing code into modules<br>➢ Importing modules<br>➢ Creating and using custom modules | 240m | 300m | ✓ Understanding what is string function and how it works.<br>✓ capable to use strings & string function. | |
| 15 & 16 | Lists and Data Structures | ➢ Lists and list operations<br>➢ Tuples and sets<br>➢ Dictionaries and key-value pairs | 240m | 360m | ✓ Understanding what is list operation and how it works<br>✓ Understanding what is tuples, sets and how it works<br>➢ capable to use Dictionaries and key-value pairs | |
| 17 & 18 | Error Handling | ➢ Handling exceptions with `try` and `except`<br>➢ Raising exceptions<br>➢ Best practices for error handling | 240m | 360m | ➢ Understanding how to use Handling exceptions with `try` and `except` and how it works<br>➢ capable to use Raising exceptions<br>➢ capable to use and Best practices for error handling. | |
| 19 & 20 | File Handling | ➢ Reading and writing files<br>➢ File modes and file objects<br>➢ Exception handling with file I/O | 240m | 420m | ➢ Understanding how to Reading and writing files and how it works<br>➢ Understanding what is File modes and file objects and how it works<br>➢ capable to use Exception handling with file I/O | |
| 21 | Assessment 3 | Assessment 3 | 120m (2h) | | Assessment 3 | |
| 22 23 | Group Project Work | ➢ a real life usable Application | 240m | 720m | ✓ Prove their Capability by using previous practical knowledge | |
| 24 | **Final Assessment*** ** | **Final Assessment*** ** | **180m (3h)** | | **Final Assessment*** ** | |