**Python 101 Lesson Plan**

**Time:** 90 minutes

**Instructor:** Michael Sauer

**Classroom Resources:**

* Kali Linux with VSCode installed.
* Handout with code examples

**Course Overview:** This lesson introduces complete beginners to the Python programming fundamentals through hands-on coding exercises and examples

**Lesson Objectives - Students will:**

* Understand what Python is and why it’s useful
* Setup a Python Development environment
* Write and execute basic Python code
* Work with variables, data types, and basic operators
* Use input/output functions
* Apply basic control structures
* Create simple functions

**Opening (10 minutes)**

* What is Python
* Why is it important to cybersecurity

**Module 1: Getting Started (10 minutes)**

* Getting to know VSCode
* First Python Program

**Module 2: Variables and data types (20 minutes)**

* What are variables
* Variable naming rules and conventions
* Assignment operator (=)
* Basic data types
  + Strings (str)
  + Integers (int)
  + Floating-point numbers (float)
  + Booleans (bool)
* Type Checking
  + Using the type() function
  + Understanding dynamic typing

**Module 3: Basic Operations and Input/Output (15 minutes)**

**Arithmetic Operations**

* Addition, subtraction, multiplication, division
* Integer division and modulo
* Exponentiation

**String Operations**

* Concatenation
* String multiplication
* Basic string methods

**User Input**

* input() function
* Converting input to different data types

**Module 4: Control Structures (20 minutes)**

**Conditional Statements**

* If, elif, else statements
* Comparison operators
* Logical operations (and, or, not)

**Introduction to Loops**

* for loops with ranges
* While loops
* Loop control with break and continue

**Module 5: Functions (15 minutes)**

**Why Functions?**

* Code reusability
* Organization
* Modularity

**Creating Functions**

* def keyword
* Parameters and arguments
* Return statements