C++ PROGRAMMING SYLLABUS

Ivy League School Prep Center

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Week 1:

- Introductions
  - o What's your name? What grade you're in, what do you want to learn and what's your goal?
  - o Who I am: What I'm doing, what I went to school for, age, AMA!
  - o C++ description and uses
  - o Downloading our IDE together!
  - o Running 'Hello World'
- Printing:
  - o Breakdown 'Hello World!'
  - o Tell me about yourself, but on the terminal! Get creative! Two truths and one lie.
  - o Introduction to print formatting commands.
  - o Share screens and feedback.
  - o Questions
  - o Homework – Describe your favorite day with new formatting commands. (3 paragraphs – intro, body, and conclusion

Week 2:

- Variables
  - o Questions and review homework
  - o Introduction of variables
    - ▪ Data types: int, string, float, char
    - ▪ Modify and edit!
    - ▪ Arrays: A collection of the same type of variables
  - o User Input
    - ▪ Reading input from the user
  - o Create your own Mad Libs!
- User Input / Operators
  - o Mad Libs (part 2)
  - o Introduction to operators & math (+, -, *, /, %)
  - o Homework – Create a simple calculator
    - ▪ Simple arithmetic
    - ▪ Constraints

Week 3:

- Logic in Programming (Arrays & Loops)
    o Questions and review homework
    o Introduction to arrays
    o If-else statement introduction
        ▪ Comparison operators (==, !=, >, <, <=, >=)
    o Numerical examples (age, height, weight)
    o Nested If-else statements
- Loops
    o While loops & For Loops
        ▪ What is the difference between them?
        ▪ Which one to use
    o Homework – Taking Bob the Snail through his quest by utilizing if-else statements and at least while/for loop. Must also include a form of user input.

Week 4:

- Functions
    o Questions and review homework
    o What are Functions?
        ▪ Arguments, data types, returns
        ▪ Scope
    o Modifying Calculator to be more organized and efficient with functions
- Classes
    o Introduction to Classes (what makes C++ special)
        ▪ Classes uses and objects
        ▪ Access specifiers
    o Let's create ourselves!
    o Good-bye and farewell!
    o Game outro 😊