Python Programming Levels 1, 2, & 3 Syllabus

1. **Assumptions:**
2. Each class is 2 hours long and will include 1 topic.
3. Each class requires a learning objective and a related group project in Python.
4. The information about Python should be evenly distributed between the 3 levels from basic to more advanced.
5. **Topics to Cover By Level**
6. **Level 1 Basic**

* Topic 1.1 (level 1: topic #1): Introduce Data Types, Operators & Variables
* Topic 1.2: Branching, Conditional Statements & Iteration
* Topic 1.3: Common Iterative Code Problems
* Topic 1.4: Abstraction & Recursion
* Topic 1.5: Floating Point Numbers, Successive Refinement & Finding Roots

1. **Level 2 Intermediate**
   * Topic 1.6: Introduction to Lists
   * Topic 1.7: Mutability, Dictionaries & Efficiency
   * Topic 1.8: Algorithm Complexity: Log, Linear, Quadratic & Exponential Algorithms
   * Topic 1.9: Binary Search, Bubble & Selection Sort
   * Topic 1.10: Divide and Conquer Methods, Merge Sort, Exceptions
2. **Level 3 Advanced**

* Topic 1.11: Testing & Debugging
* Topic 1.12: Dynamic Programming
* Topic 1.13: Object-oriented Programming
* Topic 1.14: Abstract Data Types, Classes & Methods
* Topic 1.15: Group Project – Pulling It All Together