Suggested Course Outline

for SalesForce Python training

# Module 1. Introduction to Object Oriented Programming

* Introduction to Object Oriented concepts
  + OO Software Architecture
  + OO Design
  + Objects and Classes
  + Association, Aggregation and Composition
  + Encapsulation and Abstraction
  + Inheritance
  + Polymorphism
* Topics in Object Oriented Programming
  + Writing a class
  + Instantiating an object
  + Initializing an object
  + Class and object variables
  + Class and Static variables and methods
  + Operator Overloading
  + Using getattr(), setattr() and hasattr()
  + Mixins

# Module 2: Advanced topics in Python

* List comprehensions
* Functional programming with *map(), filter() and reduce()*
* Iterators
* Generators
* Decorators

# Module 3: Design Patterns

* Introduction to Design Pattern concepts
* Model-View-Controller
* Observer
* Singleton
* Factory

# Module 4: Serialization and deserialization with XML and JSON

* Serialization and Deseralization with XML and JSON
* Introduction to XML
* Parsing XML
* The DOM and SAX Parsers for XML
* JSON serialization and deserialization

# Module 5: Database access in Python

* Using psycopg2 to connect to PostGres in Python
* Executing SQL statements in Python
* Fetching Data
* Using cursors
* Parameterized statements
* Transaction control with commit and rollback

# Module 6. Threaded programming in Python

* When threads in python make sense
* The Cpython Global Interpreter Lock (GIL)
* The threading module
* Mutexes
* Semaphores
* Threadpools
* Futures

# Module 7. Unit Testing with Python

* Using PyUnit with Python
* Creating Test Suites and Test Runners
* Using *nose*.

# Optional modules

# Module 8. Using the Socket API in Python

* Creating clients
* Creating servers
* Creating a multi-threaded socket server
* Setting socket options

# Module 9. Python package management

* Initialization
* Namespaces
* How to execute modules as scripts
* Using imports