

Python: Game Design Syllabus- MMC Scholars

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14-Week Project Group:

- **Week 1:**

- *Introduction to Python*
 - Setting up your development environment
 - Getting acclimated to your development environment
 - Learning the interface
 - Some Basic Coding

Homework: Send a .py file of code that prints “Hello World!” to the console.

- **Week 2:**

- *Let's get coding!*
 - *Python Syntax*
 - Variables
 - Booleans
 - Commenting
 - Whitespace
 - Math Functions

Homework: Make a tip calculator!

- **Week 3:**

- Understanding Strings
 - Escape characters
 - Accessing info by index
 - Various string methods
 - lower()
 - upper()
 - str()
 - Dot notation
 - Printing
 - Concatenation
 - “+” concatenation
 - “%” concatenation

- **Week 4:**

- Conditionals and Control Flow
 - Comparators and Boolean Operators
 - ==, !=, >, <, <=, >= (Comparators)
 - and, or, not
 - Order of Operations (N.A.O)
 - If/Else Syntax/Statements

- We can use Boolean Operators and Comparators to make cohesive and quality if/else statements
 - **Homework:** Make a simple If/Else block that returns a statement based on an input the user
- **Week 5:**
 - Functions
 - Setting up Functions
 - Using Functions
- **Week 6:**
 - Data Structures: Lists and Dictionaries
 - Lists
 - Creating Lists
 - Iterating Over Lists
 - Accessing Information from lists
 - Dictionaries
 - Creating Dictionaries
 - Iterating Over Dictionaries
 - Accessing Information form Dictionaries
 - Iteration Notation
 - List Comprehensions
 - List Slicing (`l=[i**2 for l in range(1,11)] /n print l[2:9:2]`)
 - Lambdas--Using Lambdas
- **Week 7:**
 - Loops
 - For Loops
 - While Loops
- **Week 8:**
 - An introduction to Classes
 - Class Basics
 - Member Variables and Functions
 - Inheritance
- **Week 9:**
 - File I/O:
 - Reading from Files
 - Writing to Files
 - 'with' and 'as'
 - Buffering Data
- **Week 10:**
 - Making a game
 - Create Characters
 - Add scenery
 - Make our characters move
- **Week 11:**
 - Making a game pt. 2

- Let our characters turn
 - Let our characters shoot
 - Add some bad guys
- **Week 12:**
 - Making a game pt. 3
 - Collisions
 - Add a HUD
 - Health Meter
 - Clock
- **Week 13:**
 - Shaping up our game
 - Win/Lose
 - Let's add music and SFX
- **Week 14:**
 - Tying up all the loose ends
 - Questions from stuff covered?
 - What else can we add to our game?