



Course Outline: Python Year 10 Resource

| Session # | Topic/Content |
|----------------------|---|
| 1 of 12 | Introduction to Programming <ul style="list-style-type: none"> » Defining computer programming. » Introduction to Python and IDLE IDE. » Using print () function in Interactive mode. » Using print () function in script mode. |
| 2 of 12 (30 mins) | Errors, Comments, User Input and Variables <ul style="list-style-type: none"> » Using the IDE to find and correct code errors. » Good practice for commenting code. » Using the input () function to read keyboard input. » Purpose of variables. » Variables: Creating, setting and printing values to screen. |
| 3 of 12 | Basic Selection (Making Decisions) <ul style="list-style-type: none"> » Introduction to decision making in programming. » Logical operators (>,<, ==, >=,<=) » if Statement » if/else Statement |
| 4 of 12 | Further Selection (Making Complex Decisions) <ul style="list-style-type: none"> » Introducing the concept of multiple conditions in programming. » elif Statement |
| 5 of 12 | Repetition (While Loop) <ul style="list-style-type: none"> » Introduction to loops. » The while loop. » Sentry variables. » The infinite loop problem & manual tracing. |
| 6 of 12 | Repetition (For Loop) <ul style="list-style-type: none"> » Complex conditions. » Logical operators (AND, OR, NOT). » The for loop. |



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| 7 of 12 | <p>Lists</p> <ul style="list-style-type: none"> » Definition of Lists in a programming context. » Creating, accessing and updating lists. » Using loops to iterate through a list. » Sorting lists. |
| 8 of 12 | <p>Functions (methods)</p> <ul style="list-style-type: none"> » Benefits of user defined functions (methods) in programming. » Simple functions. » Parameterised functions. » Return types. » OPTIONAL: Variable visibility and global variables. |
| 9 of 12 | <p>Tic Tac Toe Development Week</p> <ul style="list-style-type: none"> » Validating user input. |
| 10 of 12 | <p>Tic Tac Toe Development Week</p> <ul style="list-style-type: none"> » Managing player turns and moves. |
| 11 of 12 | <p>Tic Tac Toe Development Week</p> <ul style="list-style-type: none"> » Implementing winning and losing functionality. |
| 12 of 12 | <p>Systems Testing</p> <ul style="list-style-type: none"> » Definition of systems testing, positive testing and negative testing. » Designing positive and negative tests. » Documentation simple test cases. » Benefits of test independence. » Scope of testing – How much testing is enough? |