## Programming 3

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| *SMS Code* | IN610001 | *Directed Learning hours* | 60 |
| *Level* | 6 | *Workplace or Practical Learning hours* | nil |
| *Credits* | 15 | *Self-Directed Learning hours* | 90 |
| Prerequisites | IN511001 | *Total Learning Hours* | 150 |
| *This course partially replaces IT214001*  *Name of other Programme: Bachelor of Information Technology (version 2)* | | | |

***Aims***

To extend students’ skills in object-oriented design and programming while introducing an industry-relevant programming language.

***Learning Outcomes***

At the successful completion of this course, students will be able to:

1. Write classes and methods following the principles of intermediate level object-oriented theory.
2. Write test classes and use code coverage tools.
3. Create GUI components and events for graphics-based applications.
4. Correctly implement a selection of beginning to intermediate level algorithms and abstract data types.

***Indicative Content***

* Introduction to a new IDE
* Unit testing
* Code coverage
* Class design and construction
* Class hierarchies, polymorphism, and programming to interfaces
* Data visibility, scope, method parameters, object references, nested classes
* Overloading, overriding
* Basic I/O management
* Exception handling
* Data formatting, dates
* Static methods
* Inheritance, abstract classes, restricting inheritance
* Sorting, searching
* GUI applications
* Mobile applications

***Assessment***

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| **Assessment Activity** | **Weighting** | **Learning Outcomes** |
| Checkpoints | 20% | 1,2,3,4,5 |
| Test | 30% | 1,3,4 |
| Assignments | 50% | 1,2,3,4,5 |

***Resources* Required:** TBA.