## Programming 2

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| *SMS Code* | IN511001/IX511001 | *Directed Learning hours* | 60 |
| *Level* | 5 | *Workplace or Practical Learning hours* |  |
| *Credits* | 15 | *Self-Directed Learning hours* | 90 |
| Prerequisites | IN510001 | *Total Learning Hours* | 150 |
| *This course partially replaces IT115001*  *Name of other Programme: Bachelor of Information Technology (version 2)* | | | |

***Aims***

To build event-driven, GUI (graphical user interface) applications using pre-built controls. To introduce the theoretical issues involved in Object-Oriented analysis, design and programming, and discuss the distinction between the OO and Procedural programming models. To build simple OO applications and learn to identify those situations that are most appropriate for OO implementation. To learn the principles of correct design and implementation for applications of this type.

***Learning Outcomes***

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

1. Use an IDE to develop interactive, event-driven GUI applications using common pre-built controls.
2. Write methods and event handlers for pre-built controls.
3. Declare and implement user-defined classes as part of an object-oriented implementation.
4. Demonstrate an understanding the basic principles of Object-Oriented analysis, design and programming, including encapsulation, inheritance and polymorphism.
5. Demonstrate good programming practices that are independent of the language or model used.

***Indicative Content***

IN511001 is a second programming course with a focus on Object Oriented programming, and as such uses an object oriented programming language and development environment.

* Problem analysis and program design
* Programming event-driven applications using primitive controls
* Logic of basic algorithms
* Use of core complex data structures
* Object-oriented programming including encapsulation, inheritance, code reuse and polymorphism
* Principles of good class design

***Assessment***

| **Assessment Activity** | **Weighting** | **Learning Outcomes** |
| --- | --- | --- |
| Programming projects | 60% | 1,2,3,4,5 |
| Theory examination | 30% | 1,2,3,4,5 |
| Classroom Tasks | 10% | 1,2,3,4,5 |

***Resources:***

Recommended Textbook

Stellman, A., & Greene, J. (2010). *Head first C#.* (2nd ed.). Sebastopol, CA: O’Reilly.