***OO Systems Development***

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| *SMS Code* | IN710001 | *Directed Learning hours* | 60 |
| *Level* | 7 | *Workplace or Practical Learning hours* | 0 |
| *Credits* | 15 | *Self-Directed Learning hours* | 90 |
| Prerequisites | IN610001 or IN613001 | *Total Learning Hours* | 150 |
| *This course partially replaces IT321001*  *Name of other Programme: Bachelor of Information Technology (version 2)* | | | |

***Aims***

To provide students with experience in the design and development of robust, scalable object-oriented software systems using an industry-relevant IDE. This course caters to experienced programming students who are working at an advanced level.

***Learning Outcomes***

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

1. Explain theoretical and pragmatic issues surrounding design and implementation of enterprise software systems.
2. Analyse a problem statement for a complex software system and design an appropriate class architecture for the problem solution.
3. Design and implement components of large software systems following appropriate software engineering methodologies, producing industry-quality code.
4. Follow good software engineering practice in the design of OO applications.

***Indicative Content***

* Major object-oriented (GoF) design patterns and architectural approaches.
* Advanced C# syntax and systems class libraries
* Relational databases and application-database connectivity
* GUI Application development
* Intermediate/advanced computational techniques
* Unit testing techniques, including stubbing
* Debugging, exception handling and validation
* Multi-threaded applications
* Content representation including XML
* Future directions in software development

***Assessment***

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| **Assessment Activity** | **Weighting** | **Learning Outcomes** |
| Theory Exam | 30% | 1,2,4 |
| Software Development | 70% | 1,2,3,4 |

***Resources* Required:**

* Appropriate IDE
* System documentation
* Appropriate texts