

**The Hong Kong University of Science and Technology**

**UG Course Syllabus**

Principles of Programming Languages

COMP 3031

3 Credits

No pre-/co-requisites

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**Course Description**

In this course, we learn how to design programs that are reliable, maintainable, efficient, and correct by construction. This is achieved through high-level programming techniques that focus on simplicity and expressiveness, notably using declarative and higher-order programming approaches and algebraic data types. We also review important programming language paradigms and constructs, including imperative, object-oriented, logic, and concurrent programming techniques, with an overall emphasis on functional programming and the Scala programming language. The overarching goal of this course is to give you some powerful new tools enabling you to solve hard problems more easily and reliably.

**Assessments:**

<b>Assessment Task</b>	<b>Contribution to Overall Course grade (%)</b>
Three programming assignments (10% each)	30%
Midterm examination	30%
Final examination	40%

**Required Texts and Materials**

N/A

**Additional Resources**

Reference book:

Martin Odersky, Lex Spoon, Bill Venner. Programming in Scala, 5th edition. Artima, 2021