

Module Title:	Programming Language Design
Language of Instruction:	English
Credits:	5
NFQ Level:	8
Module Delivered In	2 programme(s)
Teaching & Learning Strategies:	Learners will be expected to actively participate in class on the materials covered and through assigned projects throughout the year
Module Aim:	To provide learners with a theoretical knowledge of, and practical skills of designing programming languages
Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Understand the principles behind good programming language design
LO2	Design appropriate Domain Specific Languages
LO3	Understand the fundamentals of program language theory
Pre-requisite learning	
Module Recommendations <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
Incompatible Modules <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements <i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
No requirements listed	

Module Content & Assessment
Indicative Content
Paradigms

Functional; Declarative; Constraint Logic; Imperative; Object Oriented; Concurrent; Hybrid

Typing

Static and Dynamic; Strong and Weak; Type Inference

Variables

Scope; Parameter Passing; Mutability; Data Types; Memory Management

Execution

Compilers; Interpreters; Virtual Machines; Portability

Usability

Syntax; Readability; Structure; Grammar

Implementation Issues

Grammar; Tokens; Parsing; Boot-strapping

Assessment Breakdown

	%
Project	50.00%
End of Module Formal Examination	50.00%

No Continuous Assessment

Project

<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Assessment Date</i>
Project	Produce an in-depth critique of an existing programming language	1	25.00	n/a
Project	Design a Domain Specific Language suitable for a specific problem domain	2	25.00	n/a

No Practical

End of Module Formal Examination

<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Assessment Date</i>
Formal Exam	n/a	3	50.00	End-of-Semester

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	12 Weeks per Stage	2.00
Laboratory	12 Weeks per Stage	1.00
Independent Learning	15 Weeks per Stage	5.93
Total Hours		125.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_KCCGD_B	Bachelor of Science (Honours) in Computer Games Development	8	Group Elective 1
CW_KCSOF_B	Bachelor of Science (Honours) in Software Development	8	Group Elective 1