Compiler Design

Module Information

2022.01, Approved

Summary Information

Module Code	5121COMP
Formal Module Title	Compiler Design
Owning School	Computer Science and Mathematics
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 5
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
Computer Science and Mathematics

Learning Methods

Learning Method Type	Hours
Lecture	33
Practical	11
Seminar	11

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-CTY	CTY	September	12 Weeks

Aims and Outcomes

Aims	To introduce the concepts of languages and grammars leading to the principles of Compiler Design.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Understand the principles of recognisers for programming languages
MLO2	2	Illustrate efficient techniques for semantic analysis
MLO3	3	Describe common programming paradigms
MLO4	4	Represent the major constructs of programming languages as low level code.

Module Content

Outline Syllabus	Languages and grammarsRegular expressions, context-free grammars, BNF.Parsing techniques.Attribute grammarsTranslation schemes Type inferenceSymbol tables.Code generationTranslation to intermediate codeRegister allocationCompiler optimization.Programming ParadigmsObject-oriented and functional programming languages.
Module Overview	
Additional Information	This module will introduce the theory of programming languages and associated compiler design. It will cover the rationales for various languages and paradigms and provide in depth materials on the fundamentals of designing compilers for particular languages.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Code generation	40	0	MLO4
Centralised Exam	Exam	60	2	MLO1, MLO2, MLO3

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Reino Niskanen	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings